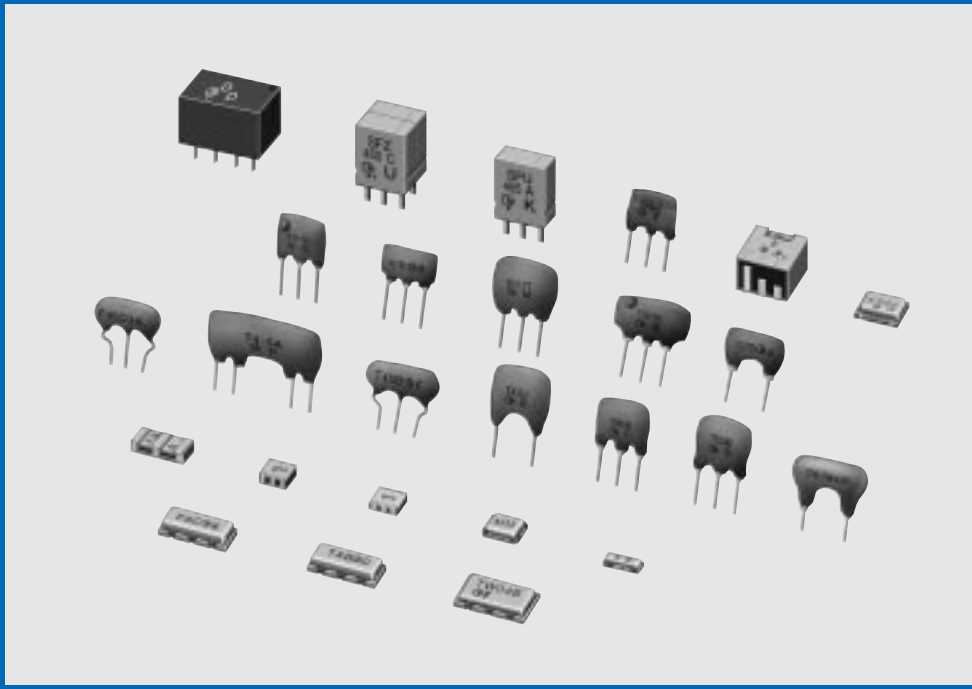
CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

CERAFIL®
(Filters / Traps / Discriminators) for AUDIO / VISUAL EQUIPMENT



muRata Innovator in Electronics

Murata
Manufacturing Co., Ltd.

Cat.No.P50E

CONTENTS

● Part Numbering

CERAFIL® for FM

(Global Part Number) **SF** **E** **LA** **10M7** **FAA0** **-B0**
❶ ❷ ❸ ❹ ❺ ❻

❶Product ID

Product ID	
SF	Ceramic Filters

❷Oscillation/Numbers of Element

Code	Oscillation/Numbers of Element
E	2 Elements Thickness Expander mode
T	3 Elements Thickness Expander mode
V	2 Elements Thickness Expander mode (2nd Harmonic)
K	2 Elements Thickness Expander mode (3rd Over Tone)

❸Structure/Size

Code	Structure/Size
L□	Lead Type
C□	Chip Type

□ is expressed "**A**" or subsequent code, which indicates the size.

❹Nominal Center Frequency

Expressed by four-digit alphanumerics. The unit is in hertz (MHz).
Decimal point is expressed by capital letter "**M**".

❺Product Specification

Code	Product Specification
FAA0	Four-digit alphanumerics express pass-bandwidth, center frequency tolerance, rank, series, others.

❻Packaging

Code	Packaging
-B0	Bulk
-R0	Plastic Taping ø180mm
-R1	Plastic Taping ø330mm
-A0	1500pcs. /Radial Taping H_0=18mm
-A1	1000pcs. /Radial Taping H_0=18mm

Radial taping is applied to lead type and plastic taping to chip type.
With non-standard products, two-digit alphanumerics indicating "Individual Specification" is added between "❺Product Specification" and "❻Packaging".

CERAFIL® for TV/VCR

(Global Part Number) **SF** **S** **RA** **4M50** **CF** **00** **-B0**
❶ ❷ ❸ ❹ ❺ ❻ ❼

❶Product ID

Product ID	
SF	Ceramic Filters

❷Oscillation/Numbers of Element

Code	Oscillation/Numbers of Element
S	2 Elements Thickness Shear mode
T	3 Elements Thickness Expander mode

❸Structure/Size

Code	Structure/Size
R□	Lead Type
K□	Chip Type

□ is expressed "**A**" or subsequent code, which indicates the size.

❹Nominal Center Frequency

Expressed by four-digit alphanumerics. The unit is in hertz (MHz).
Decimal point is expressed by capital letter "**M**".

❺Product Specification Code (1)

Code	Product Specification Code (1)
AF	Standard Bandwidth Type
BF	Tight Bandwidth Type
CF	Standard Bandwidth Type
DF	Broad Bandwidth Type
EF	Ultra-broad Bandwidth Type

The code **AF** is only applied to **SFT** series.

❻Product Specification Code (2)

Code	Product Specification Code (2)
00	Standard Type

❼Packaging

Code	Packaging
-B0	Bulk
-A0	Radial Taping H_0=18mm
-R1	Plastic Taping ø=330mm

Radial taping is applied to lead type and plastic taping to chip type.
With non-standard products, two-digit alphanumerics indicating "Individual Specification" is added between "❺Product Specification Code (1)" and "❻Product Specification Code (2)".

CERAFIL® for AM

(Global Part Number) **PF** ❶ **W** ❷ **LA** ❸ **450K** ❹ **P2A** ❺ **-B0** ❻

❶Product ID

Product ID	
PF	Ceramic Filters
SF	Ceramic Filters
CF	Ceramic Filters

❷Oscillation/Numbers of Element

Code	Oscillation/Numbers of Element
S	1 Element Length mode
W	2 Elements Length mode
U	1 Element Area Expansion mode
Z	2 Elements Area Expansion mode
P	4 Elements Area Expansion mode

❸Structure/Size

Code	Structure/Size
L□	Lead Type
C□	Chip Type

□ is "**A**" or subsequent code, which indicates the size. It varies depending on vibration mode and number of elements.

❹Nominal Center Frequency

Expressed by four-digit alphanumerics. The unit is in hertz (Hz). Capital letter "**K**" following three figures expresses the unit of "kHz".

❺Product Specification

Code	Product Specification
P2A	Standard Type

□□**A** indicates standard type.

❻Packaging

Code	Packaging
-B0	Bulk
-R0	Plastic Taping (ø180mm)
-R1	Plastic Taping (ø330mm)
-A0	Radial Taping H_0=18mm
-M0	Magazine Cassette

Radial taping is applied to lead type and plastic taping to chip type. With non-standard products, three-digit alphanumerics indicating "Individual Specification" is added between "❺Product Specification" and "❻Packaging".

CERAFIL® for Search-stop Signal Detection

(Global Part Number) **BF** ❶ **U** ❷ **LA** ❸ **450K** ❹ **C** ❺ **-B0** ❻

❶Product ID

Product ID	
BF	Resonator

❷Oscillation/Numbers of Element

Code	Oscillation/Numbers of Element
U	1 Element Area Expansion mode

❸Structure/Size

Code	Structure/Size
LA	Lead Type Standard

❹Nominal Center Frequency

Code	Nominal Center Frequency
450K	450kHz

❺Product Specification

Code	Product Specification
C□	Bandwidth

With standard type, □ is omitted.

❻Packaging

Code	Packaging
-B0	Bulk

Radial taping is applied to lead type and plastic taping to chip type. With non-standard products, "Individual Specification (serial number)" and "Lead Shape (Lead Bend : **B**)" are added between "❺Product Specification" and "❻Package Specification Code" upon specification.

Ceramic Traps

(Global Part Number) **TP** ❶ **S** ❷ **RA** ❸ **4M50** ❹ **B** ❺ **00** ❻ **-B0** ❼

❶Product ID

Product ID	
TP	Ceramic Traps

❷Function

Code	Function
S	Single Traps
T	Triple Traps
W	Double Traps

❸Structure/Size

Code	Structure/Size
R□	Lead Type
K□	Chip Type

□ is expressed "**A**" or subsequent code, which indicates the size.

❹Nominal Center Frequency

Expressed by four-digit alphanumerics. The unit is in hertz (MHz). Decimal point is expressed by capital letter "**M**".

❺Product Specification Code (1)

Code	Product Specification (1)
B	Broad-bandwidth Type
C	Low-capacitance Type

❻Product Specification Code (2)

Code	Product Specification Code (2)
00	Standard Type

❼Packaging

Code	Packaging
-B0	Bulk
-A0	Radial Taping H_0=18mm
-R1	Plastic Taping ø=330mm

Radial taping is applied to lead type and plastic taping to chip type. With non-standard products, three-digit alphanumerics indicating "Individual Specification" is added between "❻Product Specification Code (2)" and "❼Packaging".

Discriminators for FM

(Global Part Number) **CD** ❶ **A** ❷ **LA** ❸ **10M7** ❹ **GA** ❺ **001** ❻ **-B0** ❼

❶Product ID

Product ID	
CD	Discriminators

❷Oscillation

Code	Oscillation
A	Thickness Expander mode
S	Thickness Shear mode

❸Structure/Size

Code	Structure/Size
L□	Lead Type
C□	Chip Type

□ is expressed "**A**" or subsequent code, which indicates the size.

❹Nominal Center Frequency

Expressed by four-digit alphanumerics . The unit is in hertz (MHz). Decimal point is expressed by capital letter "**M**".

❺Product Specification

Code	Product Specification
GA	Two-digit alphanumerics express type, center frequency, rank, others

❻IC

Code	IC
001	Applicable IC Control Code

❼Packaging

Code	Packaging
-B0	Bulk
-A0	Radial Taping H_0=18mm
-R0	Plastic Taping ø=180mm
-R1	Plastic Taping ø=330mm

Radial taping is applied to lead type and plastic taping to chip type. With non-standard products, an alphanumerics indicating "Individual Specification" is added between "❻IC" and "❼Packaging".

Discriminators for TV/VCR

(Global Part Number) **CD** ❶ **S** ❷ **RH** ❸ **4M50** ❹ **E** ❺ **K** ❻ **048** ❼ **-A0** ❽

❶Product ID

Product ID	
CD	Discriminators

❷Oscillation

Code	Oscillation
S	Thickness Shear mode

❸Structure/Size

Code	Structure/Size
RH	Standard Type
RL	Low-profile

❹Nominal Center Frequency

Expressed by four-digit alphanumerics. The unit is in hertz (MHz).
Decimal point is expressed by capital letter "**M**".

❺Product Specification Code (1)

Code	Product Specification Code (1)
C	Three-terminals
E	Two-terminals

❻Product Specification Code (2)

Code	Product Specification Code (2)
K	Specification

❼IC

Code	IC
048	Applicable IC control code

❽Packaging

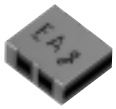
Code	Packaging
-B0	Bulk
-A0	Radial Taping H_0=18mm

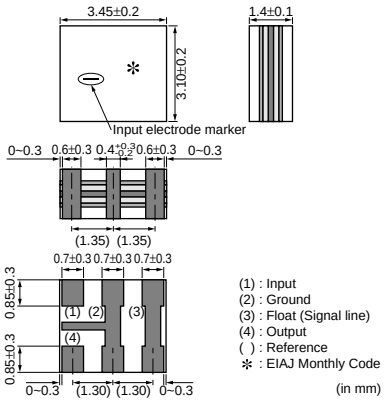
With non-standard products, a letter Indicating "Individual Specification" is added between "❼IC" and "❽Packaging".

CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

CERAFIL® 10.7MHz Small Chip Type SFECS Series

SFECS10M7 series for FM-receivers are small, high performance and super thin (1.5mm max.) filters.
Piezoelectric element is connected in the sandwich shape by ceramics substrate.
They have 1.5mm max. thickness and small mounting area. (3.45x3.1mm)
SFECS series and PFWCC (kHz filter for AM receiver) enable customers to make AM/FM set so thin and small sized.





■ Features

1. The filters are mountable by automatic placers.
2. They are slim, at only 1.5mm max. thickness, and have a small mounting area (3.45x3.1mm) enabling flexible PCB design.
3. Various bandwidths are available. Select a suitable type in accordance with the desired selectivity.
4. Operating temperature range :
   -20 to +80 (degree C)
   Storage temperature range :
   -40 to +85 (degree C)

■ Applications

1. Small, thin radios
2. Headphone stereos

Part Number	Center Frequency (fo) (MHz)	Nominal Center Frequency (fn) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Spurious Attenuation (dB)	Input/Output Impedance (ohm)
SFECS10M7HA00-R0	10.700 ±30kHz	-	180 ±40kHz	470 max.	4.5 ±2.0dB	30 min.	330
SFECS10M7GA00-R0	10.700 ±30kHz	-	230 ±50kHz	510 max.	3.5 ±2.0dB	30 min.	330
SFECS10M7FA00-R0	10.700 ±30kHz	-	280 ±50kHz	590 max.	3.0 ±2.0dB	30 min.	330
SFECS10M7EA00-R0	10.700 ±30kHz	-	330 ±50kHz	700 max.	3.0 ±2.0dB	30 min.	330
SFECS10M7DF0021-R0	-	10.700	fn ±200kHz min.	950 max.	3.0 ±2.0dB	20 min.	330

Attenuation Bandwidth : at 20dB loss point Area of Spurious Attenuation : [within 9MHz to 12MHz]
Insertion Loss: at minimum loss point
Center frequency (fo) defined by the center of 3dB bandwidth.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Standard Center Frequency Rank Code

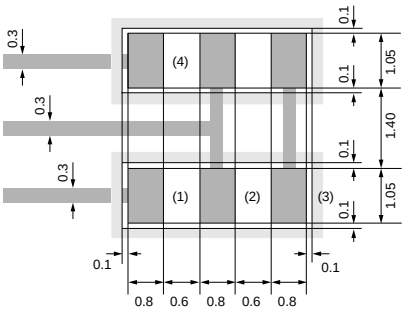
CODE	30kHz Step	25kHz Step
D	10.64MHz±30kHz	10.650MHz±25kHz
B	10.67MHz±30kHz	10.675MHz±25kHz
A	10.70MHz±30kHz	10.700MHz±25kHz
C	10.73MHz±30kHz	10.725MHz±25kHz
E	10.76MHz±30kHz	10.750MHz±25kHz
Z	Combination A,B,C,D,E	
M	Combination A,B,C	

Continued on the following page.

Continued from the preceding page.

1

■ Standard Land Pattern Dimensions

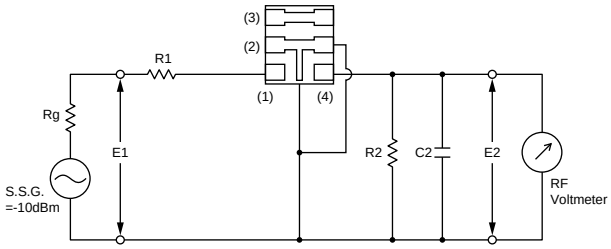


(1) : Input (2) : Ground (3) : Float Signal Line (4) : Out put

It shows solder resist land pattern.

(in mm)

■ Test Circuit

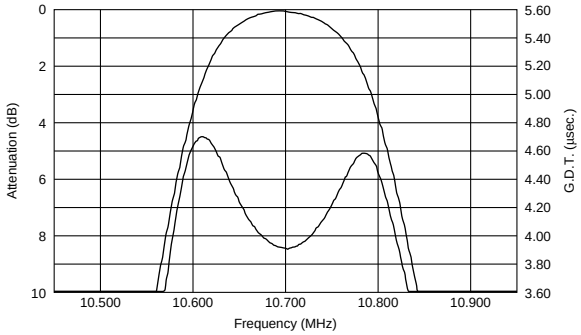


Rg=50Ω
R1=280Ω
R2=330Ω
C2=10pF
(Including stray capacitance and Input capacitance of RF Voltmeter)

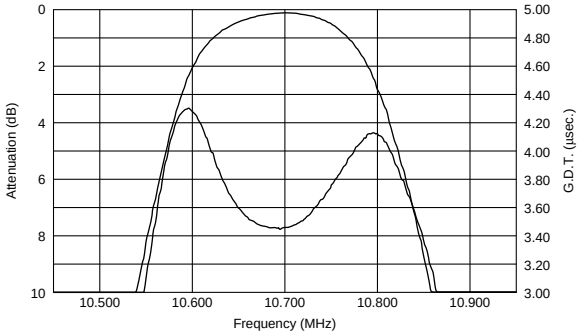
(1) : Input
(2) : Ground
(3) : Float
(4) : Output

■ Frequency Characteristics

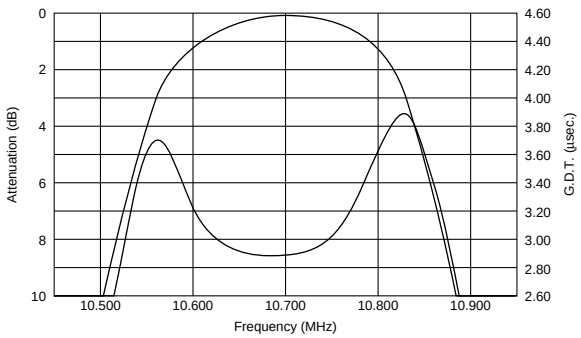
SFECS10M7HA00-R0



SFECS10M7GA00-R0

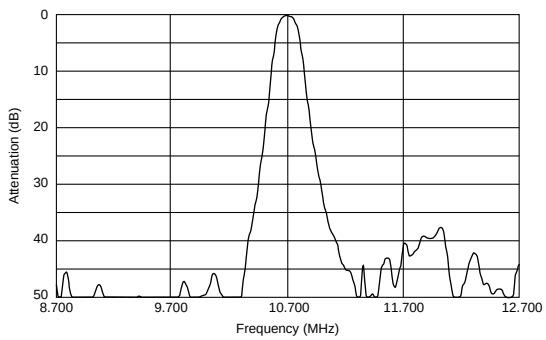


SFECS10M7FA00-R0

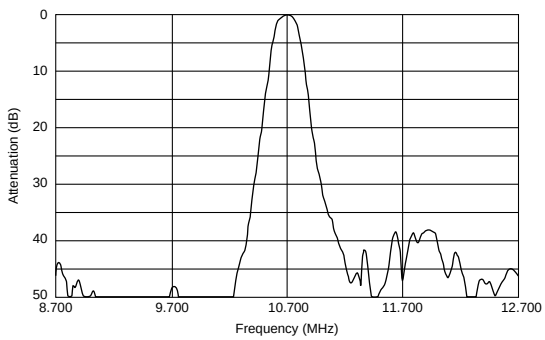


■ Frequency Characteristics (Spurious)

SFECS10M7HA00-R0



SFECS10M7GA00-R0



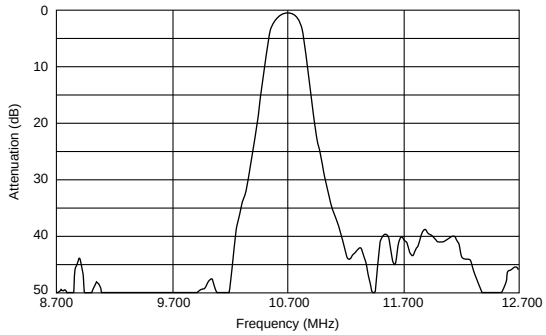
Continued on the following page.

Continued from the preceding page.

1

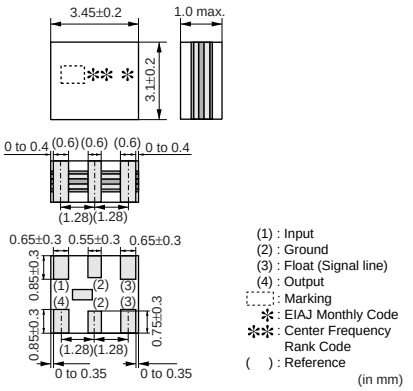
■ Frequency Characteristics (Spurious)

SFECS10M7FA00-R0



CERAFIL® 10.7MHz Ultra Thin Chip Type SFECD Series

SFECD10M7 series for FM-receivers are small, high performance and ultra thin (1.0mm max.) filters.
Piezoelectric element is connected in the sandwich shape by very thin ceramics substrate.
They have 1.0mm max. thickness and small mounting area. (3.45x3.1mm)
SFECD series enable customers to make RF modules so thin and small sized.



■ Features

1. The filters are mountable by automatic placers.
2. They are slim, at only 1.0mm max. thickness, and have a small mounting area (3.45x3.1mm) enabling flexible PCB design.
3. Operating temperature range :
   -20 to +80 (degree C)
   Storage temperature range :
   -40 to +85 (degree C)

■ Applications

1. Card type radios
2. Card type RKE modules
3. Card type PHS modules

Part Number	Center Frequency (fo) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Spurious Attenuation (dB)	Input/Output Impedance (ohm)
SFECD10M7FA00-R0	10.700 ±30kHz	280 ±50kHz	590 max.	3.0 ±2.0dB	30 min.	330

Attenuation Bandwidth : at 20dB loss point Area of Spurious Attenuation : [within 9MHz to 12MHz]
Insertion Loss: at minimum loss point
Center frequency (fo) defined by the center of 3dB bandwidth.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Standard Center Frequency Rank Code

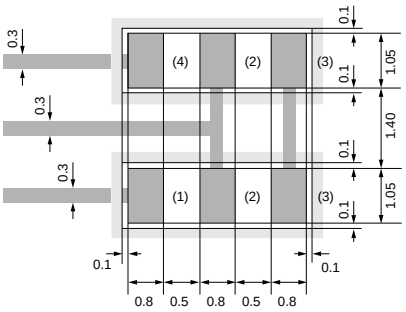
CODE	30kHz Step	25kHz Step
D	10.64MHz±30kHz	10.650MHz±25kHz
B	10.67MHz±30kHz	10.675MHz±25kHz
A	10.70MHz±30kHz	10.700MHz±25kHz
C	10.73MHz±30kHz	10.725MHz±25kHz
E	10.76MHz±30kHz	10.750MHz±25kHz
Z	Combination A,B,C,D,E	
M	Combination A,B,C	

Continued on the following page.

Continued from the preceding page.

2

■ Standard Land Pattern Dimensions

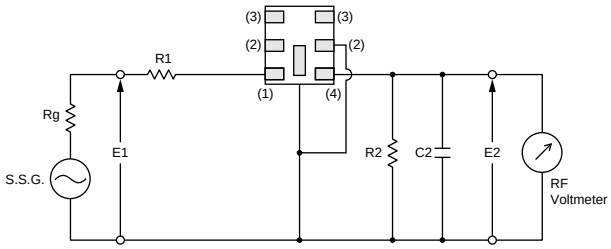


(1) : Input (2) : Ground (3) : Float (Signal Line) (4) : Output

It shows solder resist land pattern.

(in mm)

■ Test Circuit

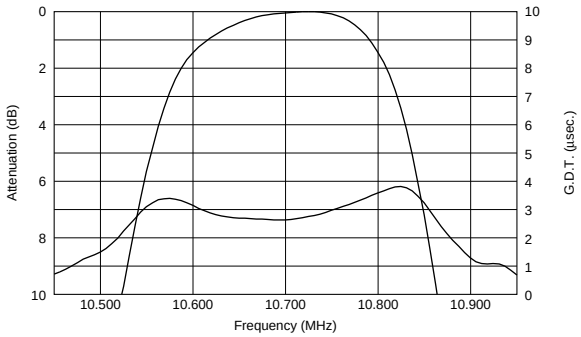


(1) : Input
(2) : Ground
(3) : Float
(4) : Output

R1+Rg=R2=330Ω±5%, Rg=50Ω
C2=10pF (Including stray capacitance and Input capacitance of RF Voltmeter)
E1 : S.S.G. Output Voltage

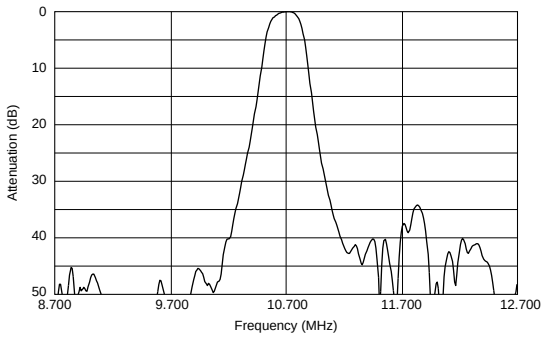
■ Frequency Characteristics

SFECD10M7FA00-R0



■ Frequency Characteristics (Spurious)

SFECD10M7FA00-R0

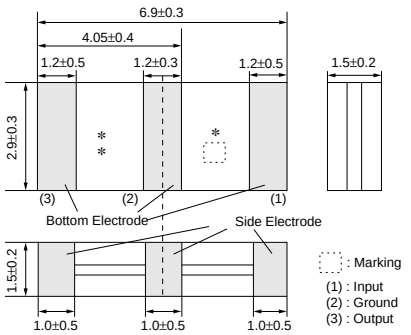


CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

muRata

CERAFIL® 10.7MHz Chip Type SFECV Series

SFECV10M7 series for FM-receivers are monolithic type ceramic filters which utilize the thickness expander mode of the piezoelectric ceramic. SFECV series and PFWCC(kHz filter for AM receiver) enable customers to make AM/FM set so thin, and it can be of help to the total chip circuit.



∗ : EIAJ Monthly Code
∗∗ : Center Frequency Rank Code

(in mm)

■ Features

1. Piezoelectric element is connected in the sandwich shape by heat resistant substrate, thus it has excellent mechanical strength, and it is suitable for automatic mounting.
2. Various bandwidths are available. Select a suitable type in accordance with the desired selectivity.

■ Applications

1. Small, thin radios
2. Automotive radios
3. Headphone steros

Part Number	Center Frequency (fo) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Spurious Attenuation (dB)	Input/Output Impedance (ohm)
SFECV10M7KA00-R0	10.700 ±30kHz	110 ±30kHz	320 max.	6.0 ±2.0dB	35 min.	330
SFECV10M7JA00-R0	10.700 ±30kHz	150 ±40kHz	380 max.	5.5 ±2.0dB	35 min.	330
SFECV10M7HA00-R0	10.700 ±30kHz	180 ±40kHz	470 max.	4.0 ±2.0dB	35 min.	330
SFECV10M7GA00-R0	10.700 ±30kHz	230 ±50kHz	510 max.	3.5 ±2.0dB	35 min.	330
SFECV10M7FA00-R0	10.700 ±30kHz	280 ±50kHz	590 max.	3.0 ±2.0dB	35 min.	330

Attenuation Bandwidth : at 20dB loss point Area of Spurious Attenuation : [within 9MHz to 12MHz]
Insertion Loss: at minimum loss point
Center frequency (fo) defined by the center of 3dB bandwidth.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Standard Center Frequency Rank Code

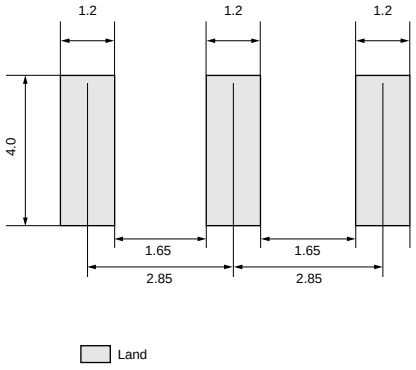
CODE	30kHz Step	25kHz Step
D	10.64MHz±30kHz	10.650MHz±25kHz
B	10.67MHz±30kHz	10.675MHz±25kHz
A	10.70MHz±30kHz	10.700MHz±25kHz
C	10.73MHz±30kHz	10.725MHz±25kHz
E	10.76MHz±30kHz	10.750MHz±25kHz
Z	Combination A,B,C,D,E	
M	Combination A,B,C	

Continued on the following page.

Continued from the preceding page.

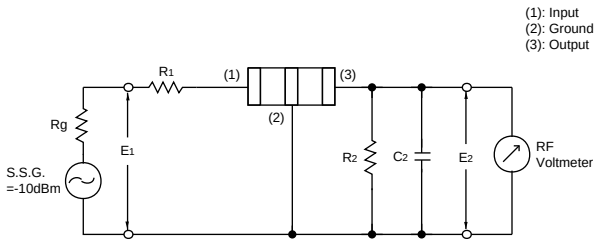
3

■ Standard Land Pattern Dimensions



(in mm)

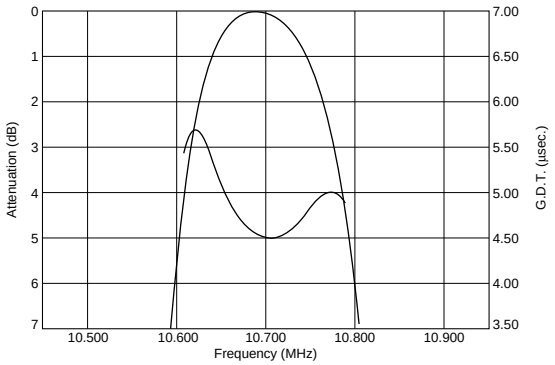
■ Test Circuit



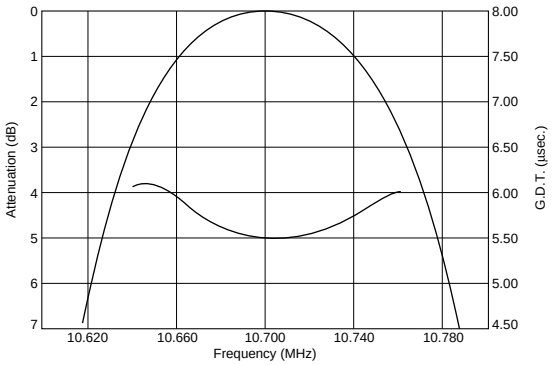
Rg = 50Ω R1 = 280Ω ±5% R2 = 330Ω ±5%
C2 = 10 ± 2 pF (Including stray capacitance and Input capacitance of RF Volt Meter)
E1 : S.S.G. S.S.G. Output Voltage

■ Frequency Characteristics

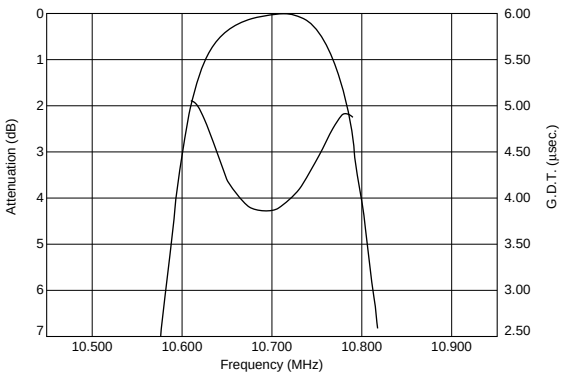
SFECV10M7KA00-R0



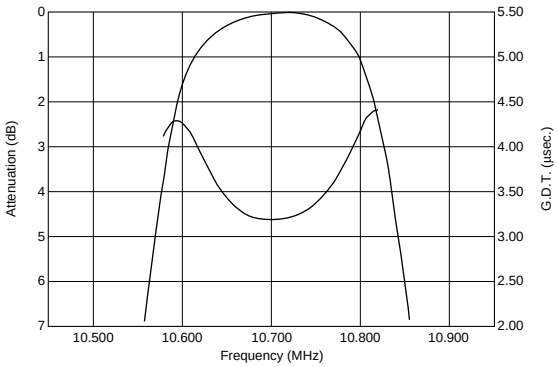
SFECV10M7JA00-R0



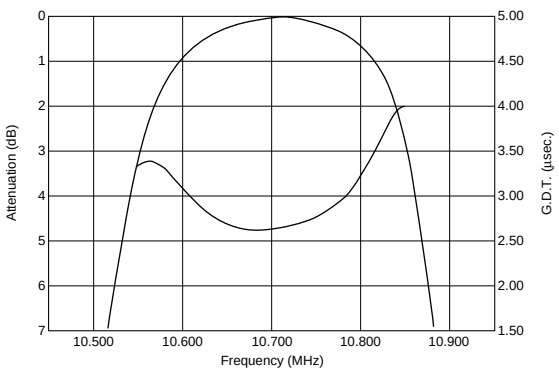
SFECV10M7HA00-R0



SFECV10M7GA00-R0

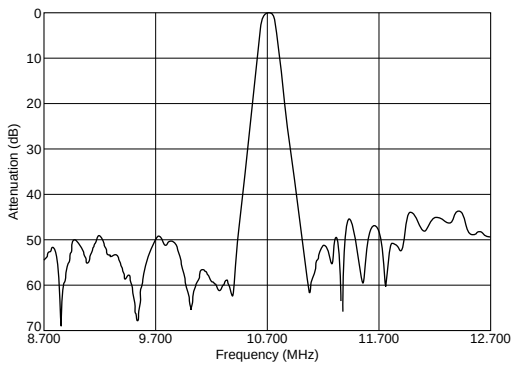


SFECV10M7FA00-R0

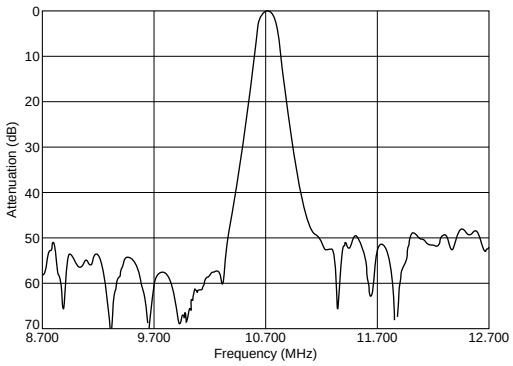


■ Frequency Characteristics (Spurious)

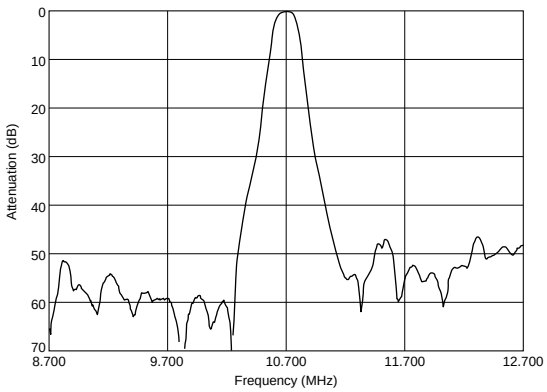
SFECV10M7KA00-R0



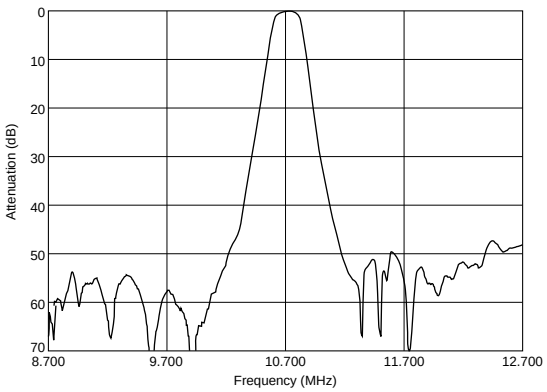
SFECV10M7JA00-R0



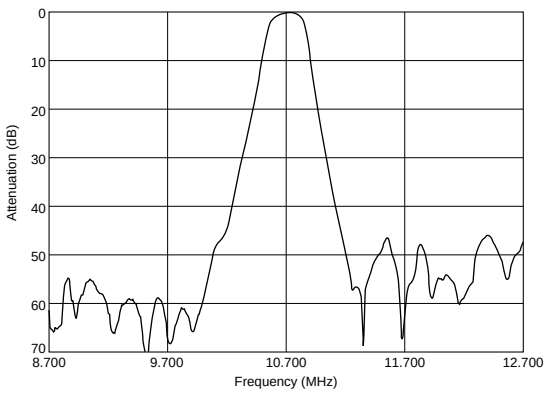
SFECV10M7HA00-R0



SFECV10M7GA00-R0



SFECV10M7FA00-R0



CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

CERAFIL® 10.7MHz Standard Lead Type

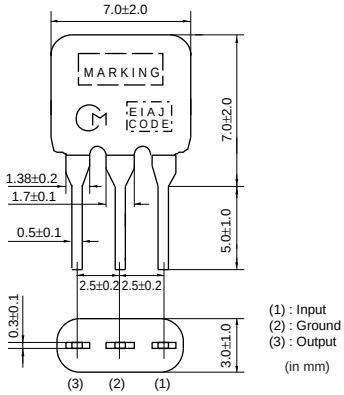
4

SFELA10M7 series for FM-receivers are monolithic type ceramic filters which use the thickness expander mode of the piezoelectric ceramic.

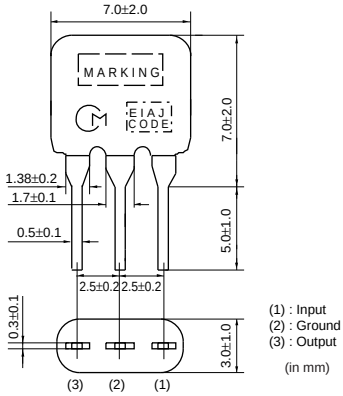
■ Features

1. These miniature filters have high mechanical strength.
2. Low loss, favorable waveform symmetry, and high selectivity
3. Various band widths are available for applications in wide to narrow bands.
4. Small dispersion and stable characteristics
5. Change in center frequency is typically within +-30ppm/(degree C) at -20 to +80 (degree C).
6. High reliability

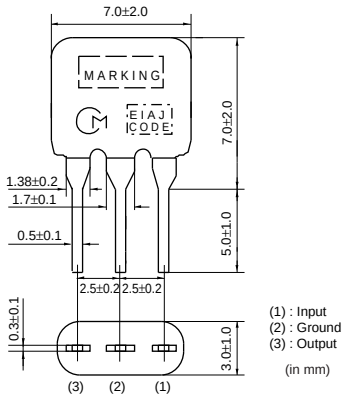
SFELA10M7HA00-B0



SFELA10M7GA00-B0



SFELA10M7FA00-B0



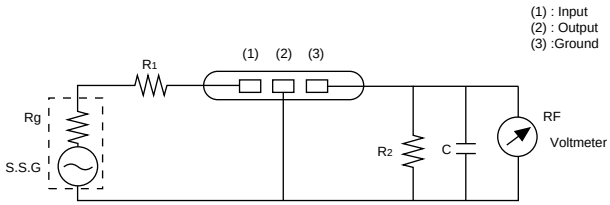
Part Number	Center Frequency (fo) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Spurious Attenuation (dB)	Input/Output Impedance (ohm)
SFELA10M7HA00-B0	10.700 ±30kHz	180 ±40kHz	520 max.	7.0 max.	40 min.	330
SFELA10M7GA00-B0	10.700 ±30kHz	230 ±50kHz	570 max.	4.0 ±2.0dB	40 min.	330
SFELA10M7FA00-B0	10.700 ±30kHz	280 ±50kHz	650 max.	4.0 ±2.0dB	30 min.	330

Attenuation Bandwidth : at 20dB loss point Area of Spurious Attenuation : [within 9MHz to 12MHz]
Insertion Loss: at minimum loss point
Center frequency (fo) defined by the center of 3dB bandwidth.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Standard Center Frequency Rank Code

CODE	30kHz Step	25kHz Step	Color Code
D	10.64MHz±30kHz	10.650MHz±25kHz	Black
B	10.67MHz±30kHz	10.675MHz±25kHz	Blue
A	10.70MHz±30kHz	10.700MHz±25kHz	Red
C	10.73MHz±30kHz	10.725MHz±25kHz	Orange
E	10.76MHz±30kHz	10.750MHz±25kHz	White
Z	Combination A,B,C,D,E		
M	Combination A,B,C		

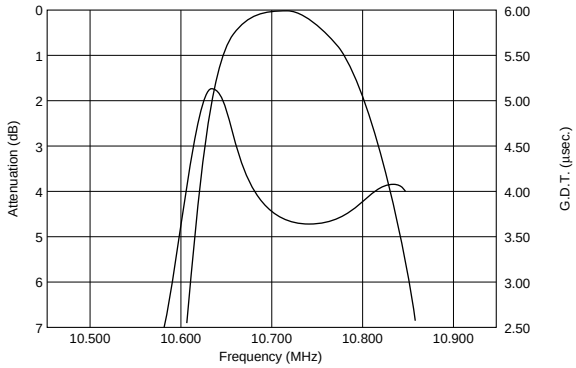
■ Test Circuit



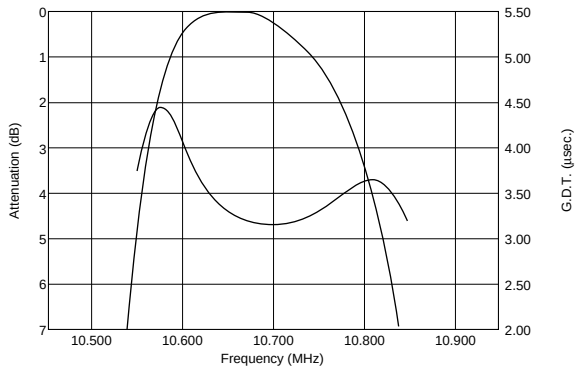
Rg + R1 = R2 = Input and Output Impedance
C = 10pF (Including stray capacitance and input capacitance of RF voltmeter.)

■ Frequency Characteristics

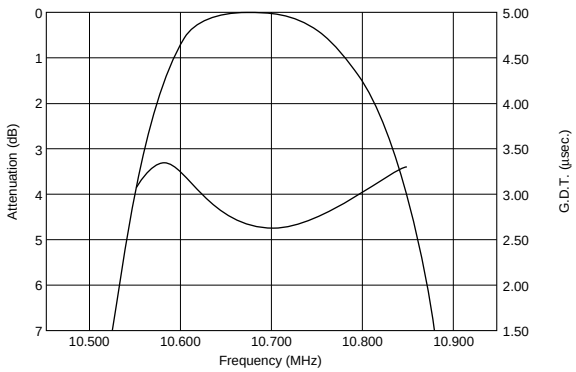
SFELA10M7HA00-B0



SFELA10M7GA00-B0

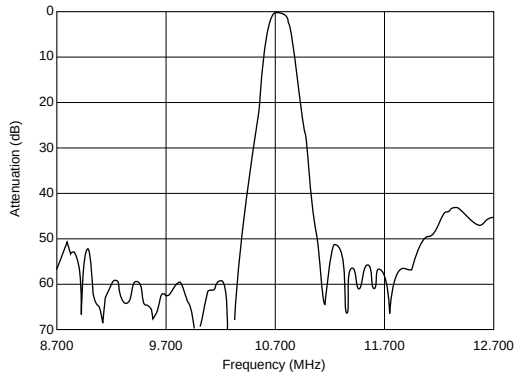


SFELA10M7FA00-B0

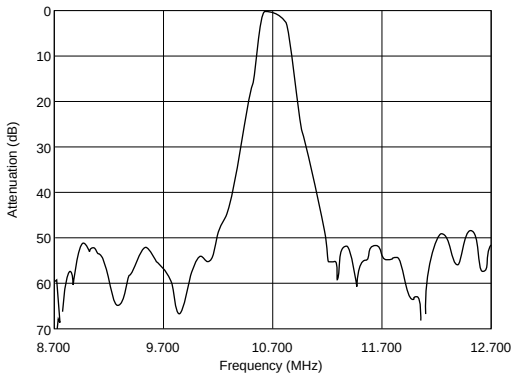


■ Frequency Characteristics (Spurious)

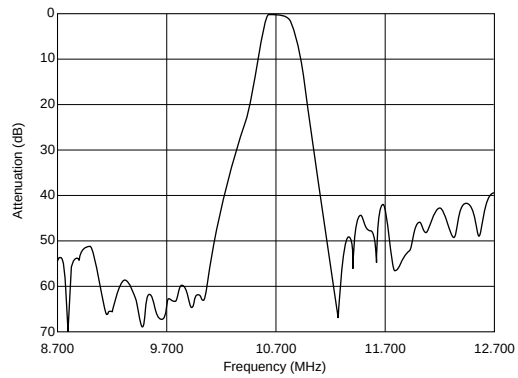
SFELA10M7HA00-B0



SFELA10M7GA00-B0



SFELA10M7FA00-B0



CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

muRata

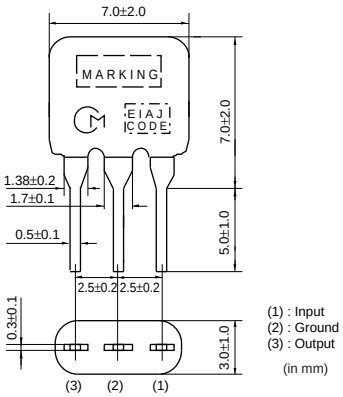
CERAFIL® 10.7MHz Low Loss Type

SFELA10M7 series for FM-receivers are monolithic type ceramic filters which use the thickness expander mode of the piezoelectric ceramic.

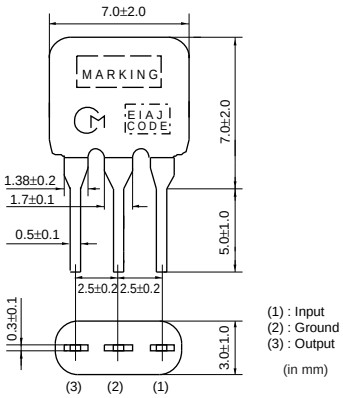
■ Features

1. Insertion loss is 1 to 1.5dB lower than conventional products. These types are useful for elevating the sensitivity of sets.
2. Small dispersion and stable characteristics
3. Excellent shape factor of frequency response
4. Good waveform symmetry

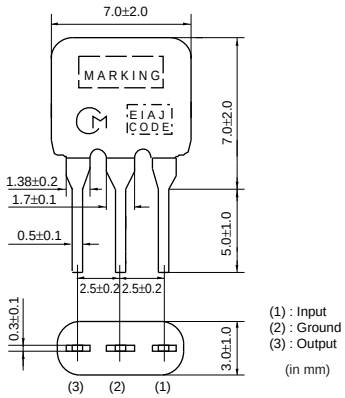
SFELA10M7JAA0-B0



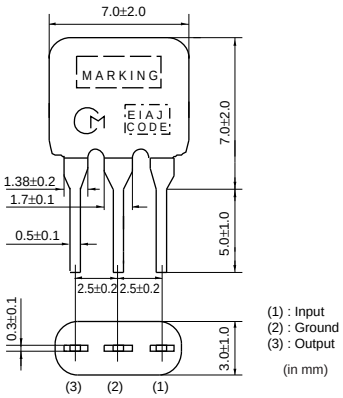
SFELA10M7HAA0-B0



SFELA10M7GAA0-B0



SFELA10M7FAA0-B0



Part Number	Center Frequency (fo) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Spurious Attenuation (dB)	Input/Output Impedance (ohm)
SFELA10M7JAA0-B0	10.700 ±30kHz	150 ±40kHz	360 max.	4.5 ±2.0dB	35 min.	330
SFELA10M7HAA0-B0	10.700 ±30kHz	180 ±40kHz	470 max.	3.5 ±1.5dB	35 min.	330
SFELA10M7GAA0-B0	10.700 ±30kHz	230 ±50kHz	520 max.	3.0 ±2.0dB	35 min.	330
SFELA10M7FAA0-B0	10.700 ±30kHz	280 ±50kHz	590 max.	2.5 ±2.0dB	30 min.	330

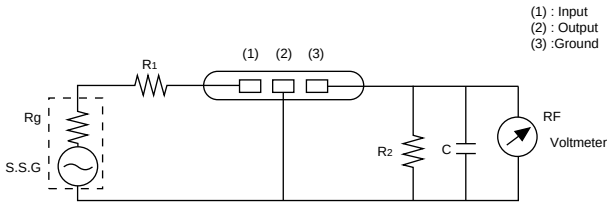
Attenuation Bandwidth : at 20dB loss point Area of Spurious Attenuation : [within 9MHz to 12MHz]
Insertion Loss: at minimum loss point
Center frequency (fo) defined by the center of 3dB bandwidth.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Standard Center Frequency Rank Code

CODE	30kHz Step	25kHz Step	Color Code
D	10.64MHz±30kHz	10.650MHz±25kHz	Black
B	10.67MHz±30kHz	10.675MHz±25kHz	Blue
A	10.70MHz±30kHz	10.700MHz±25kHz	Red
C	10.73MHz±30kHz	10.725MHz±25kHz	Orange
E	10.76MHz±30kHz	10.750MHz±25kHz	White
Z	Combination A,B,C,D,E		
M	Combination A,B,C		

5

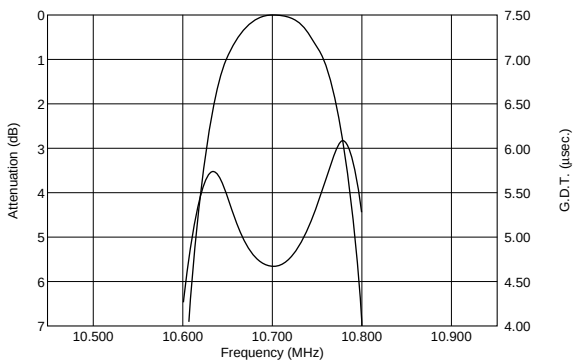
■ Test Circuit



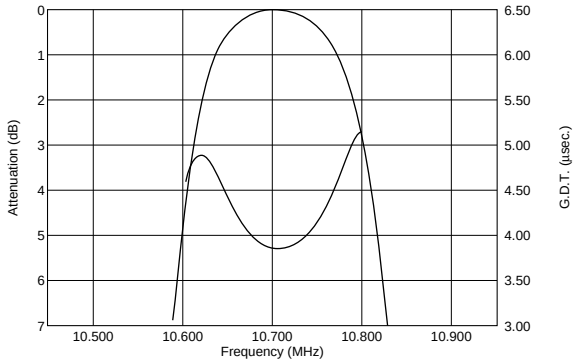
Rg + R1 = R2 = Input and Output Impedance
C = 10pF (Including stray capacitance and input capacitance of RF voltmeter.)

■ Frequency Characteristics

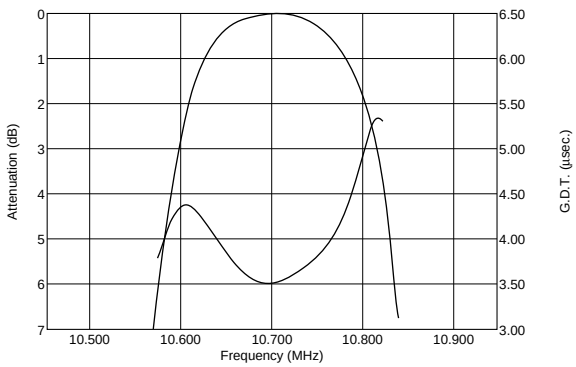
SFELA10M7JAA0-B0



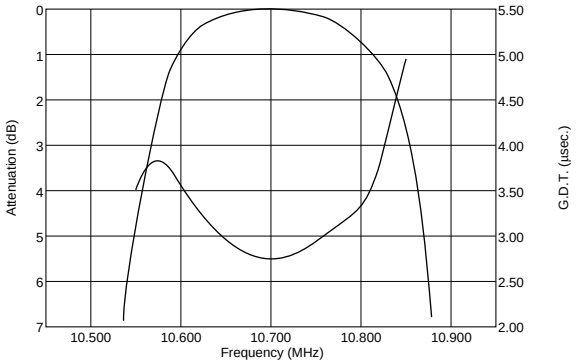
SFELA10M7HAA0-B0



SFELA10M7GAA0-B0

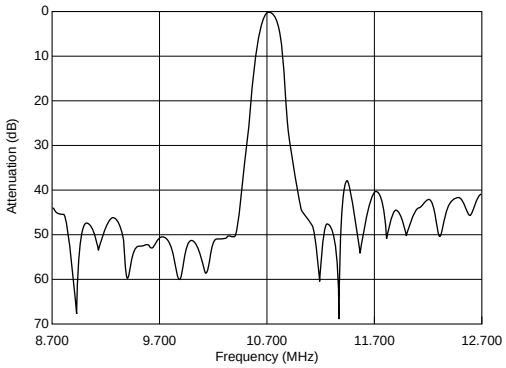


SFELA10M7FAA0-B0

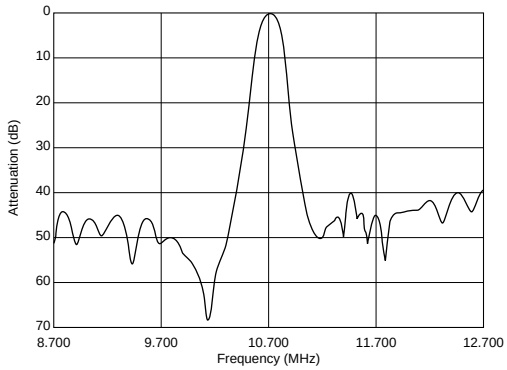


■ Frequency Characteristics (Spurious)

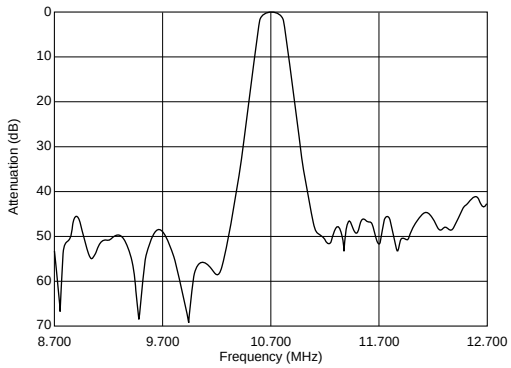
SFELA10M7JAA0-B0



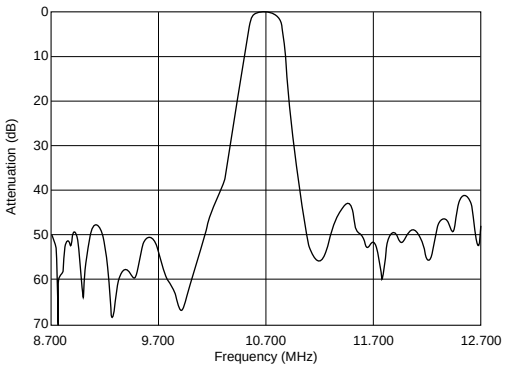
SFELA10M7HAA0-B0



SFELA10M7GAA0-B0



SFELA10M7FAA0-B0



CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

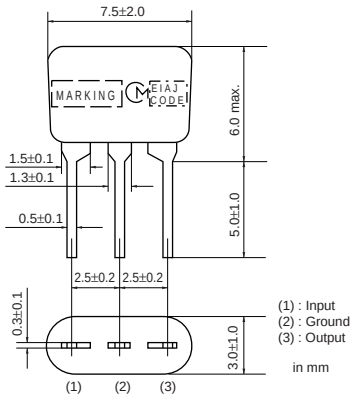
CERAFIL® 10.7MHz Low Profile Type

SFELB10M7 series for FM-receivers are monolithic type ceramic filters which use the thickness expancder mode of the piezoelectric ceramic.

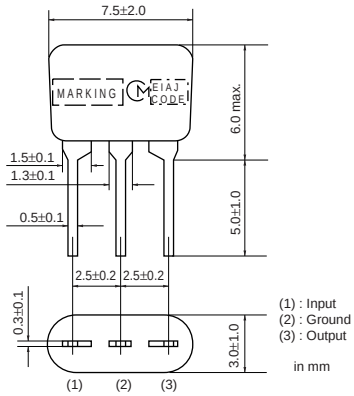
■ Features

1. Installed height is 6.0 mm, making it well suited for compact, thin sets.
2. Environmental reliability is the same as those of the ceramic filter SFELA10M7 series.

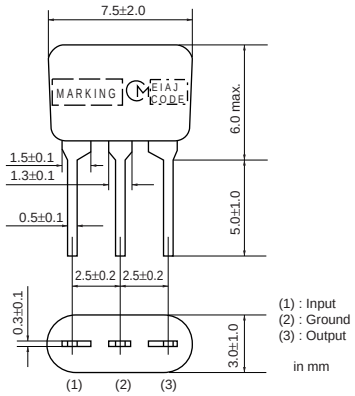
SFELB10M7KA00-B0



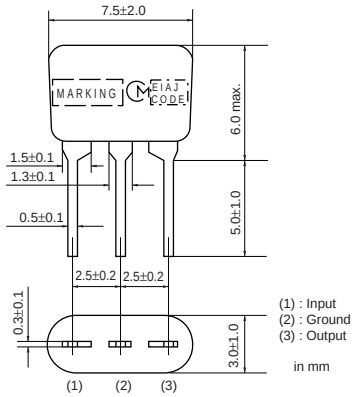
SFELB10M7JA00-B0



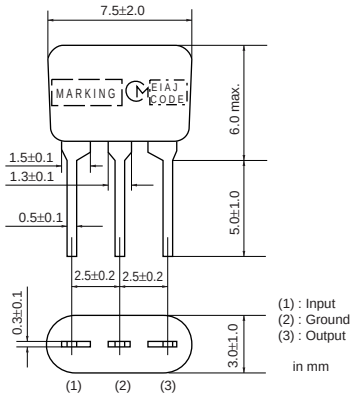
SFELB10M7HA00-B0



SFELB10M7GA00-B0



SFELB10M7FA00-B0



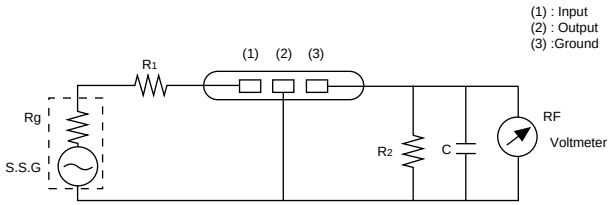
Part Number	Center Frequency (fo) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Spurious Attenuation (dB)	Input/Output Impedance (ohm)
SFELB10M7KA00-B0	10.700 ±30kHz	110 ±30kHz	350 max.	7.0 ±2.0dB	30 min.	330
SFELB10M7JA00-B0	10.700 ±30kHz	150 ±40kHz	360 max.	4.5 ±2.0dB	35 min.	330
SFELB10M7HA00-B0	10.700 ±30kHz	180 ±40kHz	470 max.	3.5 ±2.0dB	35 min.	330
SFELB10M7GA00-B0	10.700 ±30kHz	230 ±50kHz	570 max.	3.0 ±2.0dB	40 min.	330
SFELB10M7FA00-B0	10.700 ±30kHz	280 ±50kHz	650 max.	3.0 ±2.0dB	30 min.	330

Attenuation Bandwidth : at 20dB loss point Area of Spurious Attenuation : [within 9MHz to 12MHz]
Insertion Loss: at minimum loss point
Center frequency (fo) defined by the center of 3dB bandwidth.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Standard Center Frequency Rank Code

CODE	30kHz Step	25kHz Step	Color Code
D	10.64MHz±30kHz	10.650MHz±25kHz	Black
B	10.67MHz±30kHz	10.675MHz±25kHz	Blue
A	10.70MHz±30kHz	10.700MHz±25kHz	Red
C	10.73MHz±30kHz	10.725MHz±25kHz	Orange
E	10.76MHz±30kHz	10.750MHz±25kHz	White
Z	Combination A,B,C,D,E		
M	Combination A,B,C		

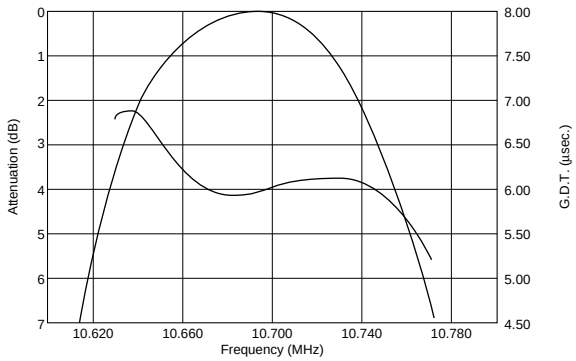
■ Test Circuit



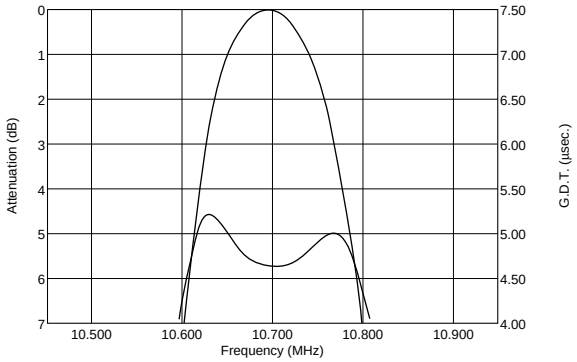
Rg + R1 = R2 = Input and Output Impedance
C = 10pF (Including stray capacitance and input capacitance of RF voltmeter.)

■ Frequency Characteristics

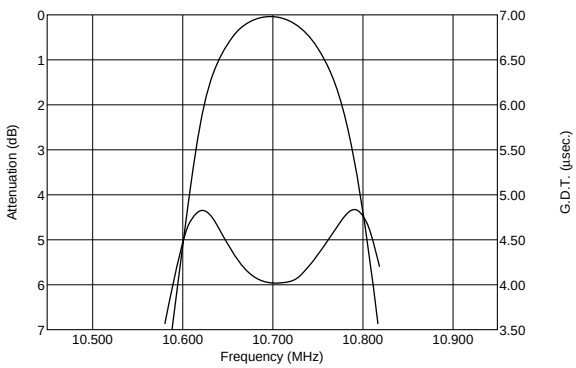
SFELB10M7KA00-B0



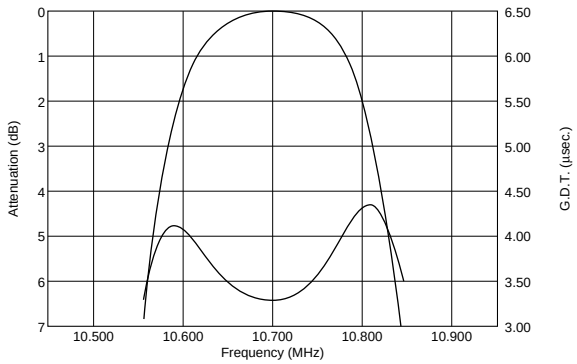
SFELB10M7JA00-B0



SFELB10M7HA00-B0



SFELB10M7GA00-B0

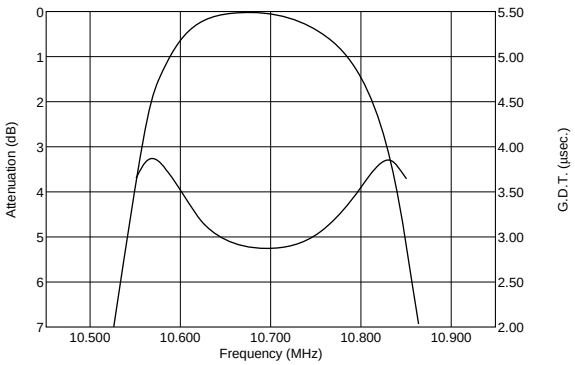


Continued on the following page.

Continued from the preceding page.

■ Frequency Characteristics

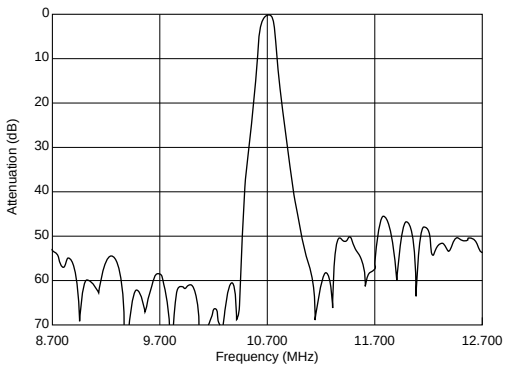
SFELB10M7FA00-B0



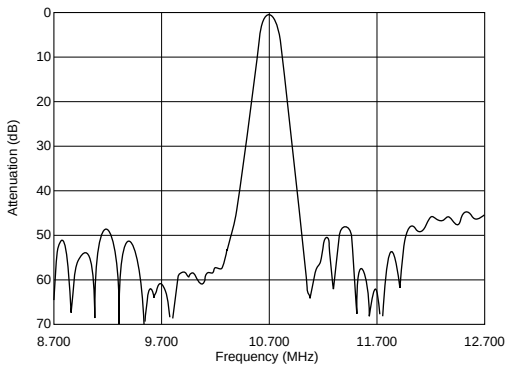
6

■ Frequency Characteristics (Spurious)

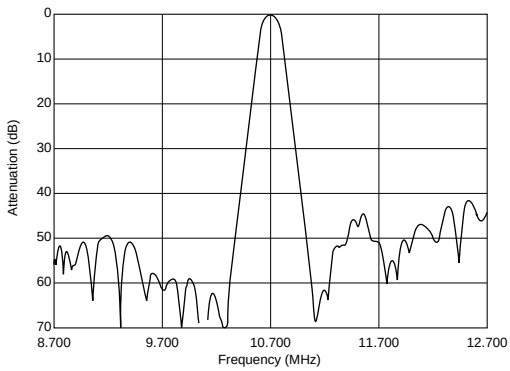
SFELB10M7KA00-B0



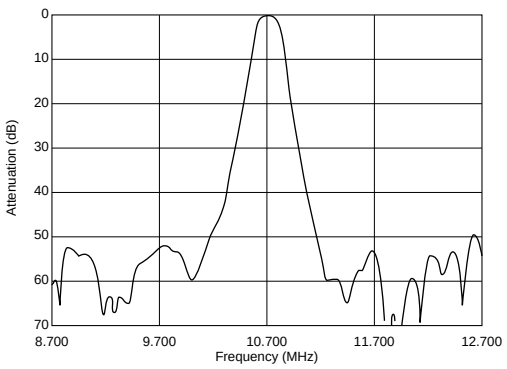
SFELB10M7JA00-B0



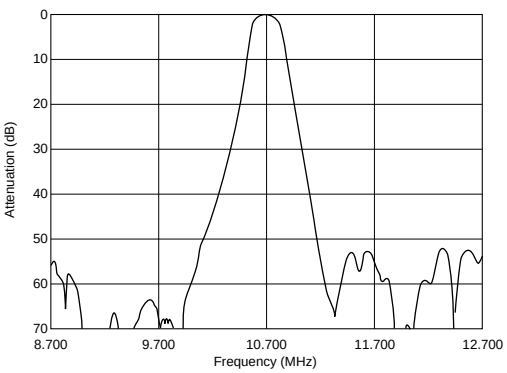
SFELB10M7HA00-B0



SFELB10M7GA00-B0



SFELB10M7FA00-B0



CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

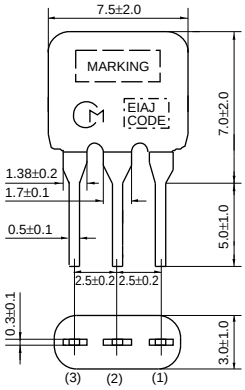
CERAFIL® 10.7MHz Low Spurious Response Type

SFELA10M7 series for FM-receivers are monolithic type ceramic filters which use the thickness expander mode of the piezoelectric ceramic.

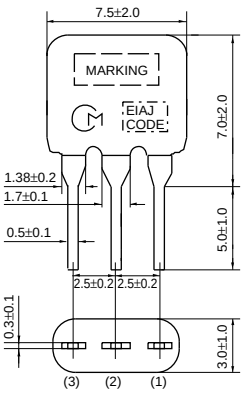
■ Features

These types have lower spurious response compared to the standard filters.

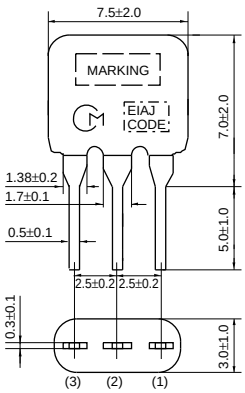
SFELA10M7KAB0-B0



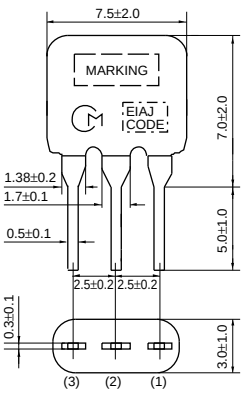
SFELA10M7JAB0-B0



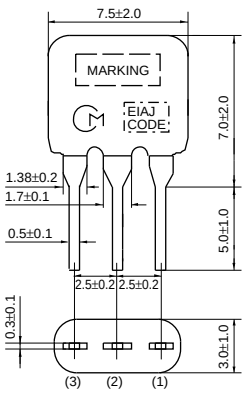
SFELA10M7HAB0-B0



SFELA10M7GAB0-B0



SFELA10M7FAB0-B0



Part Number	Center Frequency (fo) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Spurious Attenuation (dB)	Input/Output Impedance (ohm)
SFELA10M7KAB0-B0	10.700 ±30kHz	110 ±30kHz	350 max.	7.0 ±2.0dB	45/30 min.	330
SFELA10M7JAB0-B0	10.700 ±30kHz	150 ±40kHz	380 max.	5.5 ±2.0dB	45 min.	330
SFELA10M7HAB0-B0	10.700 ±30kHz	180 ±40kHz	520 max.	5.0 ±2.0dB	45 min.	330
SFELA10M7GAB0-B0	10.700 ±30kHz	230 ±50kHz	570 max.	3.0 ±2.0dB	45 min.	330
SFELA10M7FAB0-B0	10.700 ±30kHz	280 ±50kHz	650 max.	3.0 ±2.0dB	45 min.	330

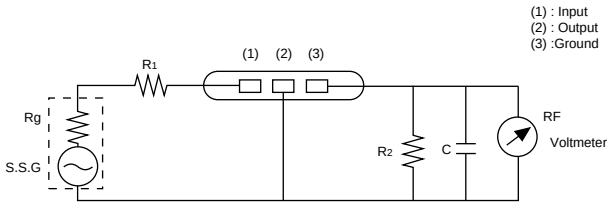
Attenuation Bandwidth : at 20dB loss point Area of Spurious Attenuation : [within 9MHz to fo / fo to 12MHz]
Insertion Loss: at minimum loss point
Center frequency (fo) defined by the center of 3dB bandwidth.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Standard Center Frequency Rank Code

CODE	30kHz Step	25kHz Step	Color Code
D	10.64MHz±30kHz	10.650MHz±25kHz	Black
B	10.67MHz±30kHz	10.675MHz±25kHz	Blue
A	10.70MHz±30kHz	10.700MHz±25kHz	Red
C	10.73MHz±30kHz	10.725MHz±25kHz	Orange
E	10.76MHz±30kHz	10.750MHz±25kHz	White
Z	Combination A,B,C,D,E		
M	Combination A,B,C		

7

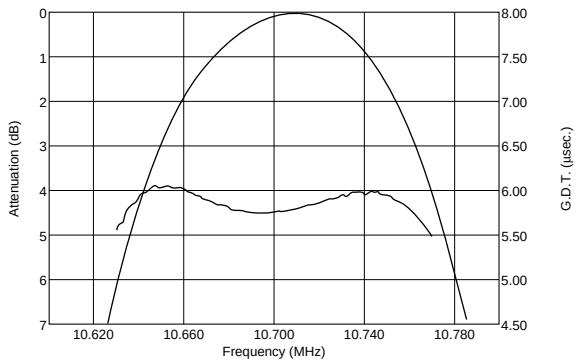
■ Test Circuit



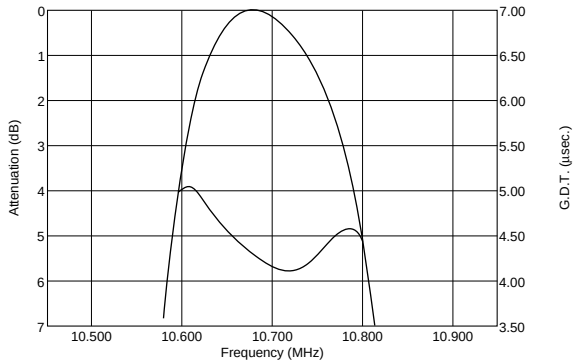
Rg + R1 = R2 = Input and Output Impedance
C = 10pF (Including stray capacitance and input capacitance of RF voltmeter.)

■ Frequency Characteristics

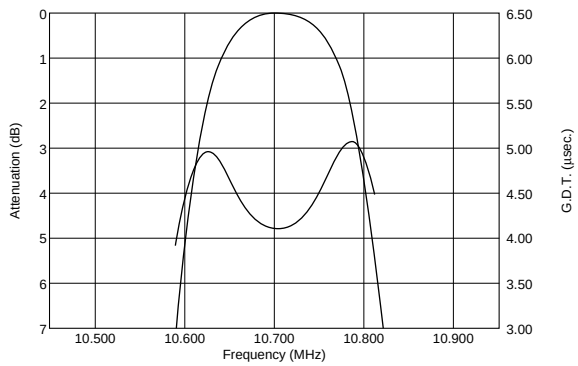
SFELA10M7KAB0-B0



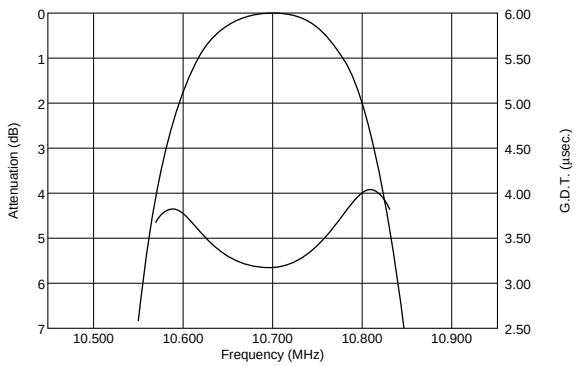
SFELA10M7JAB0-B0



SFELA10M7HAB0-B0



SFELA10M7GAB0-B0

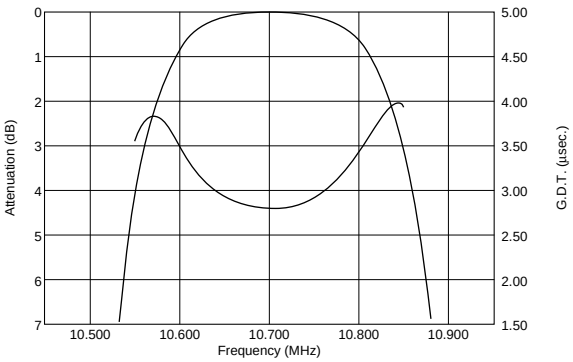


Continued on the following page.

Continued from the preceding page.

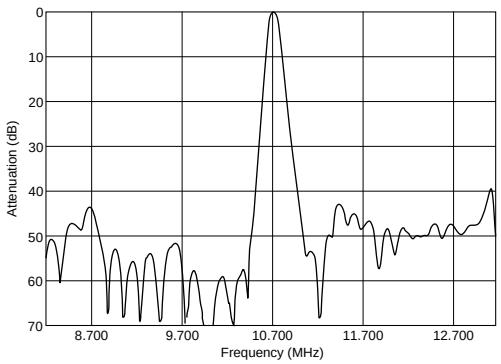
■ Frequency Characteristics

SFELA10M7FAB0-B0

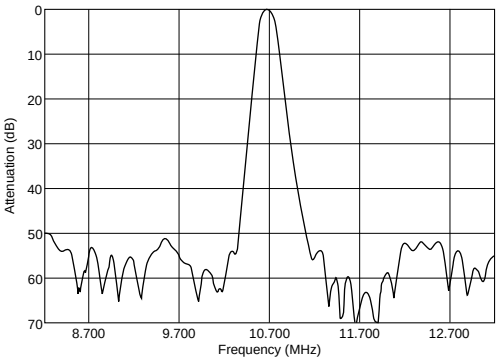


■ Frequency Characteristics (Spurious)

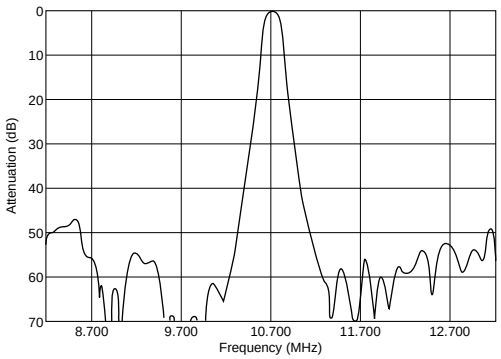
SFELA10M7KAB0-B0



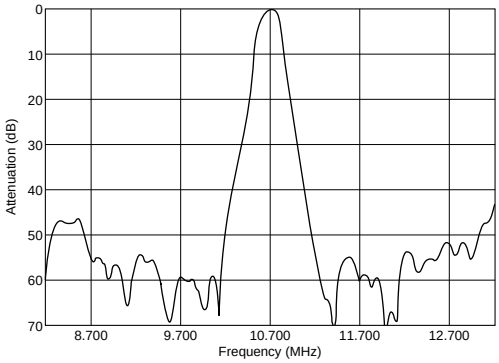
SFELA10M7JAB0-B0



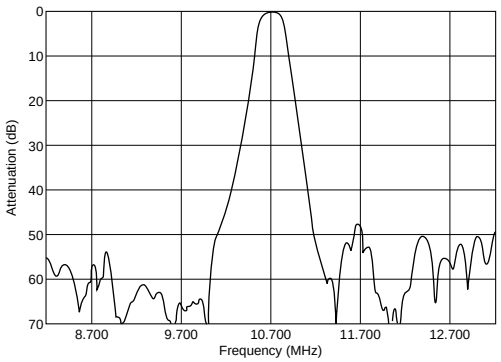
SFELA10M7HAB0-B0



SFELA10M7GAB0-B0



SFELA10M7FAB0-B0



CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

CERAFIL® 10.7MHz Wide Bandwidth Type

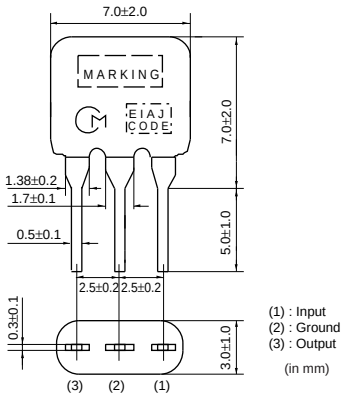
SFELA10M7 series for FM-receivers are monolithic type ceramic filters which use the thickness expander mode of the piezoelectric ceramic.

8

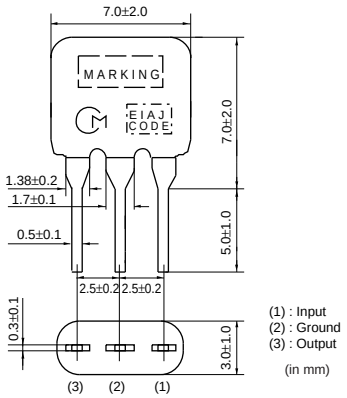
■ Features

Realizes widerband characteristics not obtained by conventional ceramic filters.

SFELA10M7EA00-B0



SFELA10M7DF00-B0



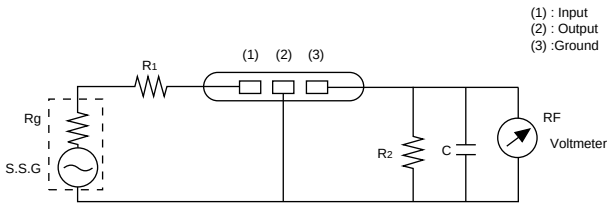
Part Number	Center Frequency (fo) (MHz)	Nominal Center Frequency (fn) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Spurious Attenuation (dB)	Input/Output Impedance (ohm)
SFELA10M7EA00-B0	10.700 ±30kHz	-	330 ±50kHz	680 max.	4.0 ±2.0dB	30 min.	330
SFELA10M7DF00-B0	-	10.700	fn±175 min.	950 max.	3.0 ±2.0dB	20 min.	470

Attenuation Bandwidth : at 20dB loss point Area of Spurious Attenuation : [within 8MHz to 12MHz]
Insertion Loss: at minimum loss point
Center frequency (fo) defined by the center of 3dB bandwidth.
(fn) means nominal center frequency.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Standard Center Frequency Rank Code

CODE	30kHz Step	25kHz Step	Color Code
D	10.64MHz±30kHz	10.650MHz±25kHz	Black
B	10.67MHz±30kHz	10.675MHz±25kHz	Blue
A	10.70MHz±30kHz	10.700MHz±25kHz	Red
C	10.73MHz±30kHz	10.725MHz±25kHz	Orange
E	10.76MHz±30kHz	10.750MHz±25kHz	White
Z	Combination A,B,C,D,E		
M	Combination A,B,C		

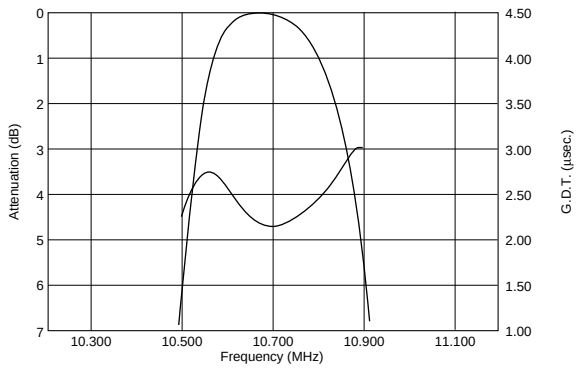
■ Test Circuit



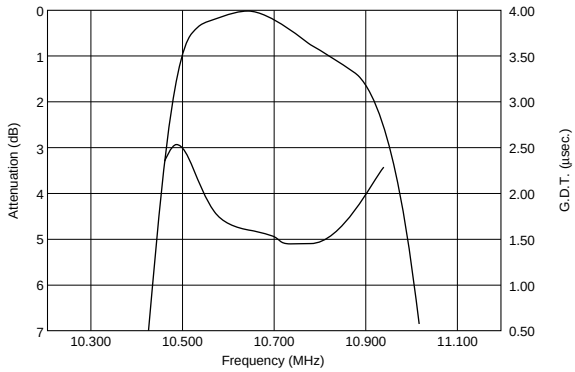
Rg + R_1 = R_2 = Input and Output Impedance
C = 10pF (Including stray capacitance and input capacitance of RF voltmeter.)

■ Frequency Characteristics

SFELA10M7EA00-B0

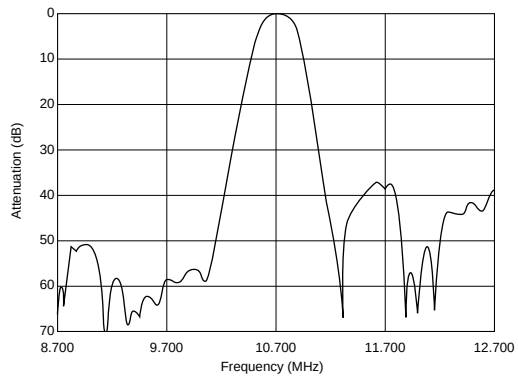


SFELA10M7DF00-B0

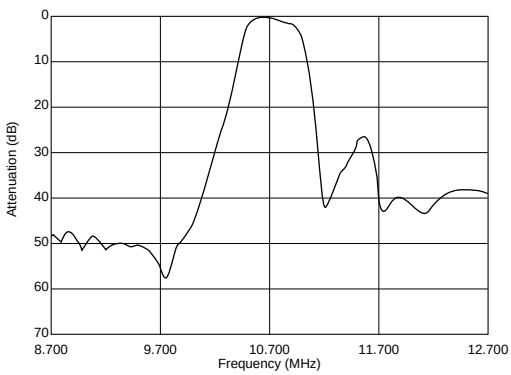


■ Frequency Characteristics (Spurious)

SFELA10M7EA00-B0



SFELA10M7DF00-B0



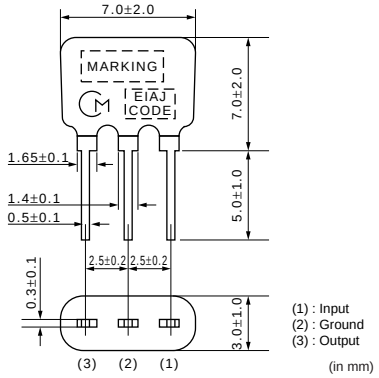
CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

CERAFIL® 10.7MHz Narrow Bandwidth Type

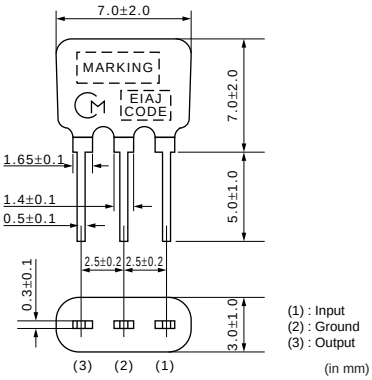
■ Features

SFELA10M7LFTA/KAH0, SFVLA/SFKLA series realizes narrower band characteristics not obtained by conventional ceramic filters. Besides, low spurious and temperature characteristics are stable. This series is suitable for European car-audio or AM up conversion use that needs narrow band characteristics.

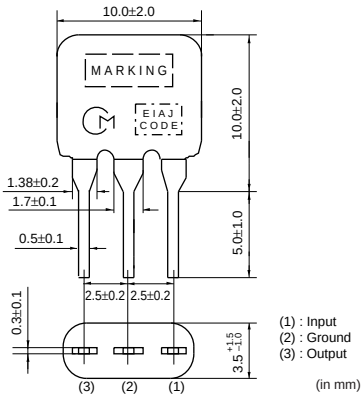
SFVLA10M7MF00-B0



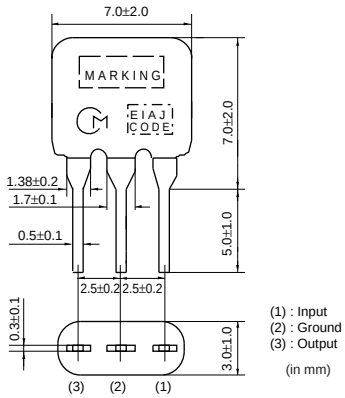
SFVLA10M7LF00-B0



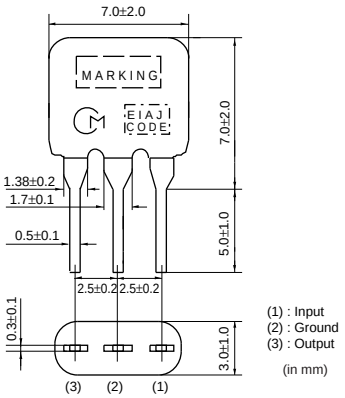
SFKLA10M7NL00-B0



SFELA10M7LFTA-B0



SFELA10M7KAH0-B0



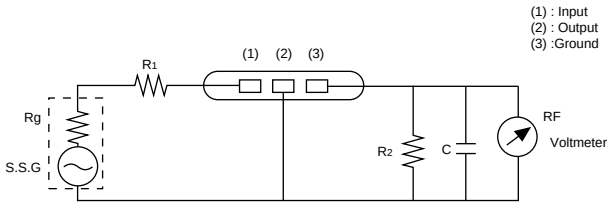
Part Number	Center Frequency (fo) (MHz)	Nominal Center Frequency (fn) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Spurious Attenuation (dB)	Input/Output Impedance (ohm)
SFVLA10M7MF00-B0	-	10.700	fn±13 min.	135 max.	5.0 ±2.0dB	35 min.	330
SFVLA10M7LF00-B0	-	10.700	fn±25 min.	-	5.5 ±2.5dB	30 min.	330
SFKLA10M7NL00-B0	10.700 ±15kHz	-	20 min.	95 max.	6.0 max.	24 min.	600
SFELA10M7LFTA-B0	-	10.700	fn±25 min.	280 max.	7.0 ±2.0dB	30 min.	330
SFELA10M7KAH0-B0	10.700 ±30kHz	-	110 ±30kHz	350 max.	7.0 ±2.0dB	30 min.	330

Attenuation Bandwidth : at 20dB loss point Area of Spurious Attenuation : [within 9MHz to 12MHz]
Insertion Loss: at minimum loss point
Center frequency (fo) defined by the center of 3dB bandwidth.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Standard Center Frequency Rank Code (SFELA10M7KAH0-B0)

CODE	30kHz Step	25kHz Step	Color Code
D	10.64MHz±30kHz	10.650MHz±25kHz	Black
B	10.67MHz±30kHz	10.675MHz±25kHz	Blue
A	10.70MHz±30kHz	10.700MHz±25kHz	Red
C	10.73MHz±30kHz	10.725MHz±25kHz	Orange
E	10.76MHz±30kHz	10.750MHz±25kHz	White
Z	Combination A,B,C,D,E		
M	Combination A,B,C		

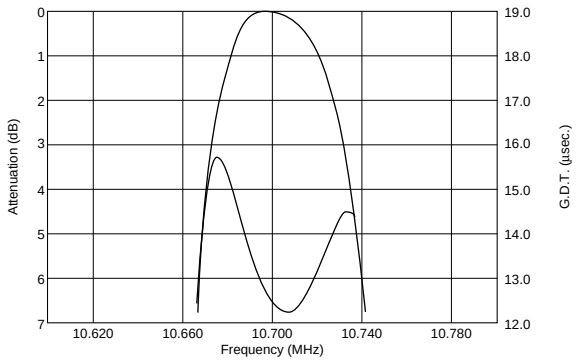
■ Test Circuit



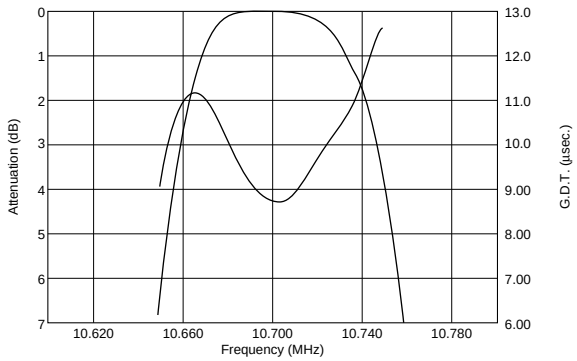
Rg + R1 = R2 = Input and Output Impedance
C = 10pF (Including stray capacitance and input capacitance of RF voltmeter.)

■ Frequency Characteristics

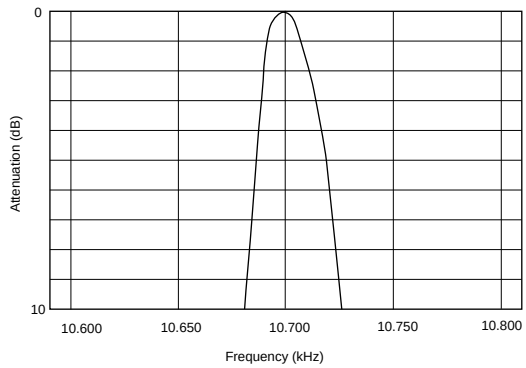
SFVLA10M7MF00-B0



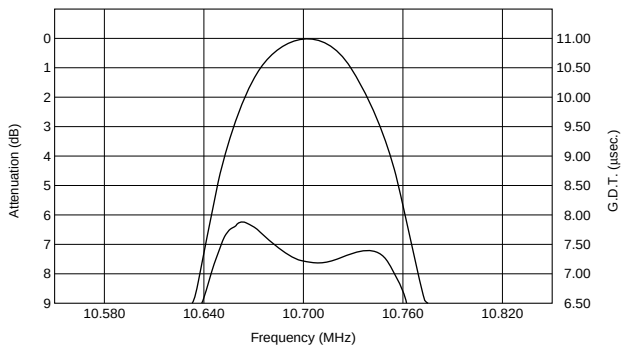
SFVLA10M7LF00-B0



SFKLA10M7NL00-B0



SFELA10M7LFTA01-B0

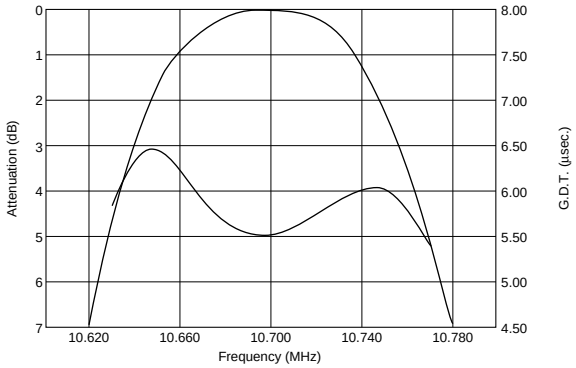


Continued on the following page.

Continued from the preceding page.

■ Frequency Characteristics

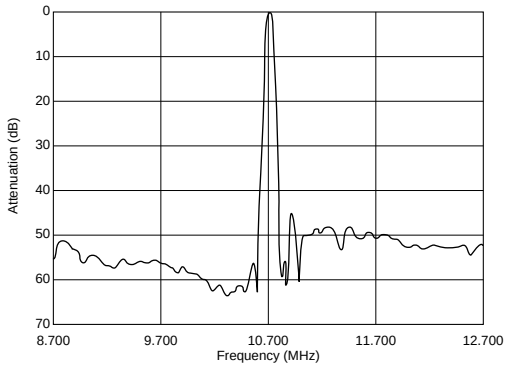
SFELA10M7KAH0-B0



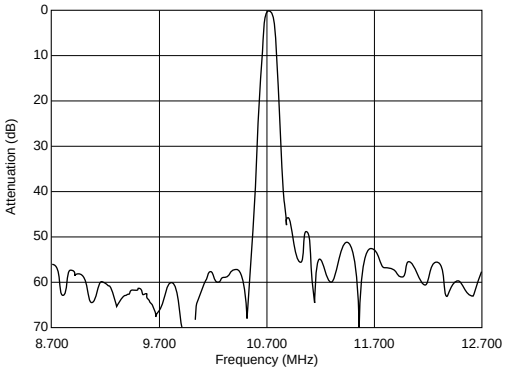
9

■ Frequency Characteristics (Spurious)

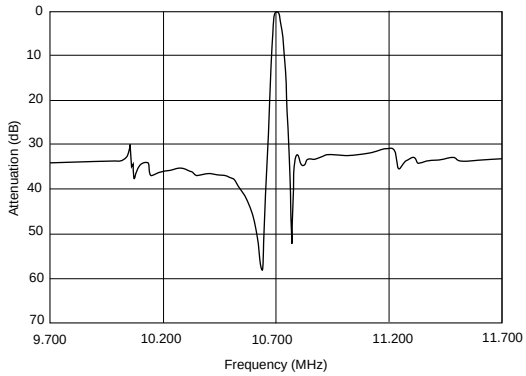
SFVLA10M7MF00-B0



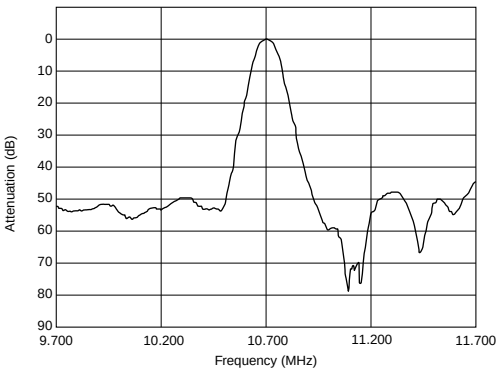
SFVLA10M7LF00-B0



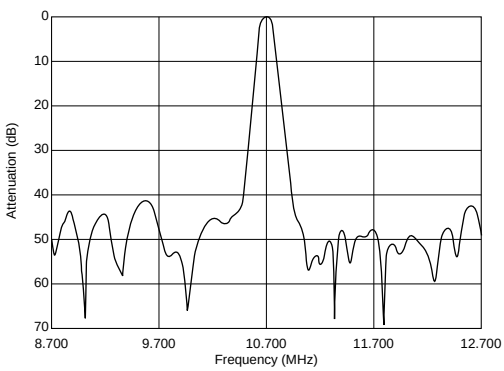
SFKLA10M7NL00-B0



SFELA10M7LFTA01-B0



SFELA10M7KAH0-B0



CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

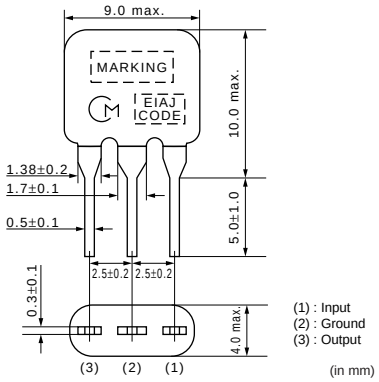
CERAFIL® 10.7MHz for FM-IF Tuners

SFELA10M7 series for FM-receivers are monolithic type ceramic filters which use the thickness expander mode of the piezoelectric ceramic.

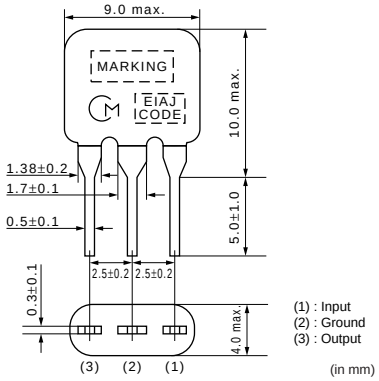
■ Features

1. Little dispersion of amplitude characteristics and phase characteristics (G. D. T. characteristics)
2. The SFELA10M7G_X series has G. D. T. characteristics and is useful for obtaining low distortion.
   SFELA10M7F_L series, in these ceramic filters, being in harmony with flatness of G. D. T., roundness of the amplitude and selectivity characteristics, therefore, these ceramic filters are suitable to high-grade stereo tuners. Even in mismatching conditions, they can keep little distortion because of low Qm of ceramic material.
   The SFELA10M7FA0G series is based on SFELA10M7FA00/GA00/HA00, and it obtains high selectivity with low loss.
   There is little dispersion of amplitude and G. D. T. characteristics, and low distortion rate can be obtained.
3. All products are inspected the flatness of G. D. T. characteristics.

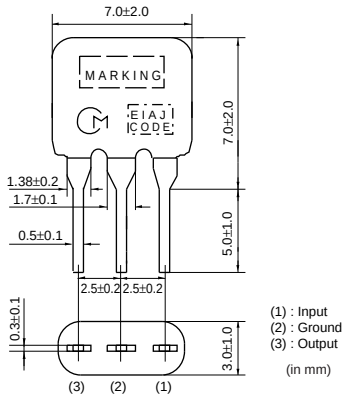
SFELA10M7JAXE-B0



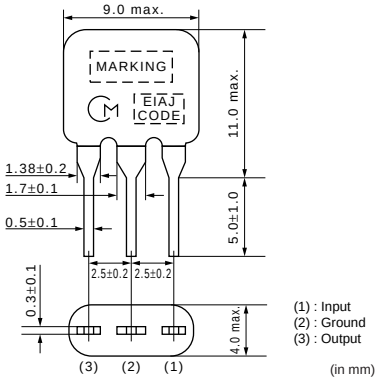
SFELA10M7HAXD-B0



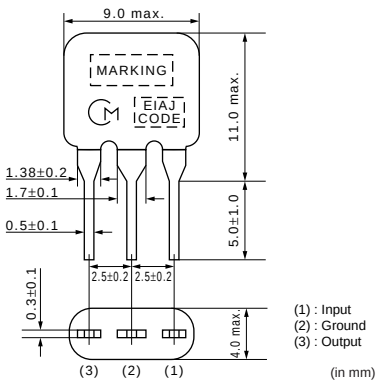
SFELA10M7HA0G-B0



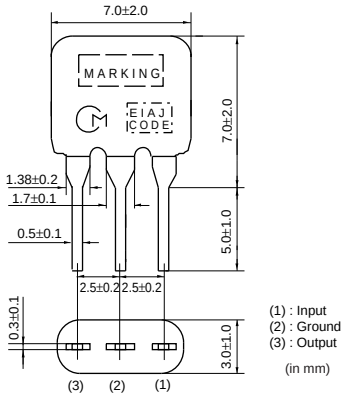
SFELA10M7GAXX-B0



SFELA10M7GAXA-B0



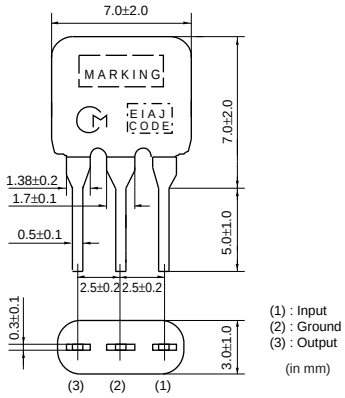
SFELA10M7GALP03-B0



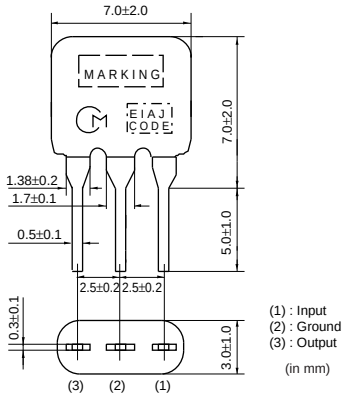
Continued on the following page.

Continued from the preceding page.

SFELA10M7GALM-B0

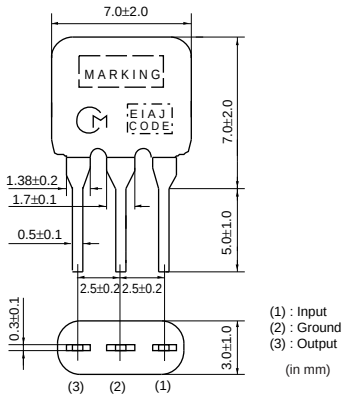


SFELA10M7GA0G-B0

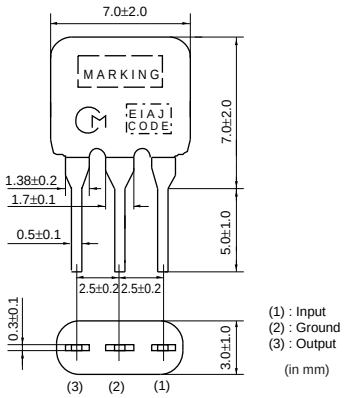


10

SFELA10M7FALL-B0



SFELA10M7FA0G-B0



Part Number	Center Frequency (fo) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Spurious Attenuation (dB)	GDT Bandwidth (kHz)	Input/Output Impedance (ohm)
SFELA10M7JAXE-B0	10.700 ±30kHz	150 ±30kHz	500 max.	14.0 max.	35 min.	fo±50 min.[within 0.15µsec.]	330
SFELA10M7HAXD-B0	10.700 ±30kHz	180 ±30kHz	530 max.	14.0 max.	33 min.	fo±60 min.[within 0.15µsec.]	330
SFELA10M7HA0G-B0	10.700 ±30kHz	180 ±40kHz	520 max.	7.0 max.	40 min.	fo±45 min.[within 0.5µsec.]	330
SFELA10M7GAXX-B0	10.700 ±30kHz	250 ±40kHz	670 max.	12.0 max.	25 min.	fo±110 min.[within 0.2µsec.]	330
SFELA10M7GAXA-B0	10.700 ±30kHz	220 ±40kHz	610 max.	12.5 max.	30 min.	fo±80 min.[within 0.15µsec.]	330
SFELA10M7GALP03-B0	10.700 ±30kHz	250 ±50kHz	650 max.	10.0 max.	30 min.	fo±65 min.[within 0.25µsec.]	330
SFELA10M7GALM-B0	10.700 ±30kHz	230 ±50kHz	600 max.	9.0 ±2.0dB	30 min.	fo±60 min.[within 0.25µsec.]	330
SFELA10M7GA0G-B0	10.700 ±30kHz	230 ±50kHz	600 max.	7.0 max.	40 min.	fo±60 min.[within 0.5µsec.]	330
SFELA10M7FALL-B0	10.700 ±30kHz	280 ±50kHz	700 max.	7.0 ±2.0dB	25 min.	fo±70 min.[within 0.25µsec.]	330
SFELA10M7FA0G-B0	10.700 ±30kHz	280 ±50kHz	650 max.	4.0 ±2.0dB	30 min.	fo±85 min.[within 0.5µsec.]	330

Attenuation Bandwidth : at 20dB loss point Area of Spurious Attenuation : [within 9MHz to 12MHz]
Insertion Loss: at minimum loss point
Center frequency (fo) defined by the center of 3dB bandwidth.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

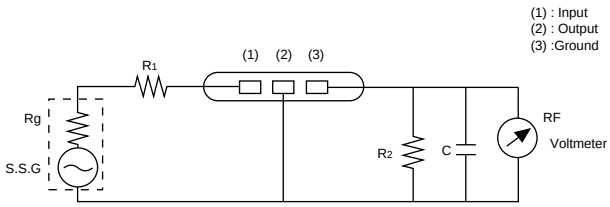
■ Standard Center Frequency Rank Code

CODE	30kHz Step	25kHz Step	Color Code
D	10.64MHz±30kHz	10.650MHz±25kHz	Black
B	10.67MHz±30kHz	10.675MHz±25kHz	Blue
A	10.70MHz±30kHz	10.700MHz±25kHz	Red
C	10.73MHz±30kHz	10.725MHz±25kHz	Orange
E	10.76MHz±30kHz	10.750MHz±25kHz	White
Z	Combination A,B,C,D,E		
M	Combination A,B,C		

Continued on the following page.

Continued from the preceding page.

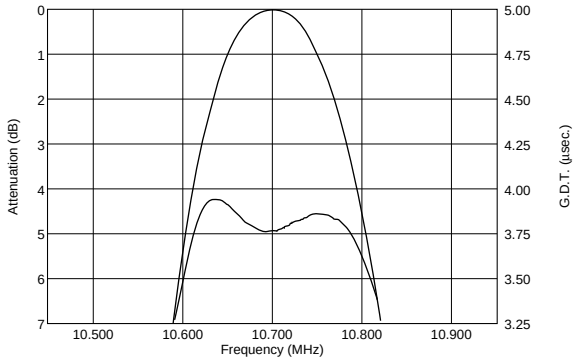
■ Test Circuit



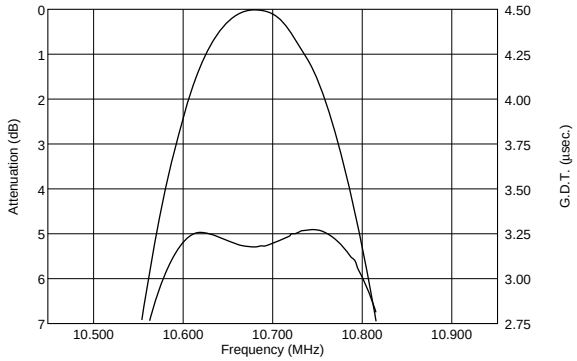
Rg + R_1 = R_2 = Input and Output Impedance
C = 10pF (Including stray capacitance and input capacitance of RF voltmeter.)

■ Frequency Characteristics

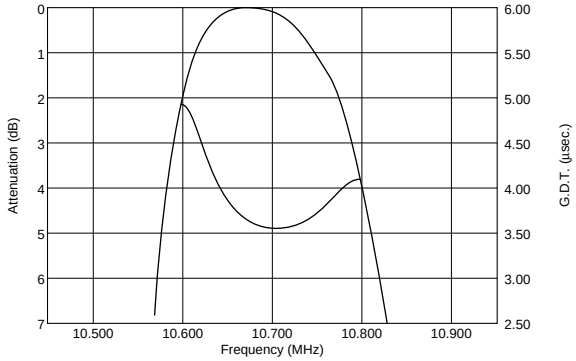
SFELA10M7JAXE-B0



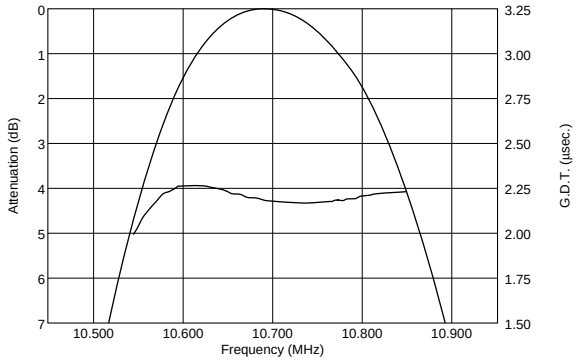
SFELA10M7HAXD-B0



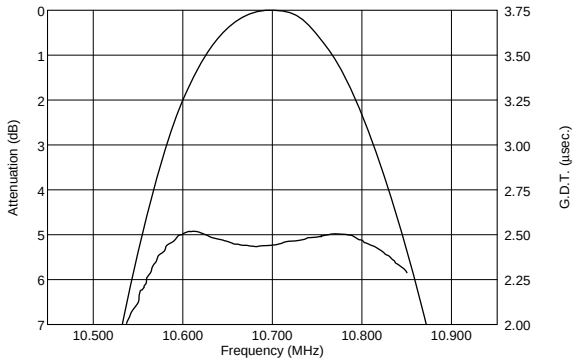
SFELA10M7HA0G-B0



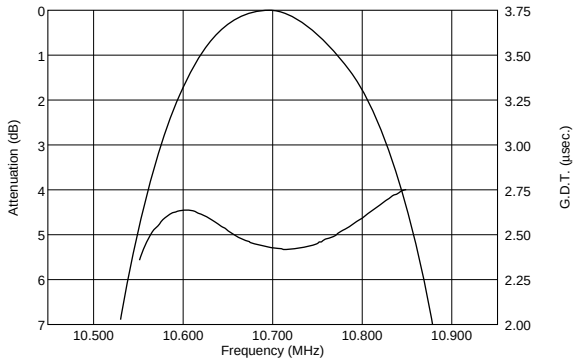
SFELA10M7GAXX-B0



SFELA10M7GAXA-B0



SFELA10M7GALP03-B0

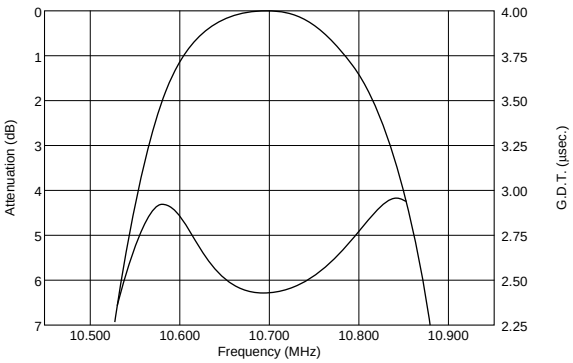


Continued on the following page.

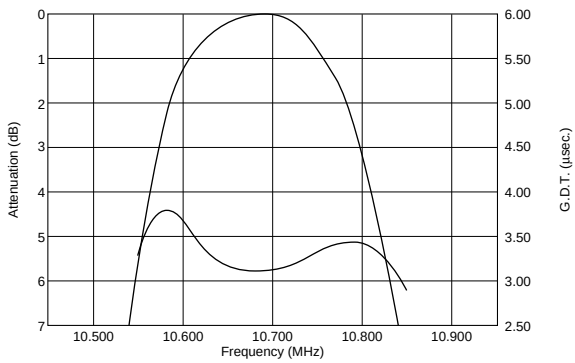
Continued from the preceding page.

■ Frequency Characteristics

SFELA10M7GALM-B0

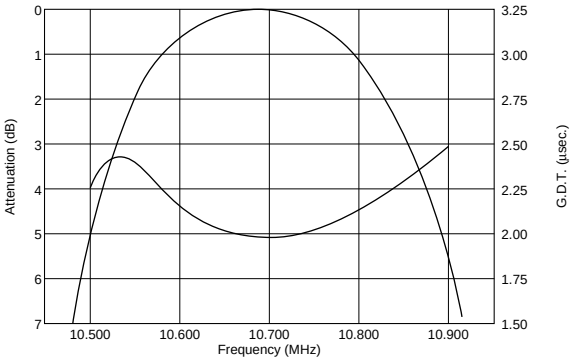


SFELA10M7GA0G-B0

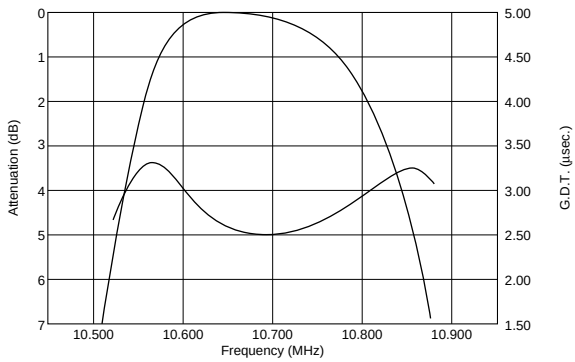


10

SFELA10M7FALL-B0

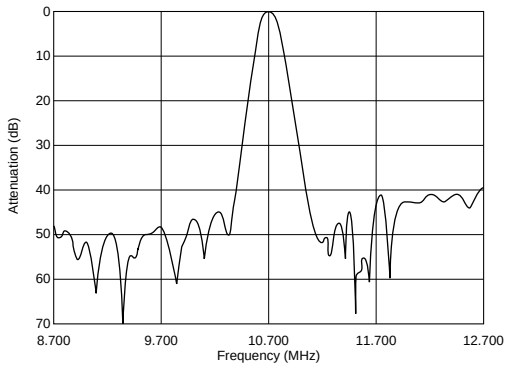


SFELA10M7FA0G-B0

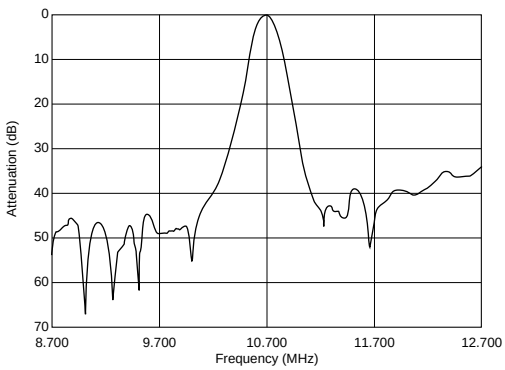


■ Frequency Characteristics (Spurious)

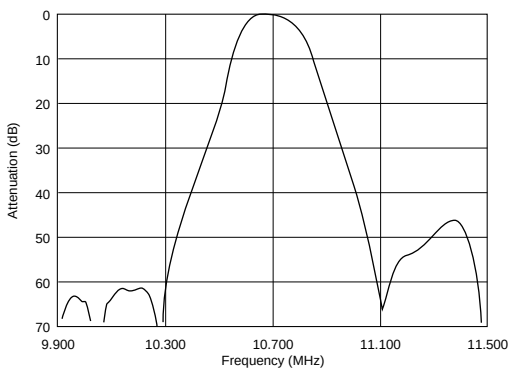
SFELA10M7JAXE-B0



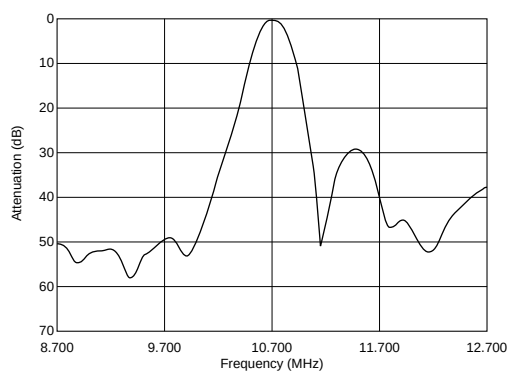
SFELA10M7HAXD-B0



SFELA10M7HA0G-B0



SFELA10M7GAXX-B0

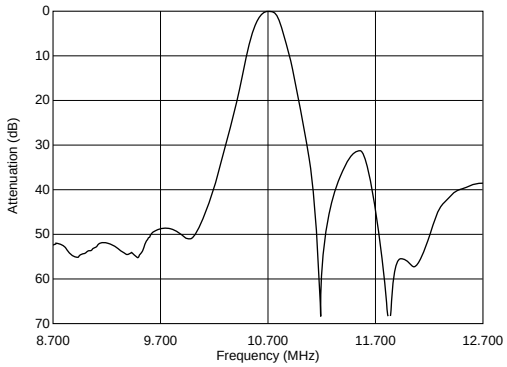


Continued on the following page.

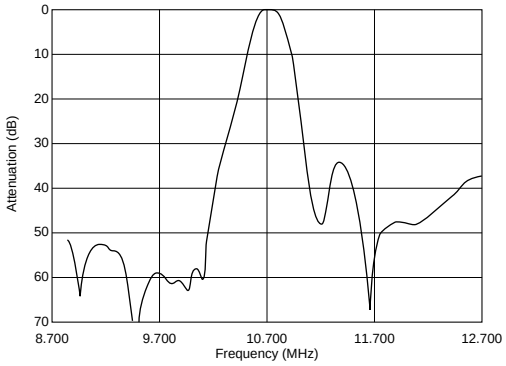
Continued from the preceding page.

■ Frequency Characteristics (Spurious)

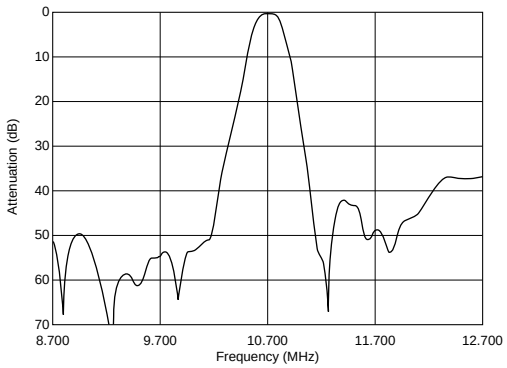
SFELA10M7GAXA-B0



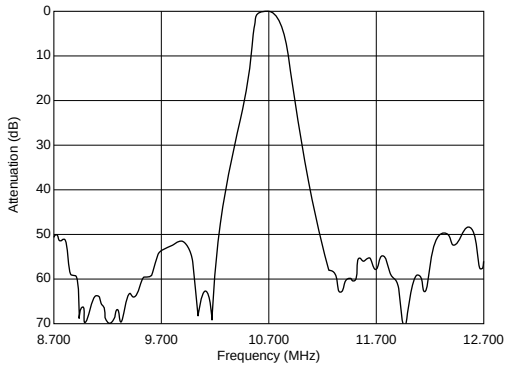
SFELA10M7GALP03-B0



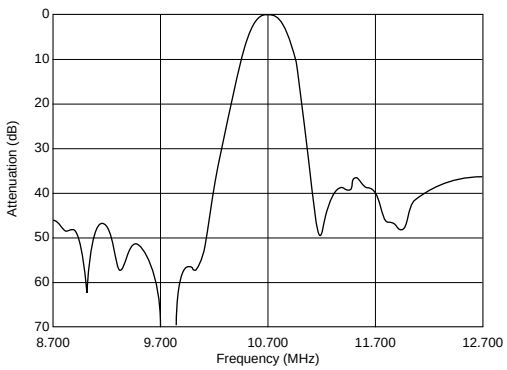
SFELA10M7GALM-B0



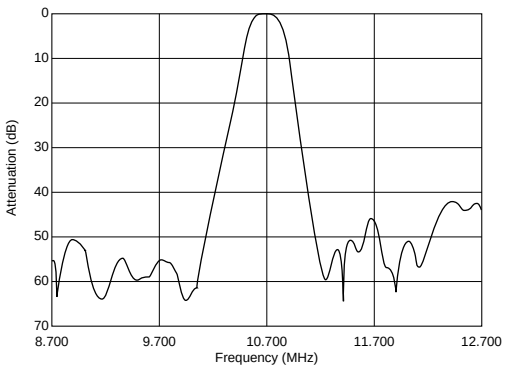
SFELA10M7GA0G-B0



SFELA10M7FALL-B0



SFELA10M7FA0G-B0



CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

CERAFIL® 10.7MHz High Selectivity Type SFTLA Series

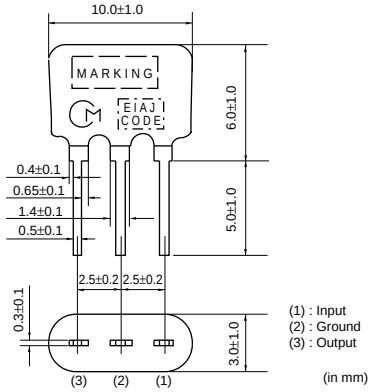
SFTLA10M7 series for FM-receivers are monolithic type ceramic filters which use the thickness expander mode of the piezoelectric ceramic.

■ Features

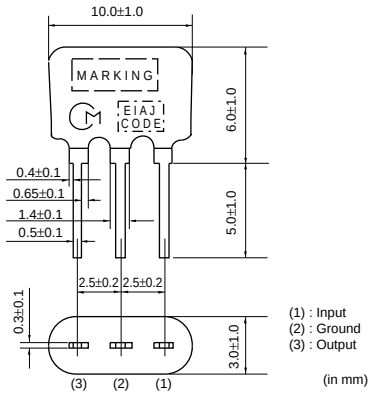
1. It has an excellent shape factor, and it is possible to obtain 1.5 times more excellent selectivity than SFELA10M7 series (by detuning +-300 or 400kHz).
2. Good performance of spurious suppression
3. Having the same terminal pitch as the SFELA10M7 series, it easily replaces that series.
4. By replacing two SFELA10M7 series filters with one SFTLA10M7 filter, more compact sets can be made.
5. Well-suited for 1-chip ICs

11

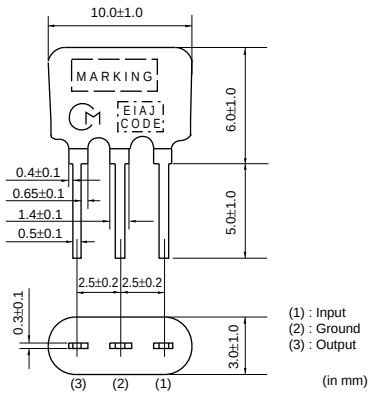
SFTLA10M7HA00-B0



SFTLA10M7GA00-B0



SFTLA10M7FA00-B0



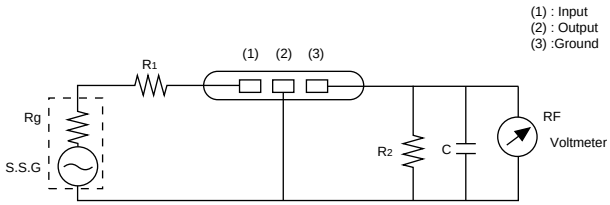
Part Number	Center Frequency (fo) (MHz)	3dB Bandwidth (kHz)	Attenuation (kHz)	Insertion Loss (dB)	Spurious Attenuation (dB)	Input/Output Impedance (ohm)
SFTLA10M7HA00-B0	10.700 ±30kHz	180 ±40kHz	510 max.	5.5 ±2.5dB	50 min.	330
SFTLA10M7GA00-B0	10.700 ±30kHz	230 ±40kHz	650 max.	6.0 ±2.0dB	50 min.	330
SFTLA10M7FA00-B0	10.700 ±30kHz	280 ±50kHz	700 max.	6.0 ±2.0dB	50 min.	330

Attenuation Bandwidth : at 40dB loss point Area of Spurious Attenuation : [within 9MHz to 12MHz]
Insertion Loss: at minimum loss point
Center frequency (fo) defined by the center of 3dB bandwidth.
(fn) means nominal center frequency.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Standard Center Frequency Rank Code

CODE	30kHz Step	25kHz Step	Color Code
D	10.64MHz±30kHz	10.650MHz±25kHz	Black
B	10.67MHz±30kHz	10.675MHz±25kHz	Blue
A	10.70MHz±30kHz	10.700MHz±25kHz	Red
C	10.73MHz±30kHz	10.725MHz±25kHz	Orange
E	10.76MHz±30kHz	10.750MHz±25kHz	White
Z	Combination A,B,C,D,E		
M	Combination A,B,C		

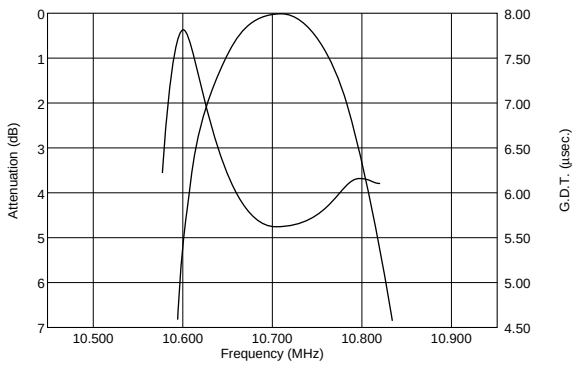
■ Test Circuit



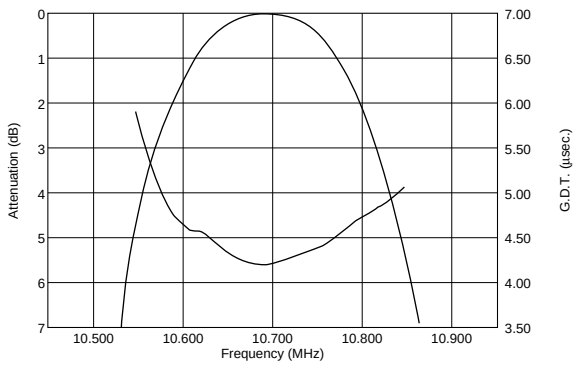
Rg + R1 = R2 = Input and Output Impedance
C = 10pF (Including stray capacitance and input capacitance of RF voltmeter.)

■ Frequency Characteristics

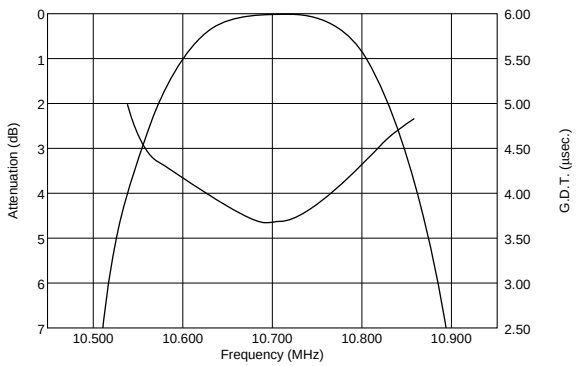
SFTLA10M7HA00-B0



SFTLA10M7GA00-B0



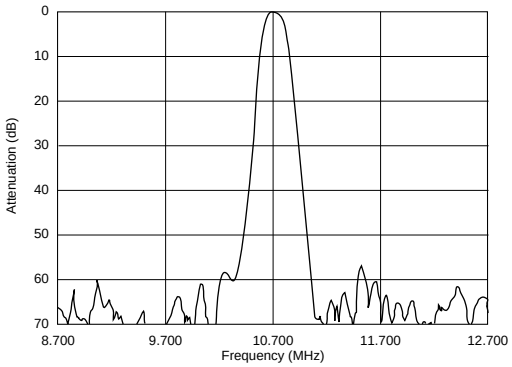
SFTLA10M7FA00-B0



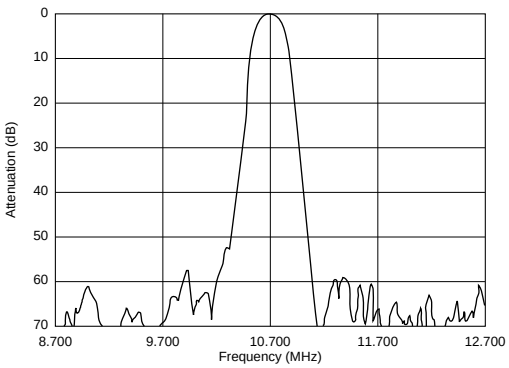
11

■ Frequency Characteristics (Spurious)

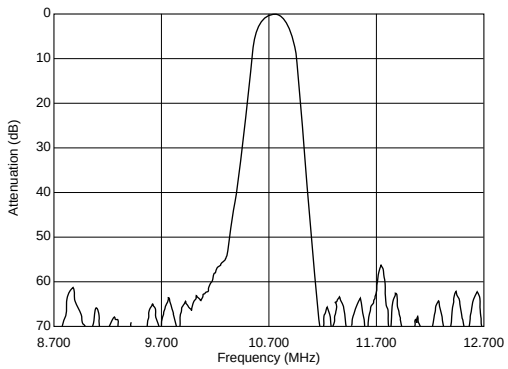
SFTLA10M7HA00-B0



SFTLA10M7GA00-B0



SFTLA10M7FA00-B0

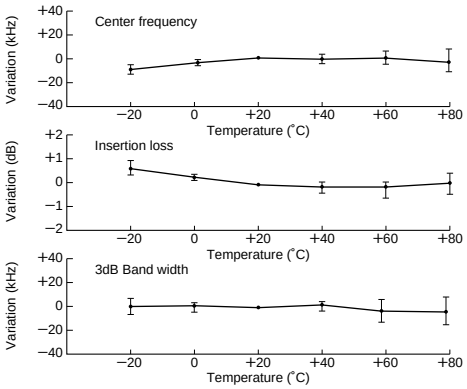


11

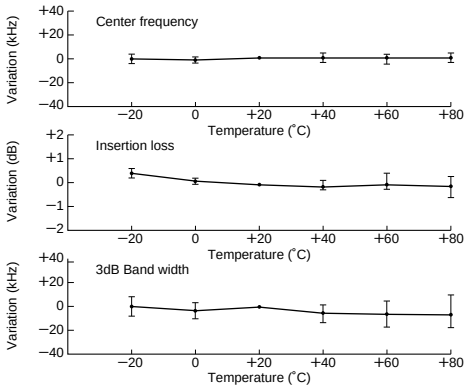
CERAFIL® 10.7MHz Related Data on Lead Type

■ Temperature Characteristics

SFELA10M7GA00-B0



SFELA10M7HA00-B0



11

■ Matching Conditions

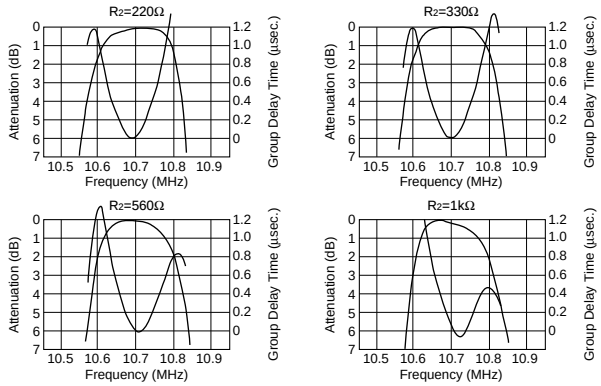
•When using ceramic filters, it is most important to match the input/output load to impedance 330 ohm (SFELA10M7DF00-B0 is 470 ohm and SFKLA10M7NL00-B0 is 600 ohm matching). Waveform symmetry is damaged when reactance is added to the input/output load.

•Two ceramic filters directly connected can be used for high selelctivity. For reducing waveform variation, it is recommended to input a buffer AMP between ceramic filters.

•The SFELA10M7 and SFTLA10M7 series are of input/output symmetric structure so that in theory there is no input/output directionality. Actual circuits may use different input/output loading conditions (for example, mismatched impedance) or capacitance load. In such cases, the waveform will be a little changed by the direction of the input/output of the ceramic filters.

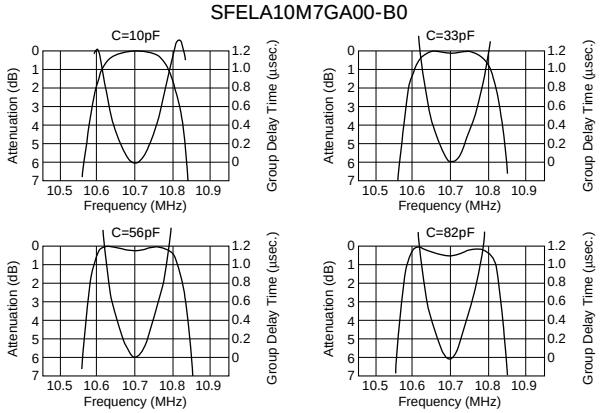
■ Loaded Resistance and Waveform (Rg+R1=330ohm)

SFELA10M7GA00-B0



■ Loaded Capacitance and Waveform (Rg+R1=R2=330ohm)

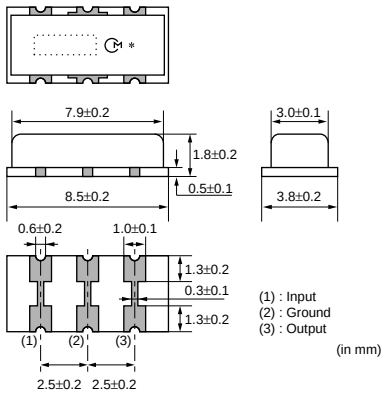
SFELA10M7GA00-B0



CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

CERAFIL® 4.5-6.5MHz Chip Type SFSKA Series

SMD ceramic filter SFSKA_CF is a small and thin SMD filter sealed with a metal cap.
Recommended for LCD-TVs, and small and thin tuners.



■ Features

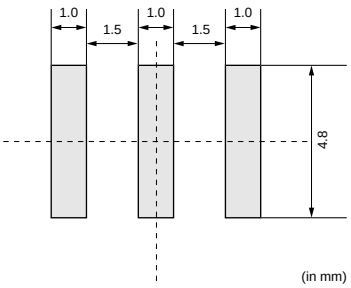
1. High attenuation outside bandwidth
2. Small and thin pakage
3. Reflow-solderable

12

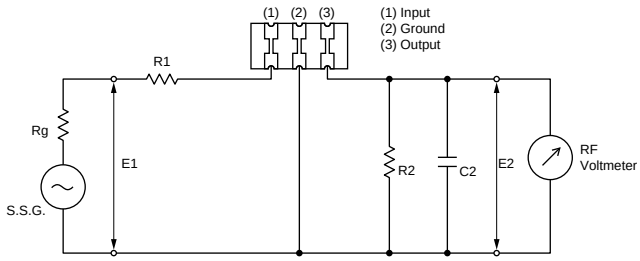
Part Number	Nominal Center Frequency (fn) (MHz)	3dB Bandwidth (kHz)	20dB Bandwidth (kHz)	Insertion Loss (dB)	Spurious Attenuation(1) (dB)	Spurious Attenuation(2) (dB)	Input/Output Impedance (ohm)
SFSKA4M50CF00-R1	4.500	fn±60 min.	600 max.	6.0 max.	20 min. [within 0 to fn]	15 min. [within fn to 7.0MHz]	1000

Insertion Loss: at minimum loss point
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Standard Land Pattern Dimensions

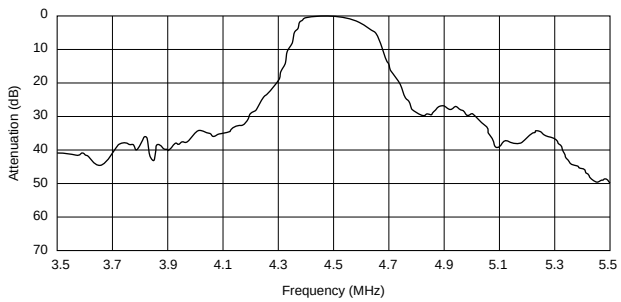


■ Test Circuit

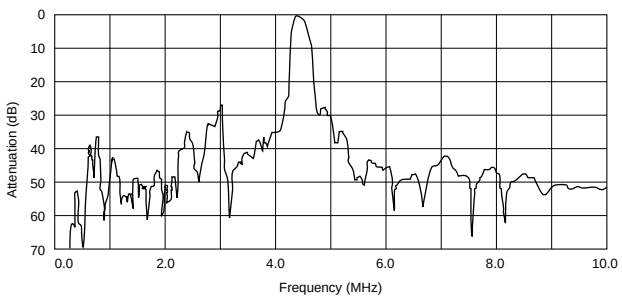


R1+Rg=R2=1000Ω ±5%, Rg=50Ω
C2=10pF (Including stray capacitance and Input capacitance of RF Voltmeter)
E1:S.S.G. Output voltage

■ Frequency Characteristics



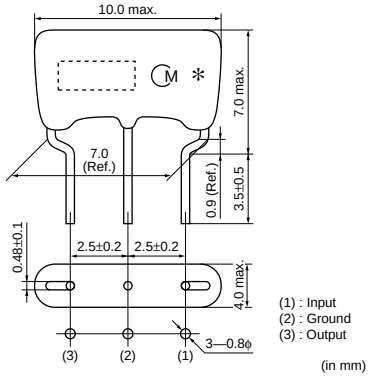
■ Frequency Characteristics (Spurious)



CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

CERAFIL® 4.5-6.5MHz Standard Lead Type SFSRA Series

As part of the environment protection activity, solder for terminal plating and terminal-element connection inside of ceramic filter SFSRA series contains no lead (Pb).
This series also features thickness shear mode same as SFSRH series (current type), which provides very low spurious response within video signal band.



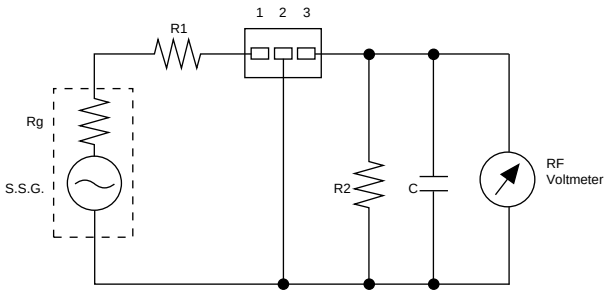
■ Features

1. Excellent spurious suppression characteristics within video signal band.
2. Available 4 pass bandwidth variation to meet various requests.
3. Low profile (H=7.0mm max.)
4. Lead dimension: Improved mounting reliability (cut & clinch) due to round terminal.

Part Number	Nominal Center Frequency (fn) (MHz)	3dB Bandwidth (kHz)	20dB Bandwidth (kHz)	Insertion Loss (dB)	Spurious Attenuation(1) (dB)	Spurious Attenuation(2) (dB)	Input/Output Impedance (ohm)
SFSRA4M50CF00-B0	4.500	fn±60 min.	600 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 7.0MHz]	1000
SFSRA4M50DF00-B0	4.500	fn±70 min.	750 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 7.0MHz]	1000
SFSRA4M50EF00-B0	4.500	fn±125 min.	850 max.	6.0 max.	25 min. [within 0 to fn]	18 min. [within fn to 7.0MHz]	1000
SFSRA5M50BF00-B0	5.500	fn±50 min.	400 max.	8.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 7.5MHz]	600
SFSRA5M50CF00-B0	5.500	fn±60 min.	600 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to7.5MHz]	600
SFSRA5M50DF00-B0	5.500	fn±80 min.	750 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 7.5MHz]	600
SFSRA5M74BF00-B0	5.742	fn±50 min.	400 max.	8.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 7.5MHz]	600
SFSRA5M74CF00-B0	5.742	fn±60 min.	600 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 7.5MHz]	600
SFSRA6M00CF00-B0	6.000	fn±60 min.	600 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 8.0MHz]	470
SFSRA6M00DF00-B0	6.000	fn±80 min.	750 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 8.0MHz]	470
SFSRA6M50CF00-B0	6.500	fn±70 min.	650 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 8.5MHz]	470
SFSRA6M50DF00-B0	6.500	fn±80 min.	800 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 8.5MHz]	470

Insertion Loss: at minimum loss point
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

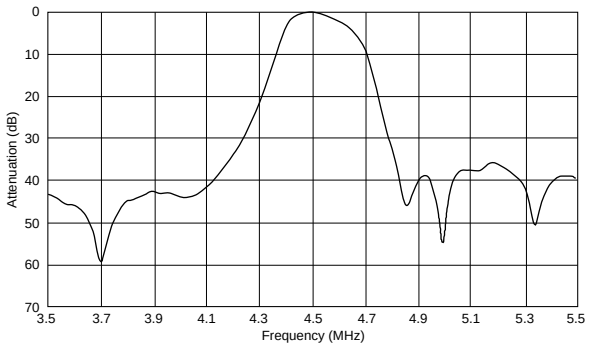
■ Test Circuit



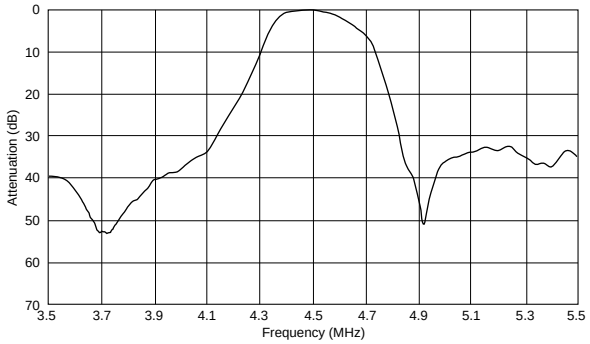
Rg+R1=R2=Input and Output Impedance
C=10pF (Including stray capacitance and
input capacitance of RF voltmeter)

■ Frequency Characteristics

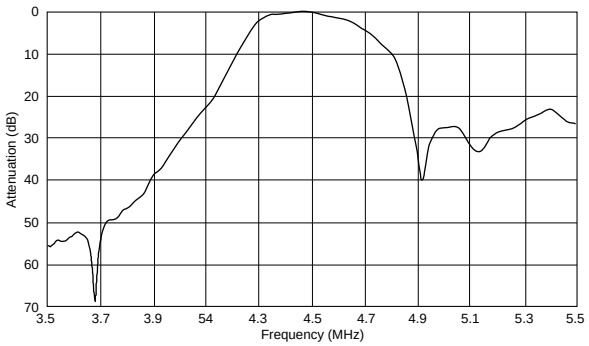
SFSRA4M50CF00-B0



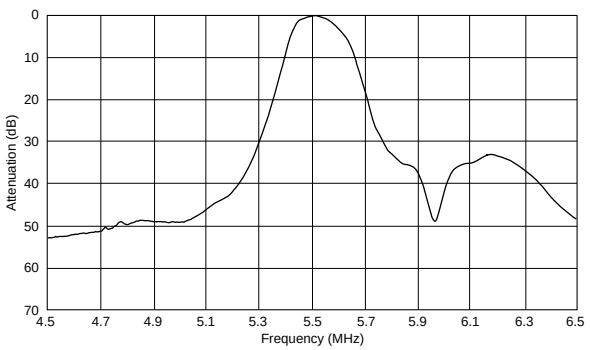
SFSRA4M50DF00-B0



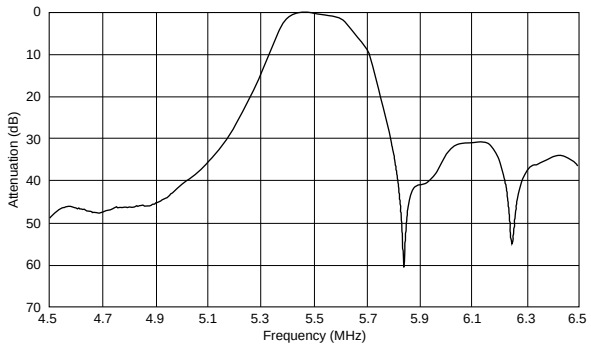
SFSRA4M50EF00-B0



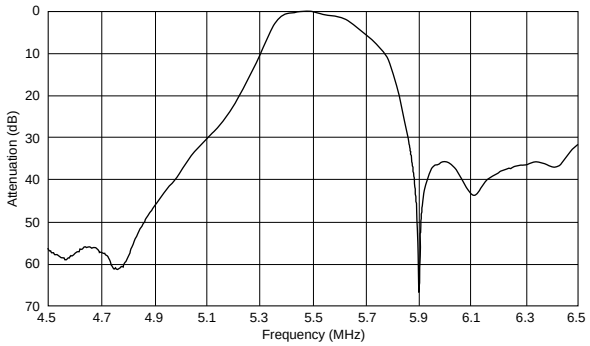
SFSRA5M50BF00-B0



SFSRA5M50CF00-B0



SFSRA5M50DF00-B0

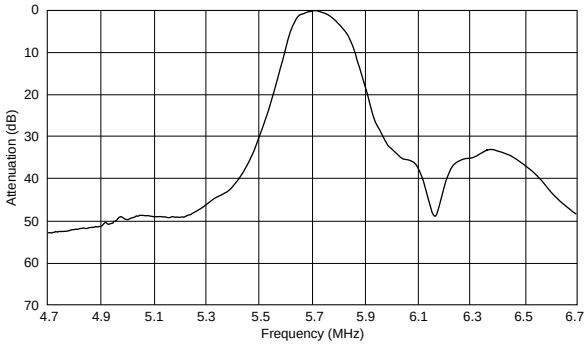


Continued on the following page.

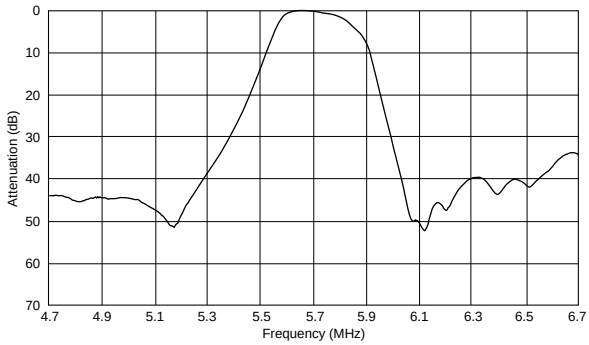
Continued from the preceding page.

■ Frequency Characteristics

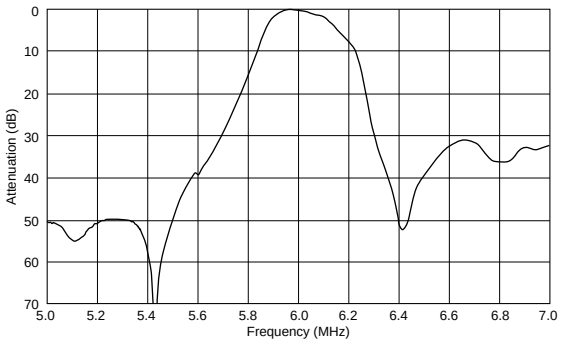
SFSRA5M74BF00-B0



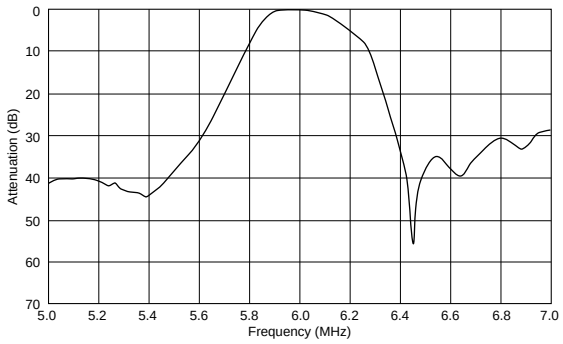
SFSRA5M74CF00-B0



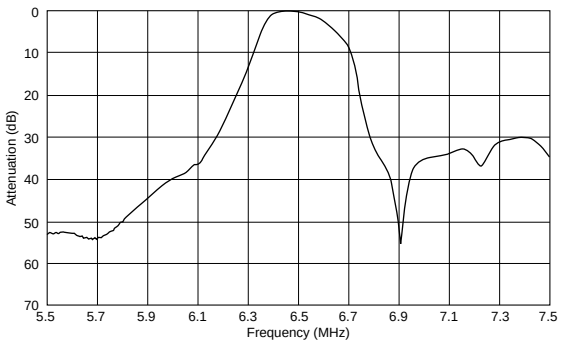
SFSRA6M00CF00-B0



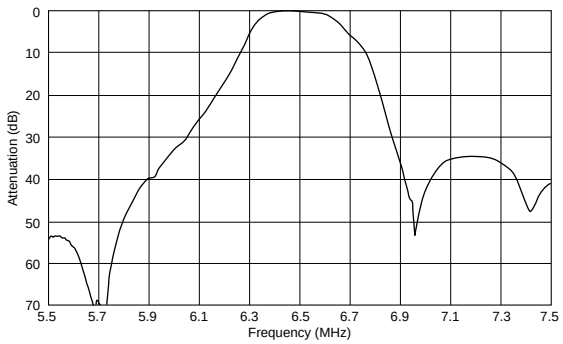
SFSRA6M00DF00-B0



SFSRA6M50CF00-B0

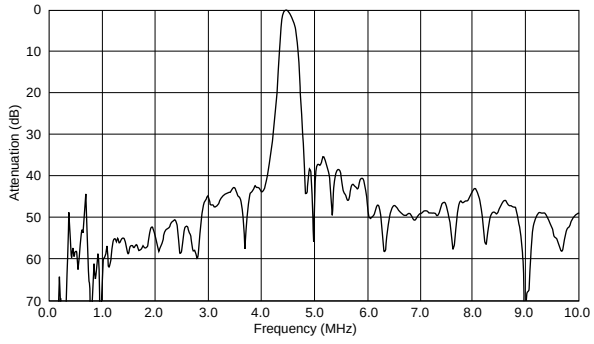


SFSRA6M50DF00-B0

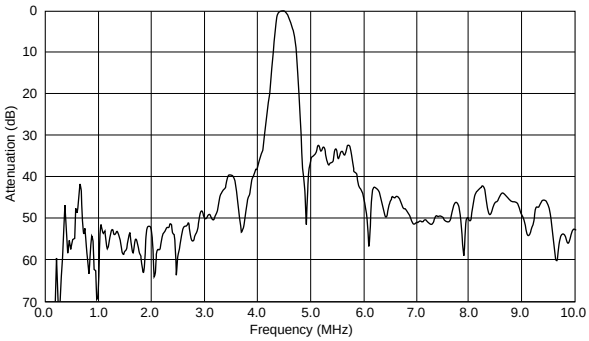


■ Frequency Characteristics (Spurious)

SFSRA4M50CF00-B0



SFSRA4M50DF00-B0

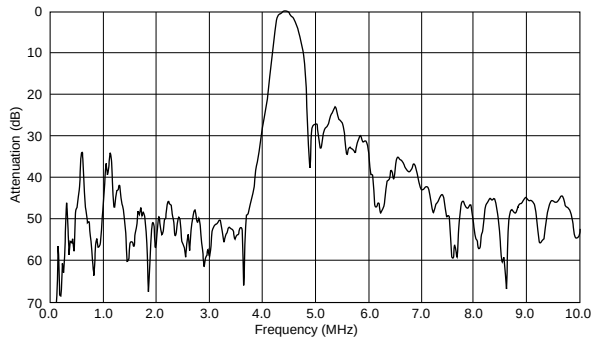


Continued on the following page.

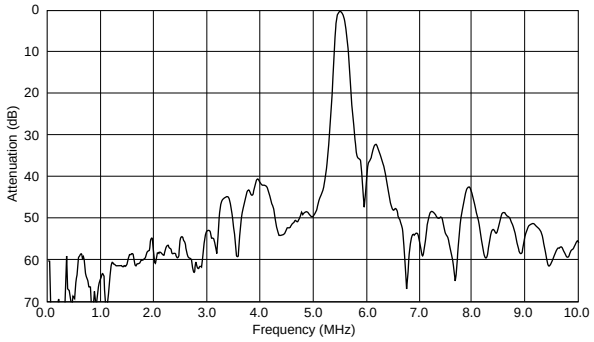
Continued from the preceding page.

■ Frequency Characteristics (Spurious)

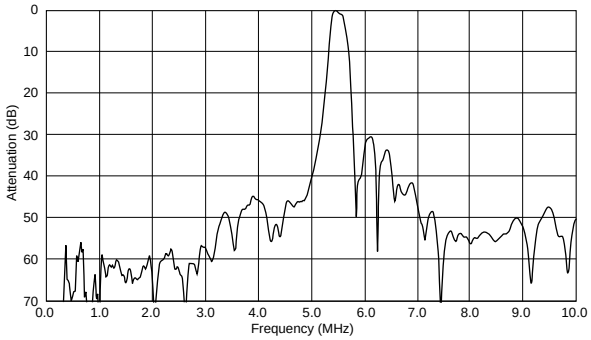
SFSRA4M50EF00-B0



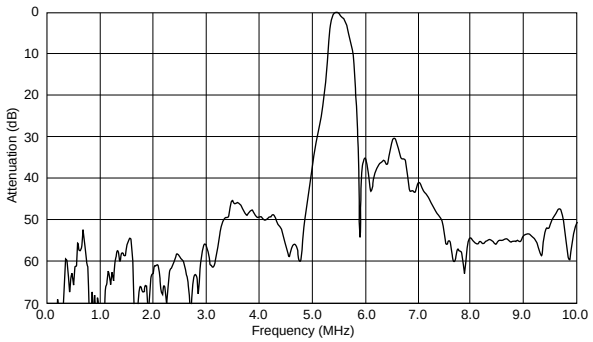
SFSRA5M50BF00-B0



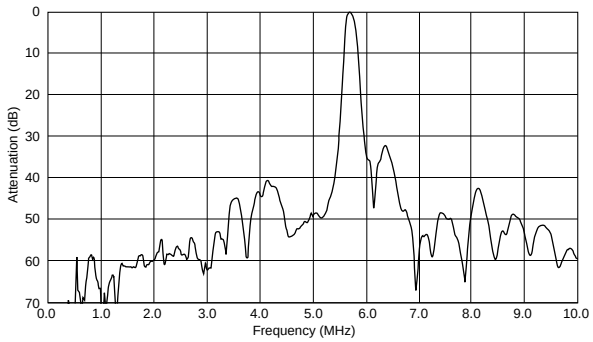
SFSRA5M50CF00-B0



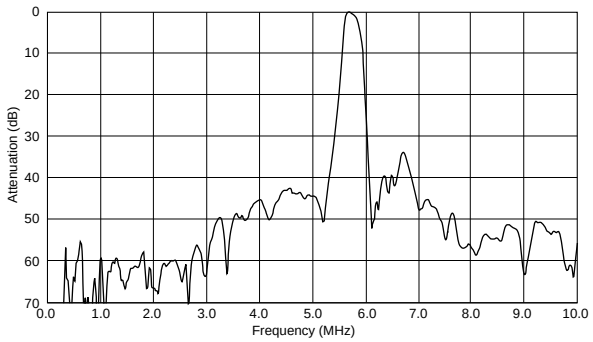
SFSRA5M50DF00-B0



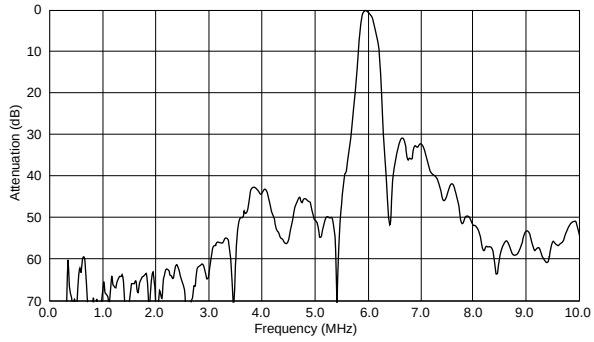
SFSRA5M74BF00-B0



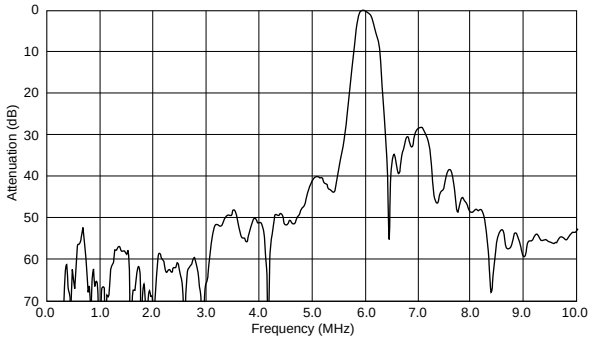
SFSRA5M74CF00-B0



SFSRA6M00CF00-B0



SFSRA6M00DF00-B0

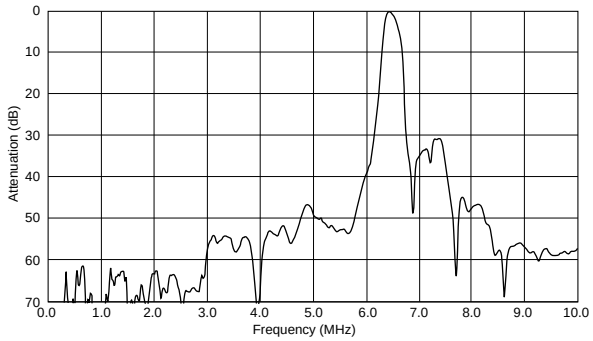


Continued on the following page.

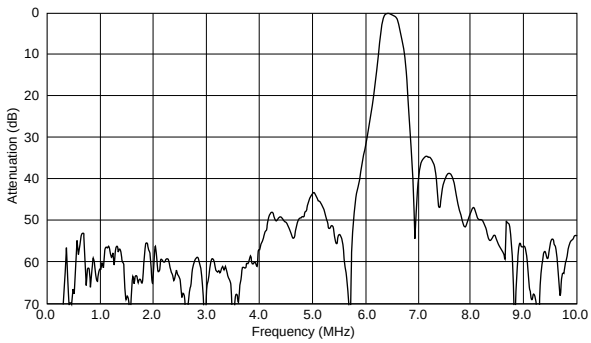
Continued from the preceding page.

■ Frequency Characteristics (Spurious)

SFSRA6M50CF00-B0



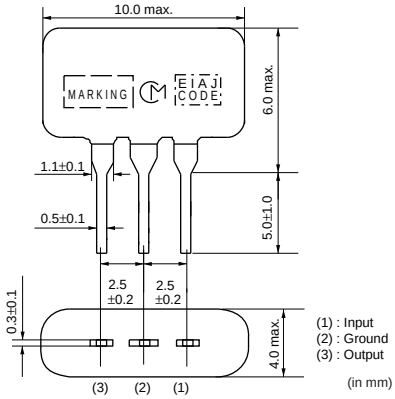
SFSRA6M50DF00-B0



CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

CERAFIL® 3.5-6.5MHz Low Profile Type SFSRL Series

SFSRL series are the Low-profile type of standard SFSRA series.



■ Features

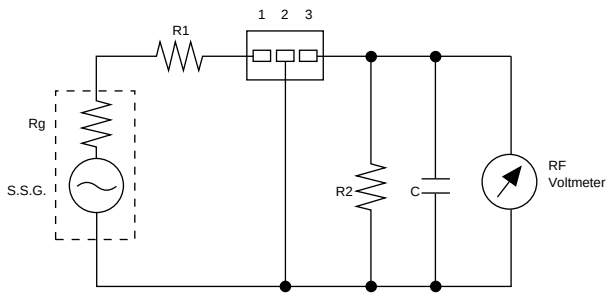
1. Installed height is 6.0mm, making it well suited for compact, thin sets.
2. Electrical char. and performance are the same as those of SFSRA series.
3. 2 types, narrow and middle bandwidth, are prepared.

Part Number	Nominal Center Frequency (fn) (MHz)	3dB Bandwidth (kHz)	20dB Bandwidth (kHz)	Insertion Loss (dB)	Spurious Attenuation(1) (dB)	Spurious Attenuation(2) (dB)	Input/Output Impedance (ohm)
SFSRL4M50CF00-B0	4.500	fn±60 min.	600 max.	6.0 max.	30 min. [within 0 to fn]	15 min. [within fn to 7.0MHz]	1000
SFSRL4M50DF00-B0	4.500	fn±70 min.	750 max.	6.0 max.	30 min. [within 0 to fn]	15 min. [within fn to 5.7MHz]	1000
SFSRL5M50CF00-B0	5.500	fn±60 min.	600 max.	6.0 max.	30 min. [within 0 to fn]	15 min. [within fn to 7.0MHz]	600
SFSRL5M50DF00-B0	5.500	fn±80 min.	750 max.	6.0 max.	30 min. [within 0 to fn]	15 min. [within fn to 7.0MHz]	600
SFSRL6M00CF00-B0	6.000	fn±60 min.	600 max.	6.0 max.	30 min. [within 0 to fn]	15 min. [within fn to 7.5MHz]	470
SFSRL6M00DF00-B0	6.000	fn±80 min.	750 max.	6.0 max.	30 min. [within 0 to fn]	15 min. [within fn to 7.5MHz]	470
SFSRL6M50CF00-B0	6.500	fn±70 min.	650 max.	6.0 max.	30 min. [within 0 to fn]	15 min. [within fn to 8.5MHz]	470
SFSRL6M50DF00-B0	6.500	fn±80 min.	800 max.	6.0 max.	30 min. [within 0 to fn]	15 min. [within fn to 8.0MHz]	470

Insertion Loss: at minimum loss point

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

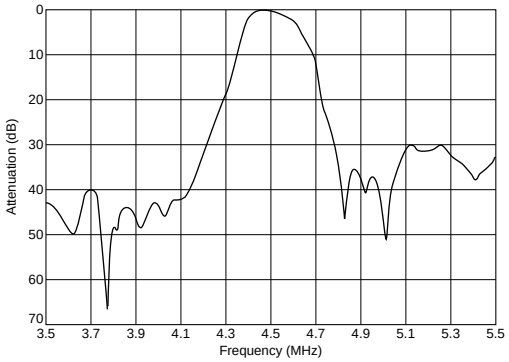
■ Test Circuit



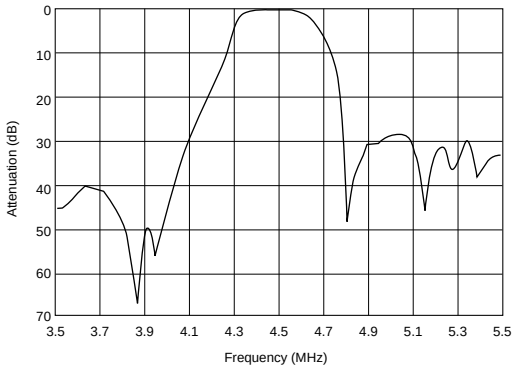
Rg+R1=R2=Input and Output Impedance
C=10pF (Including stray capacitance and input capacitance of RF voltmeter)

■ Frequency Characteristics

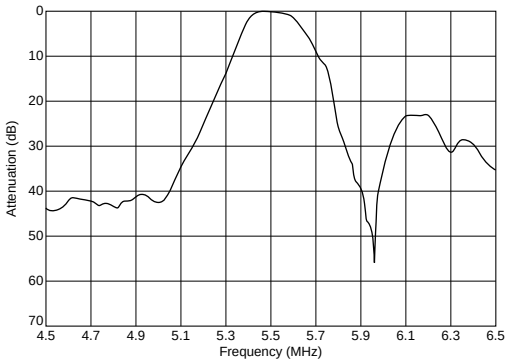
SFSRL4M50CF00-B0



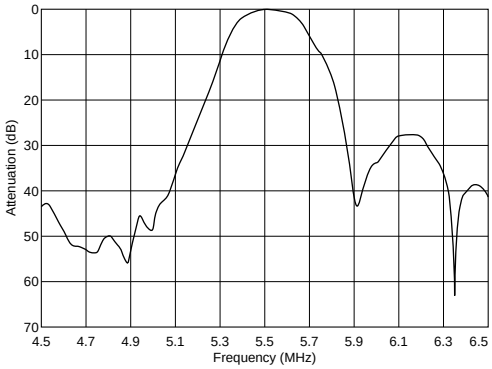
SFSRL4M50DF00-B0



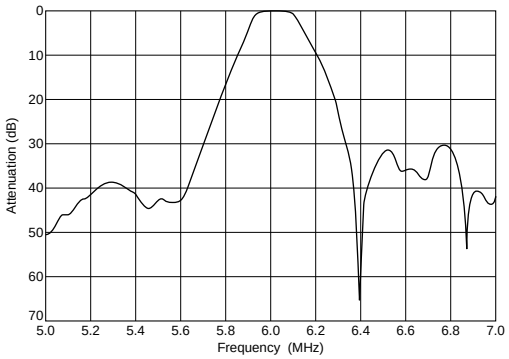
SFSRL5M50CF00-B0



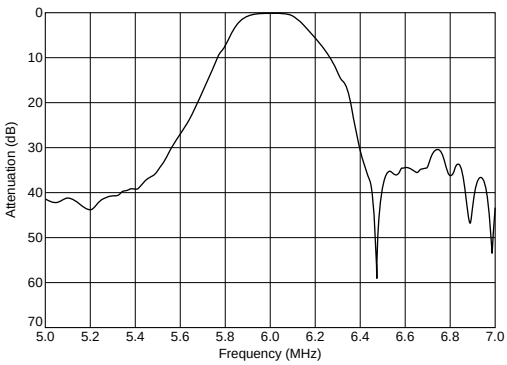
SFSRL5M50DF00-B0



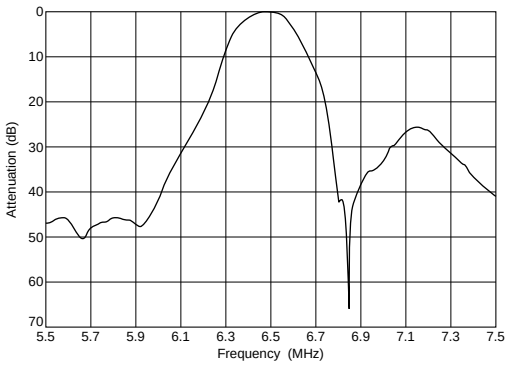
SFSRL6M00CF00-B0



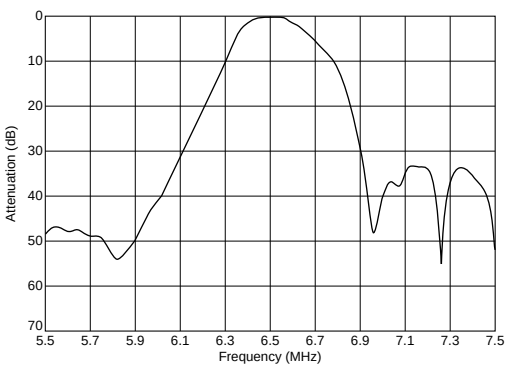
SFSRL6M00DF00-B0



SFSRL6M50CF00-B0



SFSRL6M50DF00-B0

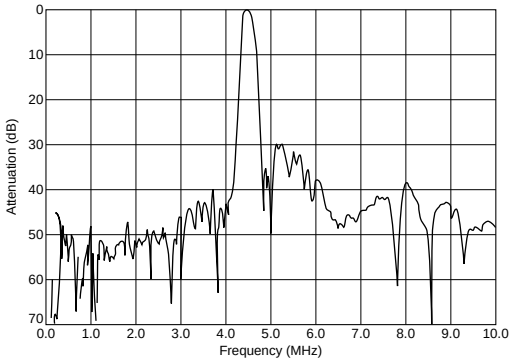


Continued on the following page.

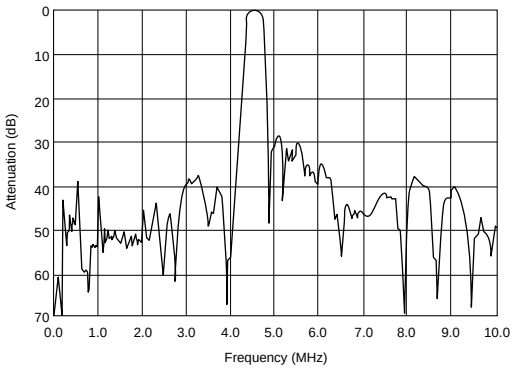
Continued from the preceding page.

■ Frequency Characteristics (Spurious)

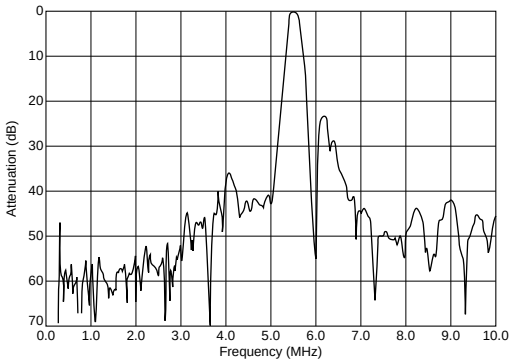
SFSRL4M50CF00-B0



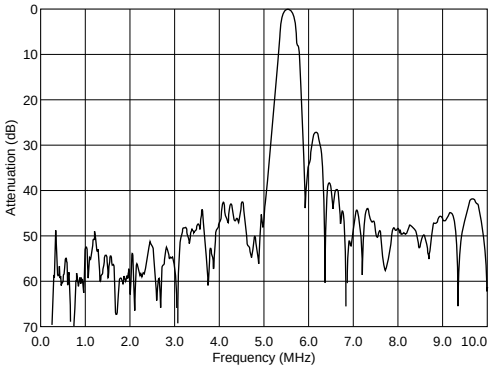
SFSRL4M50DF00-B0



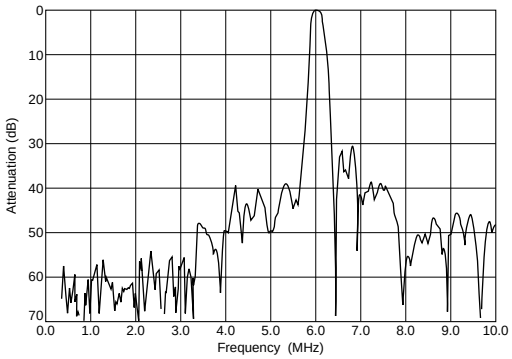
SFSRL5M50CF00-B0



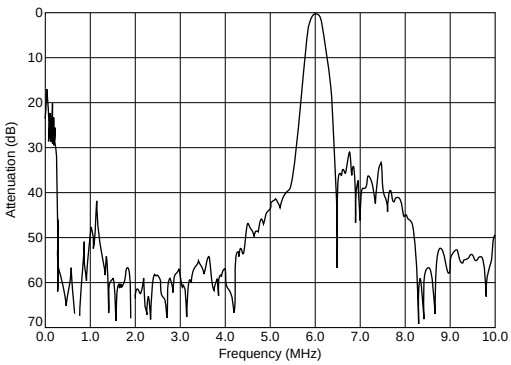
SFSRL5M50DF00-B0



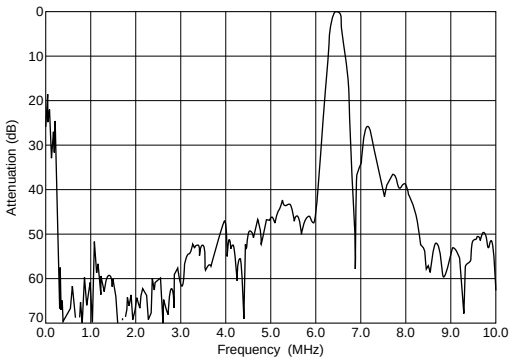
SFSRL6M00CF00-B0



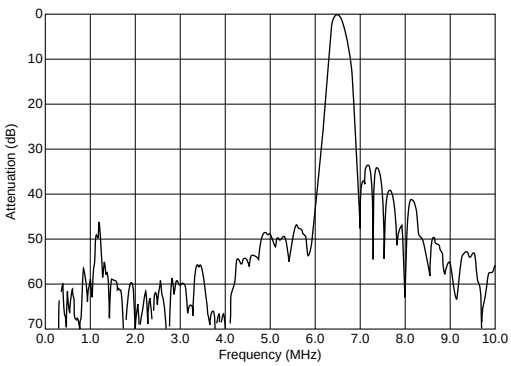
SFSRL6M00DF00-B0



SFSRL6M50CF00-B0



SFSRL6M50DF00-B0



CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

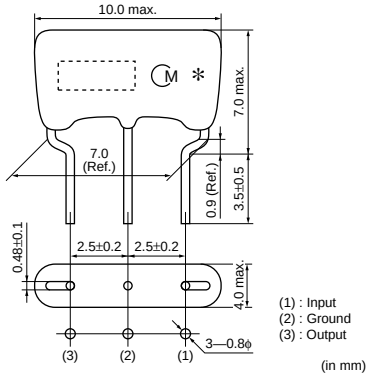
CERAFIL® 3.5-6.5MHz for Chroma Signal SFSRA/L Series

Chroma signals frequency conversion process is involved in VCRs video signal processing circuit.
These SFSRA/SFSRH/SFSRL series are suitable for B.P.F.

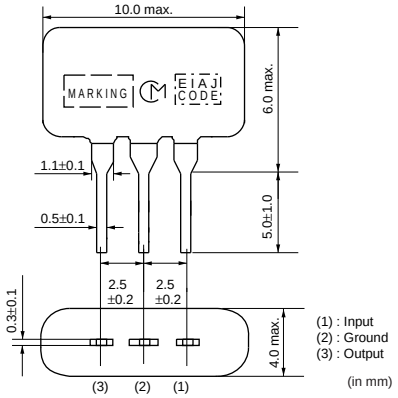
■ Features

1. Frequency adjustment free.
2. Responsible for VHS. 8mm VCR system.

SFSRA Series



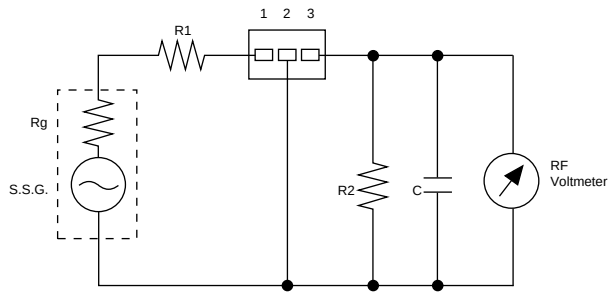
SFSRL Series



Part Number	Nominal Center Frequency (fn) (MHz)	3dB Bandwidth (kHz)	20dB Bandwidth (kHz)	Insertion Loss (dB)	Spurious Attenuation(1) (dB)	Spurious Attenuation(2) (dB)	Input/Output Impedance (ohm)
SFSRA4M43CF00-B0	4.430	fn±60 min.	600 max.	6.0 max.	30 min. [within 0 to fn]	20 min. [within fn to 7.0MHz]	1000
SFSRL4M32DF00-B0	4.320	fn±70 min.	750 max.	6.0 max.	30 min. [within 0 to fn]	15 min. [within fn to 5.5MHz]	1000
SFSRL5M17DF00-B0	5.170	fn±70 min.	750 max.	7.5 max.	30 min. [within 0 to fn]	15 min. [within fn to 7.0MHz]	600

Insertion Loss: at minimum loss point
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

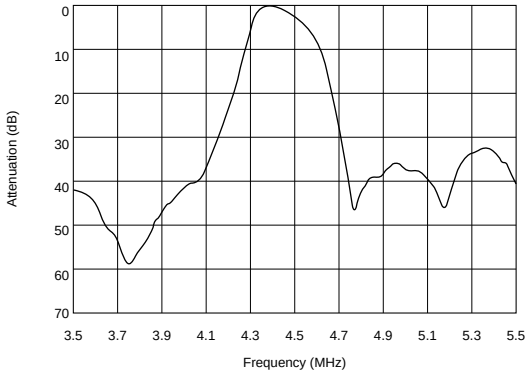
■ Test Circuit



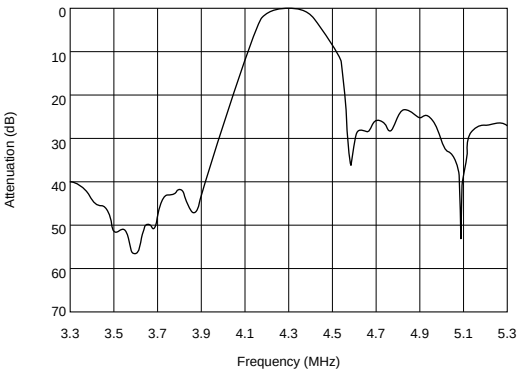
Rg+R1=R2=Input and Output Impedance
C=10pF (Including stray capacitance and input capacitance of RF voltmeter)

■ Frequency Characteristics

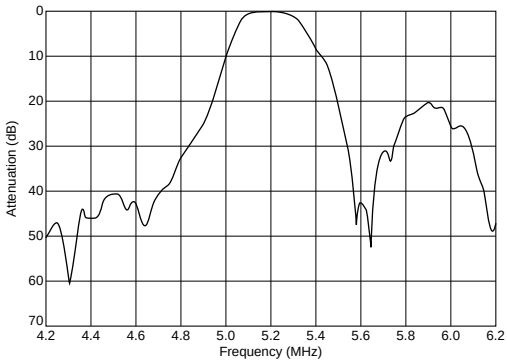
SFSRA4M43CF00-B0



SFSRL4M32DF00-B0



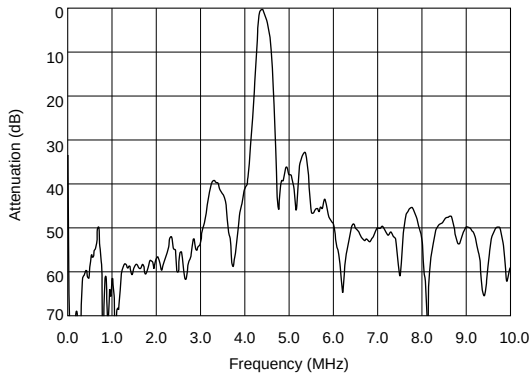
SFSRL5M17DF00-B0



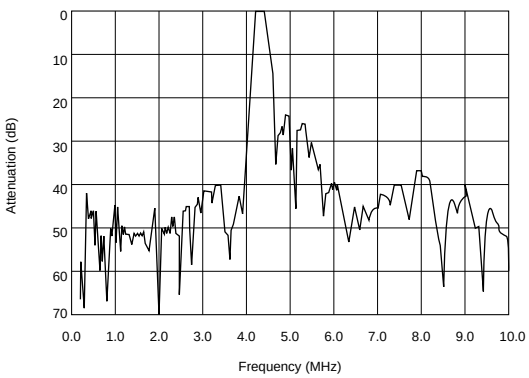
15

■ Frequency Characteristics (Spurious)

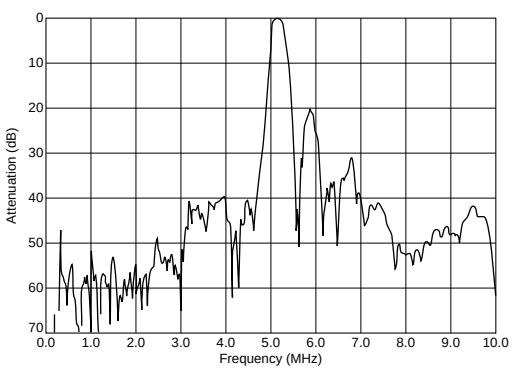
SFSRA4M43CF00-B0



SFSRL4M32DF00-B0



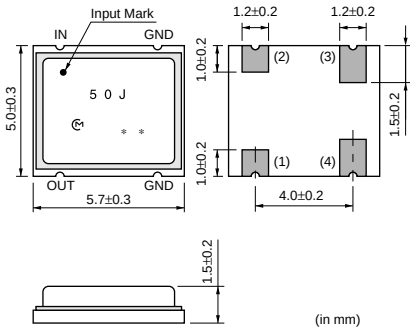
SFSRL5M17DF00-B0



CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

CERAFIL® 455kHz Chip Type PFWCC Series

PFWCC series for AM use is one of the most recommendable intermediate filters, having such distinctive features as high selectivity, high stability, and adjustment-free operation.
Additionally its easy matching with IC helps create an easy circuit design.
This is the most recommendable for portable radio with small package. Especially, reflowable with SMD package.



■ Features

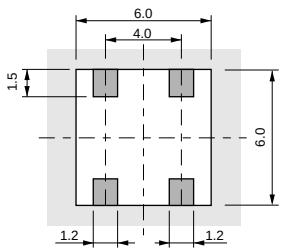
1. Center frequency range between 450 and 470 kHz are available standard tolerance of +-2 kHz.
2. For frequency synthesizers, center frequencies of 450, 459 and 468 kHz are available standard tolerance of +-1 kHz.

Part Number	Center Frequency (fo) (kHz)	3dB Bandwidth (kHz)	Selectivity (+) (dB)	Selectivity (-) (dB)	Insertion Loss (dB)	Input/Output Impedance (ohm)	Element
PFWCC450KS2A-R0	450 ±2.0kHz	5.5 ±1.5kHz	17 min.[fo+9kHz]	17 min.[fo-9kHz]	6.0 max.	3000	2

Insertion Loss: at minimum loss point
Center frequency (fo) is defined by the center of 3dB bandwidth.
For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

16

■ Standard Land Pattern Dimensions



The solder resist should be printed except for the land pattern on the P.C.B..

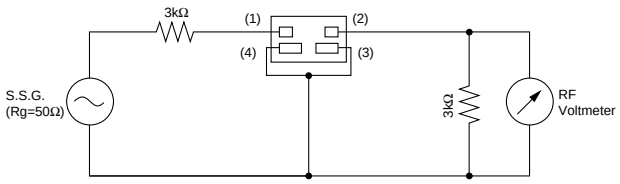
The material of P.C.B. is the epoxy resin of glass fabric base (t=0.8mm)

■ Recommended IFT

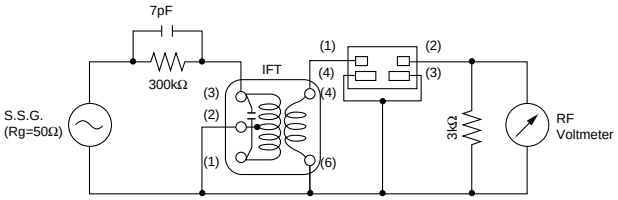
Item \ Type	7×7mm IFT			5×5mm IFT		
Winding Specification	(1)—(2)	(2)—(3)	(4)—(6)	(1)—(2)	(2)—(3)	(4)—(6)
S(3) (2) (1) (4)S (6) (Bottom view)	85T	67T	23T	84T	98T	33T
No load Qu	90			65		
Tuning Capacitance	180pF			180pF		

• Maching of CERAFIL®PFWLA series with IFT is decided by the IFT secondary side impedance, |Z2|. Set the |Z2| at about 4.2kΩ.

■ Test Circuit (CERAFIL® Only)



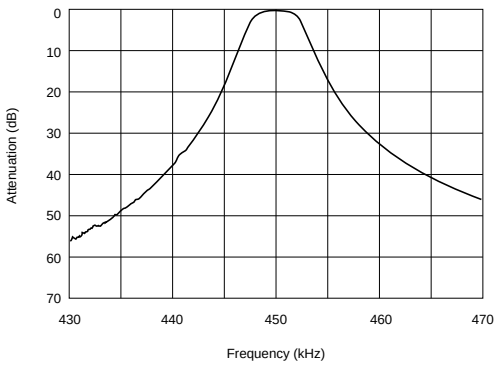
■ Test Circuit (CERAFIL® with IFT)



16

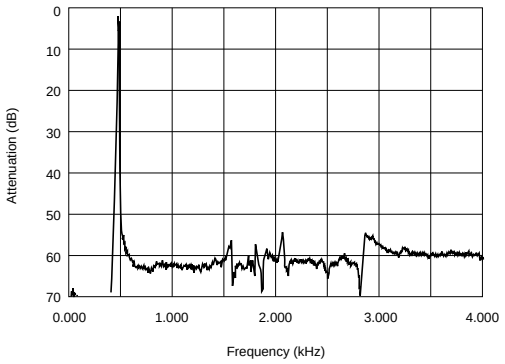
■ Frequency Characteristics

IFT+PFWCC450KS2A-R0



■ Frequency Characteristics (Spurious)

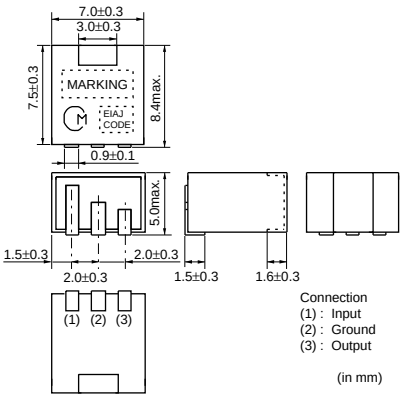
IFT+PFWCC450KS2A-R0



CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

CERAFIL® 455kHz Chip Type SFPCA Series

SFPCA series for AM use is one of the most recommendable intermediate filters, having such distinctive features as high selectivity, high stability and adjustment-free operation. Additionally its easy matching with IC helps create an easy circuit design.



■ Features

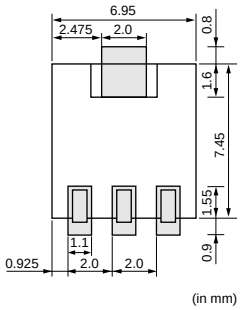
1. The filters are mountable by automatic placers and can be reflow soldered and withstand washing.
2. The filters are wide bandwidth and high selectivity. So they are suitable for car radio and multi band radio.

Part Number	Center Frequency (fo) (kHz)	6dB Bandwidth (kHz)	Selectivity (+) (dB)	Selectivity (-) (dB)	Insertion Loss (dB)	Input/Output Impedance (ohm)	Element
SFPCA450KH1A-R1	450 ±1.0kHz	fn±3.0 min.	40 min.[fn+9kHz]	40 min.[fn-9kHz]	6.0 max.	2000	4
SFPCA450KG1A-R1	450 ±1.0kHz	fn±4.5 min.	40 min.[fn+10kHz]	40 min.[fn-10kHz]	6.0 max.	1500	4
SFPCA450KF4A-R1	450 ±1.5kHz	fn±6.0 min.	40 min.[fn+12.5kHz]	40 min.[fn-12.5kHz]	6.0 max.	1500	4

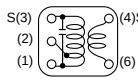
Insertion Loss: at minimum loss point
Center frequency (fo) is defined by the center of 6dB bandwidth.
(fn) means nominal center frequency (450kHz).
For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

17

■ Standard Land Pattern Dimensions

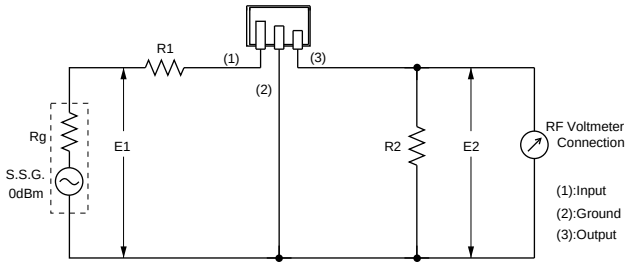


■ Recommended IFT

Item \ Type	SFPCA		
Winding Specification	(1)—(2)	(2)—(3)	(4)—(6)
 (Bottom view)	60T	125T	28T
No load Qu	40		
Tuning Capacitance	180pF		

• Matching of CERAFIL®SFPCA series with IFT is decided by the Qu of IFT and IFT secondary side impedance, |Z2|. Set the Qu at about 40 because a Qu value which is too high (e.g.,90) may produce ripple in the waveform. It is recommended to match the impedance of |Z2| with that of the CERAFIL®.

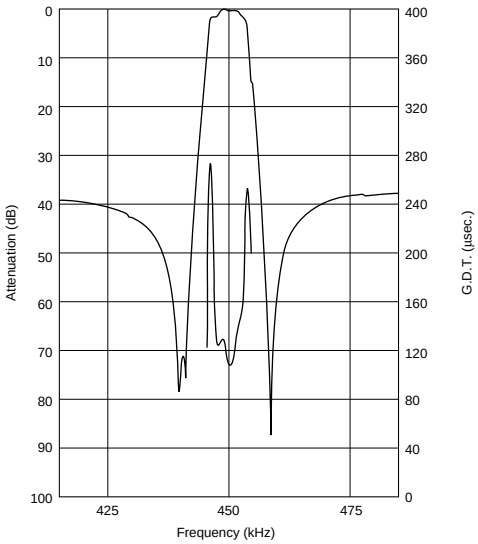
■ Test Circuit



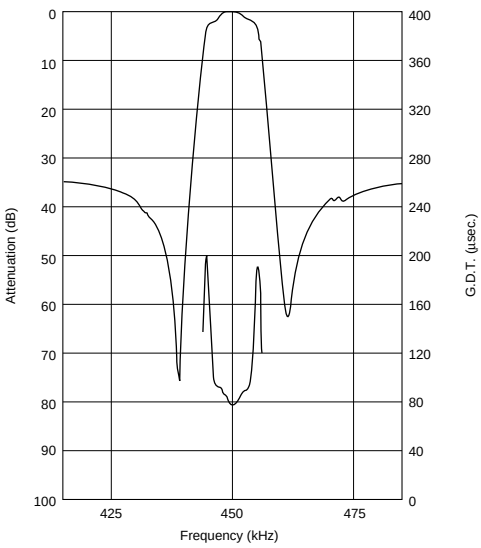
Rg+R1=R2=Input/Output Impedance

■ Frequency Characteristics

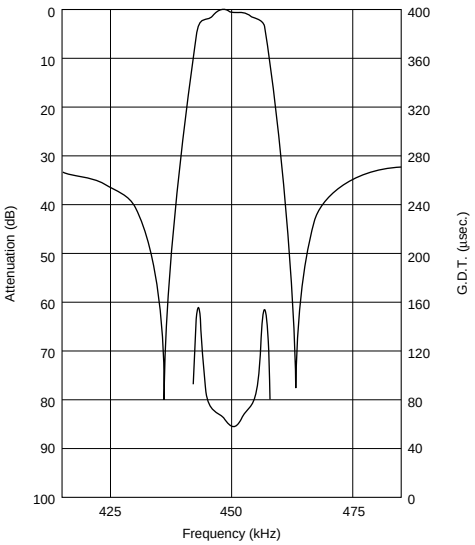
SFPCA450KH1A-R1



SFPCA450KG1A-R1



SFPCA450KF4A-R1



17

CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

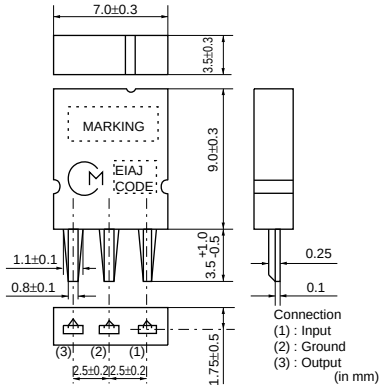
CERAFIL® 455kHz SFULA/SFZLA Series

SFULA/SFZLA series for AM use is one of the most recommendable intermediate filters, having such distinctive features as high selectivity, high stability, and adjustment-free operation. Additionally its easy matching with IC helps create an easy circuit design.

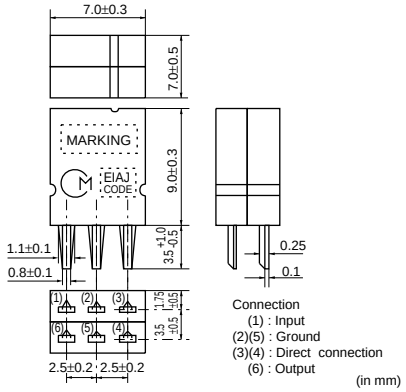
■ Features

1. Center frequency range between 450 to 470 kHz are available standard tolerance of +-2 kHz.
2. For frequency synthesizers, center frequencies of 450, 459 and 468 kHz are available standard tolerance of +-1 kHz.

SFULA Series



SFZLA Series



Part Number	Center Frequency (fo) (kHz)	3dB Bandwidth (kHz)	Selectivity (+) (dB)	Selectivity (-) (dB)	Insertion Loss (dB)	Input/Output Impedance (ohm)	Element
SFULA455KU2A-B0	455 ±2.0kHz	10.0 ±3.0kHz	4 min.[fo+10kHz]	6 min.[fo-10kHz]	5.0 max.	3000	1
SFULA455KU2B-B0	462 ±2.0kHz	10.0 ±3.0kHz	4 min.[fo+10kHz]	6 min.[fo-10kHz]	5.0 max.	3000	1
SFZLA455KN2A-B0	455.5 ±2.0kHz	4.0 ±1.0kHz	23 min.[fo+9kHz]	23 min.[fo-9kHz]	7.0 max.	3000	2
SFZLA455KS2A-B0	456 ±2.0kHz	5.5 ±1.0kHz	18 min.[fo+9kHz]	18 min.[fo-9kHz]	7.0 max.	3000	2
SFZLA455KT2A-B0	456 ±2.0kHz	7.0 ±1.0kHz	16 min.[fo+9kHz]	16 min.[fo-9kHz]	6.0 max.	3000	2

Insertion Loss: at minimum loss point
Center frequency (fo) is defined by the center of 3dB bandwidth.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Frequency Characteristics (CERAFIL® with IFT)

Part Number	6dB Band Width (kHz)	Selectivity		Input Level (at 0.6mV output) (dB)
		+9kHz off (dB)	-9kHz off (dB)	
IFT+SFULA455KU2B-B0	6.5	20	23	78
IFT+SFZLA455KN2A-B0	5.0	38		78
IFT+SFZLA455KS2A-B0	7.0	33		78
IFT+SFZLA455KT2A-B0	8.5	27		78

Typ. value

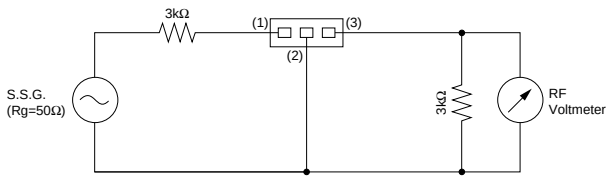
■ Recommended IFT (7x7)

Item \ Type	SFULA□L			SFZLA□L		
Winding Specification	(1)—(2)	(2)—(3)	(4)—(6)	(1)—(2)	(2)—(3)	(4)—(6)
S(3) (2) (1) (4)S (6) (Bottom view)	70T	115T	7T	68T	84T	14T
No load Qu	105			90		
Tuning Capacitance	180pF			180pF		

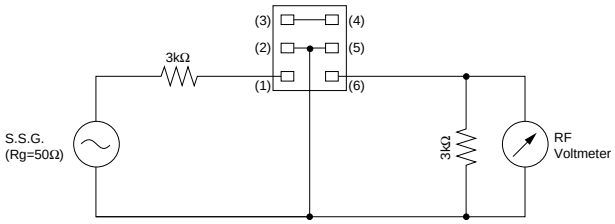
• Maching of CERAFIL®SFULA/SFZLA series with IFT is decided by the IFT secondary side impedance, |Z2|. The design target values of |Z2| are :
For SFULA□L : 300Ω
For SFZLA□L : 1kΩ

■ Test Circuit (CERAFIL® Only)

SFULA Series



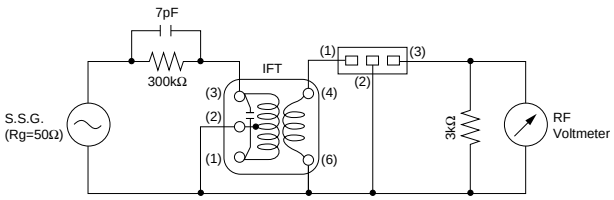
SFZLA Series



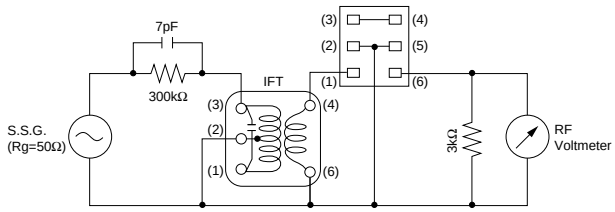
18

■ Test Circuit (CERAFIL® with IFT)

SFULA Series

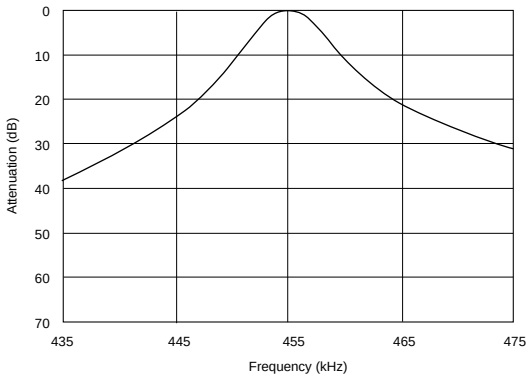


SFZLA Series

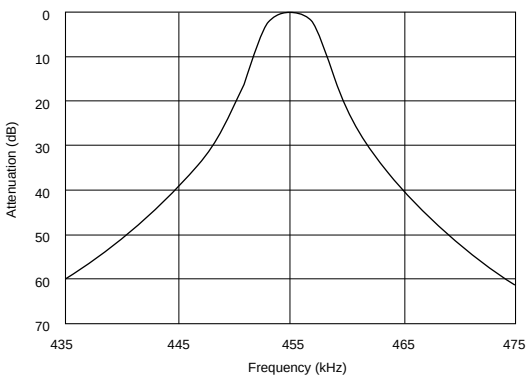


■ Frequency Characteristics

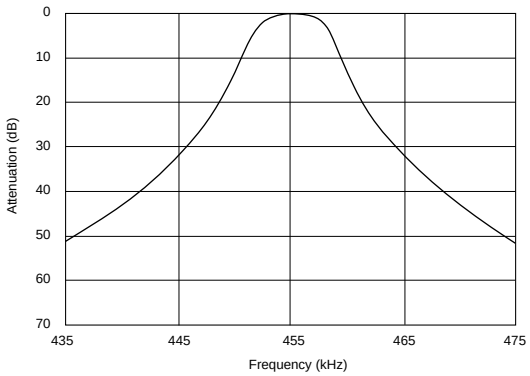
IFT+SFULA455KU2B-B0



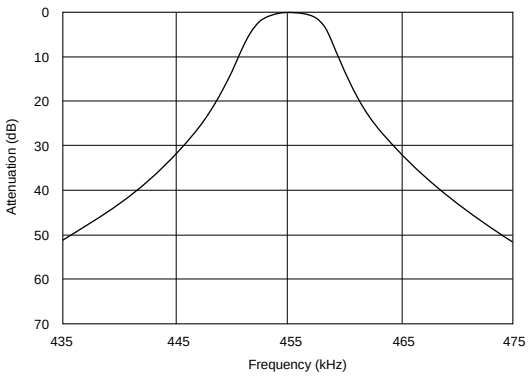
IFT+SFZLA455KN2A-B0



IFT+SFZLA455KS2A-B0



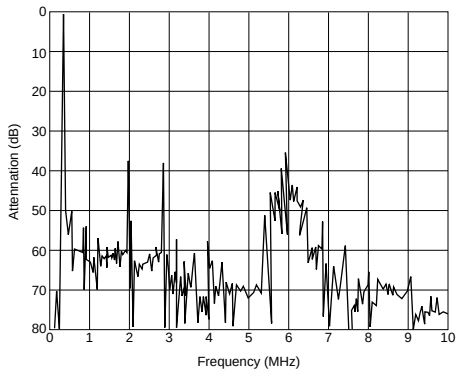
IFT+SFZLA455KT2A-B0



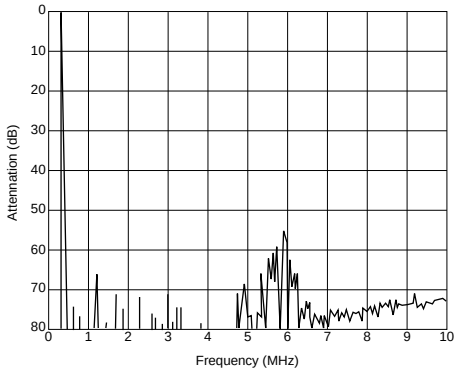
18

■ Frequency Characteristics (Spurious)

IFT+SFULA455KU2B-B0



IFT+SFZLA Series



CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

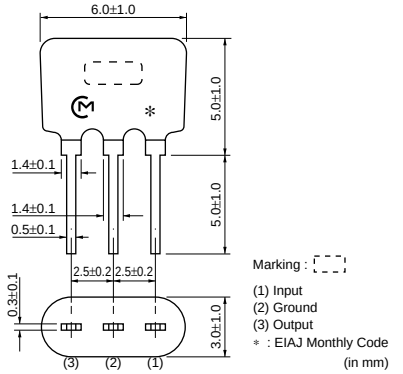
CERAFIL® 455kHz PFSLA/PFWLA Series

PFSLA/PFWLA series for AM use is one of the most recommendable intermediate filters, having such distinctive features as high selectivity, high stability, and adjustment-free operation.
Additionally its easy matching with IC helps create an easy circuit design.
This is the most recommendable for portable radios with small package.

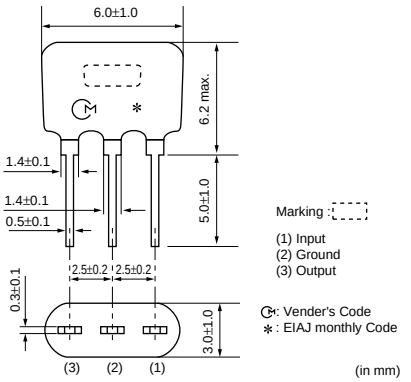
■ Features

1. Center frequency range between 450 to 470 kHz are available standard tolerance of +-2 kHz.
2. For frequency synthesizers, center frequencies of 450, 459 and 468 kHz are available standard tolerance of +-1 kHz.

PFSLA Series



PFWLA Series



19

Part Number	Center Frequency (fo) (kHz)	3dB Bandwidth (kHz)	Selectivity (+) (dB)	Selectivity (-) (dB)	Insertion Loss (dB)	Input/Output Impedance (ohm)	Element
PFSLA455KP2A-B0	455 ±2.0kHz	4.5 ±1.5kHz	8 min.[fo+9kHz]	8 min.[fo-9kHz]	5.0 max.	3000	1
PFWLA450KP2A-B0	450 ±2.0kHz	4.5 ±1.5kHz	19 min.[fo+9kHz]	19 min.[fo-9kHz]	7.0 max.	3000	2
PFWLA450KS2A-B0	450 ±2.0kHz	5.5 ±1.5kHz	17 min.[fo+9kHz]	17 min.[fo-9kHz]	6.0 max.	3000	2

Insertion Loss: at minimum loss point
Center frequency (fo) is defined by the center of 3dB bandwidth.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

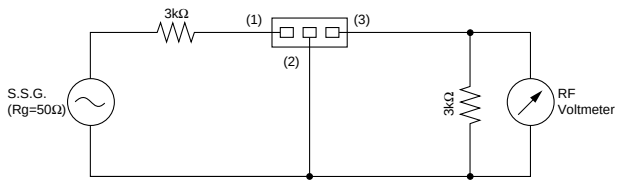
■ Recommended IFT

Item \ Type	7×7mm IFT			5×5mm IFT		
Winding Specification	(1)—(2)	(2)—(3)	(4)—(6)	(1)—(2)	(2)—(3)	(4)—(6)
S(3) (2) (1) (4)S (6) (Bottom view)	85T	67T	23T	84T	98T	33T
No load Qu	90			65		
Tuning Capacitance	180pF			180pF		

• Maching of CERAFIL®PFWLA series with IFT is decided by the IFT secondary side impedance, |Z2|. Set the |Z2| at about 4.2kΩ.

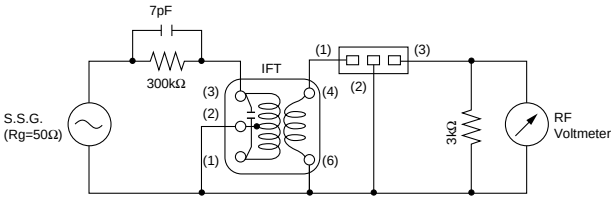
■ Test Circuit (CERAFIL® Only)

PFSLA/PFWLA Series



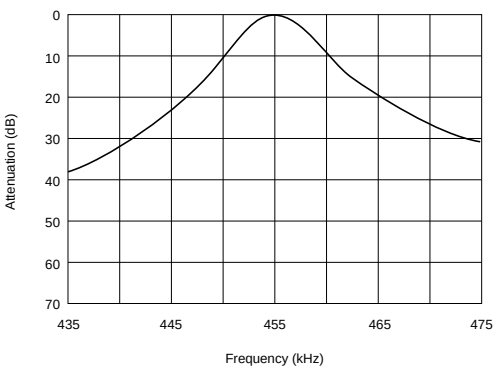
■ Test Circuit (CERAFIL® with IFT)

PFSLA/PFWLA Series

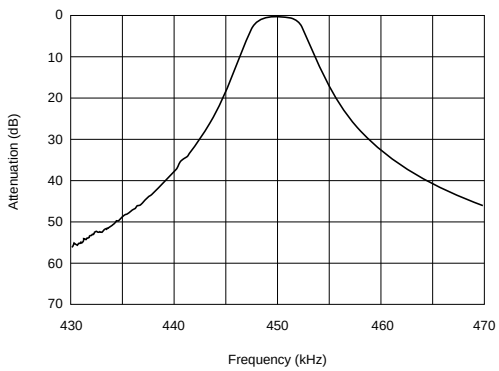


■ Frequency Characteristics

IFT+PFSLA455KP2A-B0

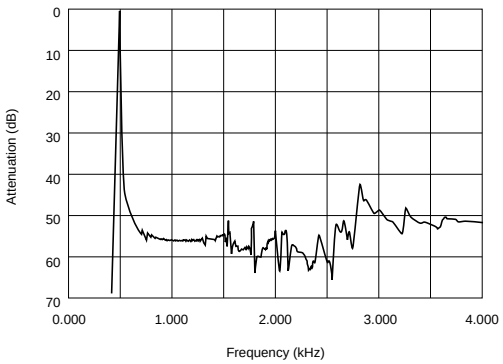


IFT+PFWLA450KS2A-B0

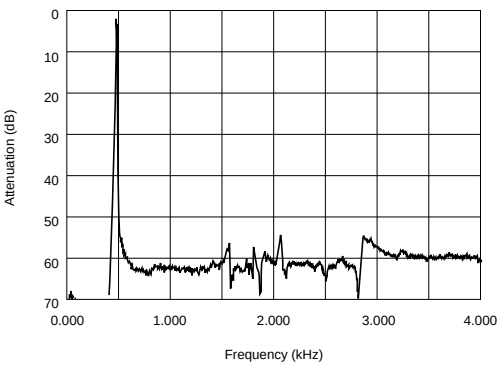


■ Frequency Characteristics (Spurious)

IFT+PFSLA455KP2A-B0



IFT+PFWLA450KS2A-B0



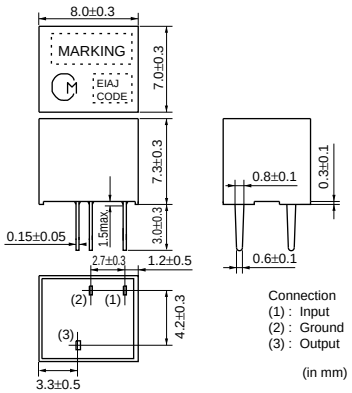
CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

CERAFIL® 455kHz SFPLA/CFWLA Series

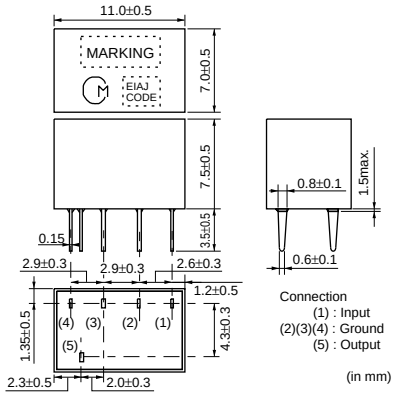
■ Features

SFPLA/CFWLA series for AM use is one of the most recommendable intermediate filters, having such distinctive features as high selectivity, high stability, high attenuation, and adjustment-free operation. Additionally its easy matching with IC helps create an easy circuit design.
This is the most recommendable for car-stereo and all band radio with high attenuation.

SFPLA Series



CFWLA Series

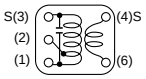


20

Part Number	Center Frequency (fo) (kHz)	6dB Bandwidth (kHz)	Selectivity (+) (dB)	Selectivity (-) (dB)	Insertion Loss (dB)	Input/Output Impedance (ohm)	Element
SFPLA450KJ1A-B0	450 ±1.0kHz	fn±2.0 min.	40 min.[fn+7.5kHz]	40 min.[fn-7.5kHz]	6.0 max.	2000	4
SFPLA450KH1A-B0	450 ±1.0kHz	fn±3.0 min.	40 min.[fn+9kHz]	40 min.[fn-9kHz]	6.0 max.	2000	4
CFWLA450KJFA-B0	450 (fn)	fn±2.0 min.	50 min.[fn+7.5kHz]	50 min.[fn-7.5kHz]	7.0 max.	2000	6
CFWLA450KHFA-B0	450 (fn)	fn±3.0 min.	50 min.[fn+9kHz]	50 min.[fn-9kHz]	6.0 max.	2000	6

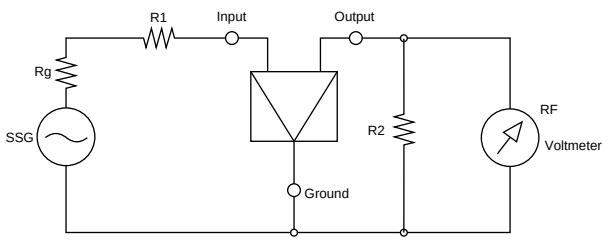
Insertion Loss: at minimum loss point
Center frequency (fo) is defined by the center of 6dB bandwidth.
(fn) means nominal center frequency (450kHz).
For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Recommended IFT (7x7)

Item \ Type	SFPLA/CFULA/CFWLA		
Winding Specification	(1)—(2)	(2)—(3)	(4)—(6)
 (Bottom view)	60T	125T	28T
No load Qu	40		
Tuning Capacitance	180pF		

• Matching of CERAFIL®SFPLA/CFULA/CFWLA series with IFT is decided by the Qu of IFT and IFT secondary side impedance, |Z2|. Set the Qu at about 40 because a Qu value which is too high (e.g.,90) may produce ripple in the waveform. It is recommended to match the impedance of |Z2| with that of the CERAFIL®.

■ Test Circuit



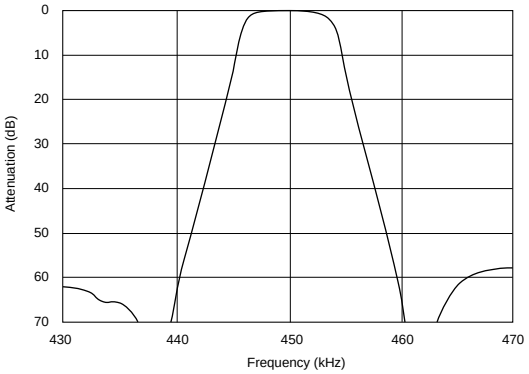
Rg+R1 =R2 : Input/Output Impedance

Continued on the following page.

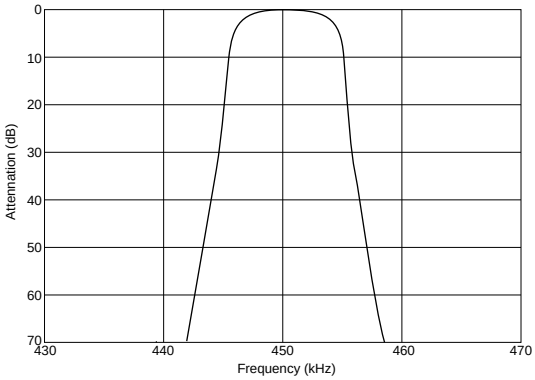
Continued from the preceding page.

■ Frequency Characteristics

IFT+SFPLA450KH1A-B0

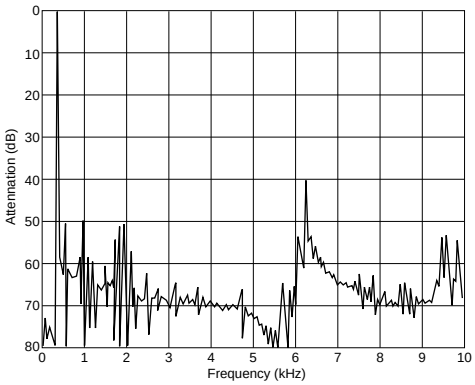


IFT+CFWLA450KHFA-B0

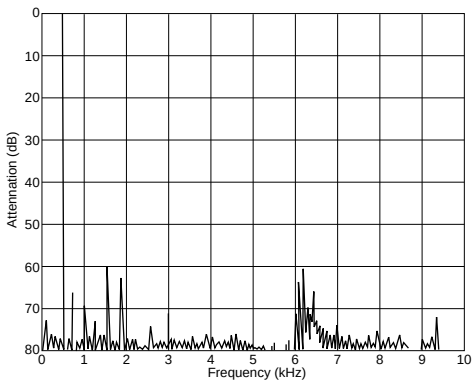


■ Frequency Characteristics (Spurious)

IFT+SFPLA450KH1A-B0



IFT+CFWLA450KHFA-B0



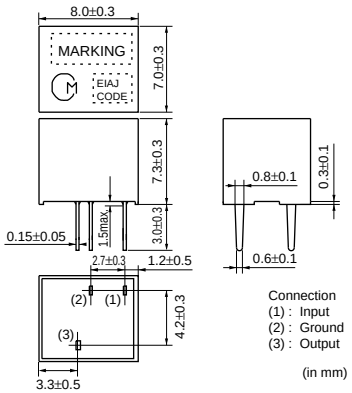
CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

CERAFIL® 455kHz for AM Stereo Wide Bandwidth Type SFPLA/CFWLA/CFULA Series

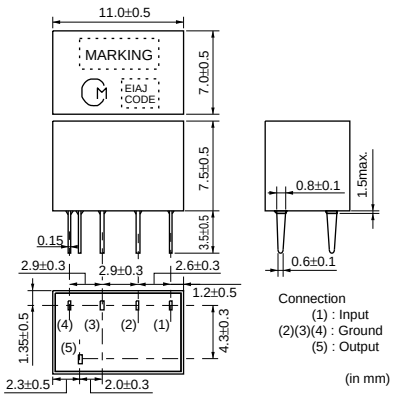
■ Features

SFPLA/CFWLA/CFULA series for AM use is one of the most recommendable intermediate filters, having such distinctive features as high selectivity, high stability, high attenuation, and adjustment-free operation. Additionally its easy matching with IC helps create an easy circuit design.
Especially, CFULA/CFWLA_Y series is the frequency fidelity in the high sound area of an AM stereo will be improved with wide band, flat group delay time characteristics.

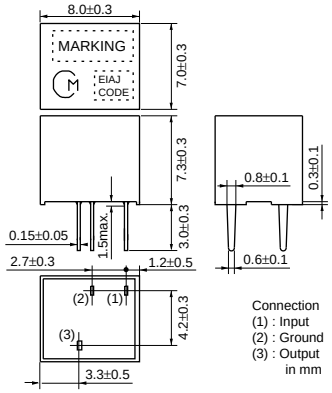
SFPLA Series



CFWLA Series



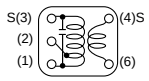
CFULA Series



Part Number	Center Frequency (fo) (kHz)	6dB Bandwidth (kHz)	Selectivity (+) (dB)	Selectivity (-) (dB)	Insertion Loss (dB)	GDT 20μsec. Bandwidth (kHz)	Input/Output Impedance (ohm)	Element
SFPLA450KG1A-B0	450 ±1.0kHz	fn±4.5 min.	30 min.[fn+9kHz]	30 min.[fn-9kHz]	6.0 max.	-	2000	4
SFPLA450KF1A-B0	450 ±1.0kHz	fn±6.0 min.	40 min.[fn+12.5kHz]	40 min.[fn-12.5kHz]	6.0 max.	-	2000	4
SFPLA450KE1A-B0	450 ±1.0kHz	fn±7.5 min.	40 min.[fn+15kHz]	40 min.[fn-15kHz]	6.0 max.	-	1500	4
SFPLA450KD1A-B0	450 ±1.0kHz	fn±10.0 min.	40 min.[fn+20kHz]	40 min.[fn-20kHz]	4.0 max.	-	1500	4
CFWLA450KGFA-B0	450 (fn)	fn±4.5 min.	50 min.[fn+10kHz]	50 min.[fn-10kHz]	6.0 max.	-	2000	6
CFWLA450KFFA-B0	450 (fn)	fn±6.0 min.	50 min.[fn+12.5kHz]	50 min.[fn-12.5kHz]	6.0 max.	-	2000	6
CFWLA450KEFA-B0	450 (fn)	fn±7.5 min.	50 min.[fn+15kHz]	50 min.[fn-15kHz]	6.0 max.	-	1500	6
CFWLA450KDFA-B0	450 (fn)	fn±10.0 min.	50 min.[fn+20kHz]	50 min.[fn-20kHz]	4.0 max.	-	1500	6
CFWLA450KG1Y-B0	450 ±1.0kHz	fn±4.5 min.	50 min.[fn+15kHz]	50 min.[fn-15kHz]	11.0 max.	fn±4.0	2000	6
CFULA450KG1Y-B0	450 ±1.0kHz	fn±4.5 min.	40 min.[fn+15kHz]	40 min.[fn-15kHz]	10.0 max.	fn±4.5	2000	4
CFWLA450KF1Y-B0	450 ±1.0kHz	fn±6.0 min.	50 min.[fn+17.5kHz]	50 min.[fn-17.5kHz]	10.0 max.	fn±5.0	2000	6
CFULA450KF1Y-B0	450 ±1.0kHz	fn±6.0 min.	40 min.[fn+17.5kHz]	40 min.[fn-17.5kHz]	9.0 max.	fn±6.0	2000	4
CFWLA450KD1Y-B0	450 ±1.0kHz	fn±10.0 min.	50 min.[fn+25kHz]	50 min.[fn-25kHz]	8.0 max.	fn±8.0	1500	6
CFULA450KD1Y-B0	450 ±1.0kHz	fn±10.0 min.	40 min.[fn+25kHz]	40 min.[fn-25kHz]	7.0 max.	fn±9.0	1500	4

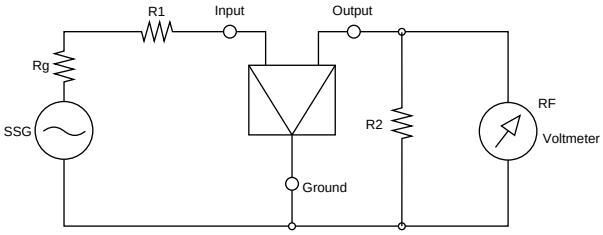
Insertion Loss: at minimum loss point
Center frequency (fo) is defined by the center of 6dB bandwidth.
(fn) means nominal center frequency (450kHz).
For safety purposes, connect the output of filters to the IF amplifier through a D.C. blocking capacitor. Avoid applying a direct current to the output of ceramic filters.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Recommended IFT (7x7)

Item \ Type	SFPLA/CFULA/CFWLA		
Winding Specification	(1)—(2)	(2)—(3)	(4)—(6)
 (Bottom view)	60T	125T	28T
No load Qu	40		
Tuning Capacitance	180pF		

• Matching of CERAFIL®SFPLA/CFULA/CFWLA series with IFT is decided by the Qu of IFT and IFT secondary side impedance, |Z2|. Set the Qu at about 40 because a Qu value which is too high (e.g.,90) may produce ripple in the waveform. It is recommended to match the impedance of |Z2| with that of the CERAFIL®.

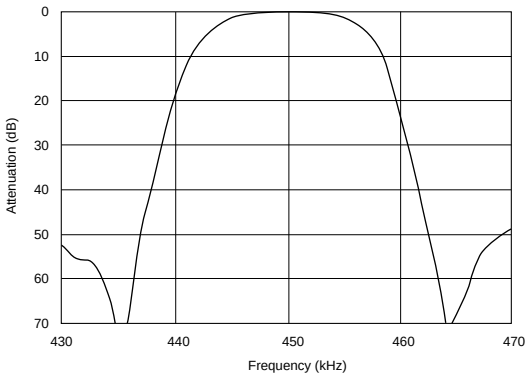
■ Test Circuit



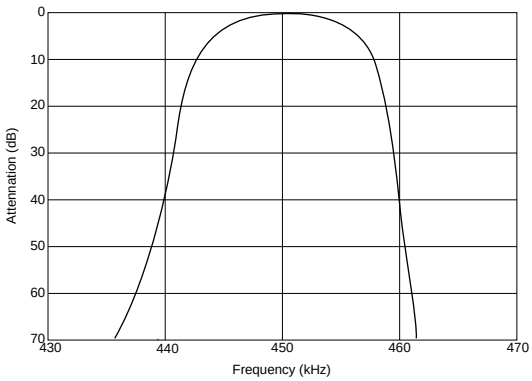
Rg+R1 =R2 : Input/Output Impedance

■ Frequency Characteristics

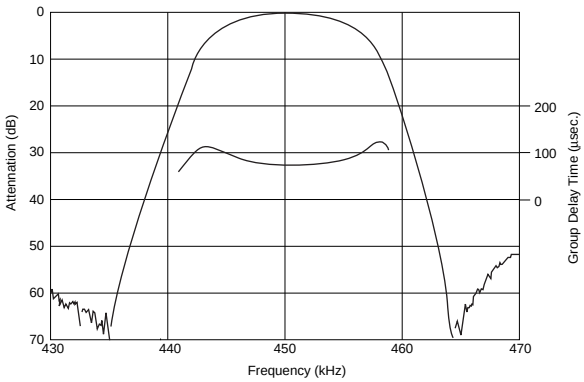
IFT+SFPLA450KF1A-B0



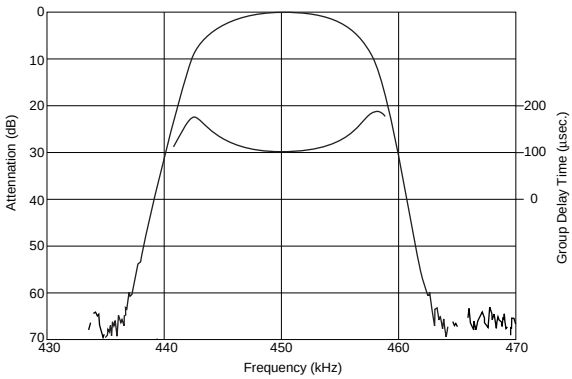
IFT+CFWLA450KFFA-B0



IFT+CFULA450KF1Y-B0



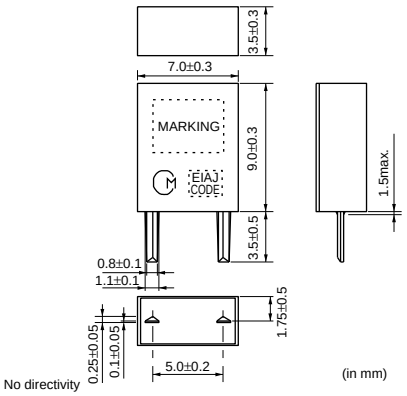
IFT+CFWLA450KF1Y-B0



CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

CERAFIL® 455kHz for Search-stop Signal Detection

BFULA series are narrow bandwidth filters. This filter is used in the application which detects the carrier peak with a narrow bandwidth amplifier, or an electronic tuner as a stop signal detector.



■ Features

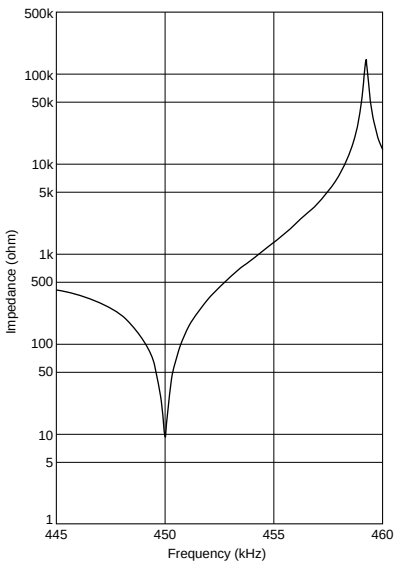
Most suitable for IC Station Detectors (SD).

Part Number	Resonant Frequency (Fr) (kHz)	Delta F (Fa-Fr) (kHz)	Resonant Resistance (ohm)	Capacitance (pF)
BFULA450KC-B0	450 ±1.0kHz	14.0 ±2.0kHz	20 max.	360 ±20%
BFULA450KC004-B0	450 ±0.8kHz	9.0 ±2.0kHz	30 max.	360 ±20%
BFULA450KK003-B0	450 ±1.0kHz	27.5 ±4.5kHz	30 max.	550 ±20%

fa-fr means difference between the anti-resonant frequency and the resonant frequency.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

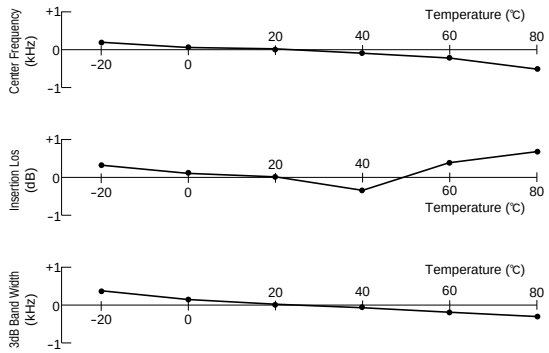
■ Impedance Characteristics

BFULA450KC004-B0

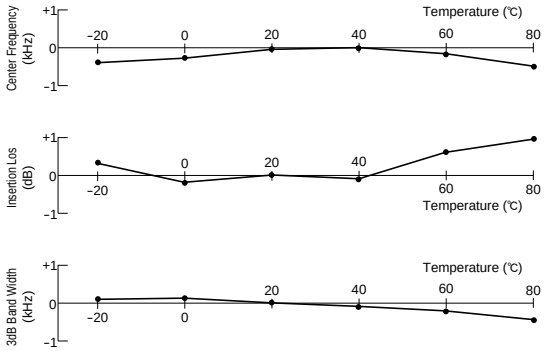


CERAFIL® 455kHz SF/PF Series Temperature Characteristics

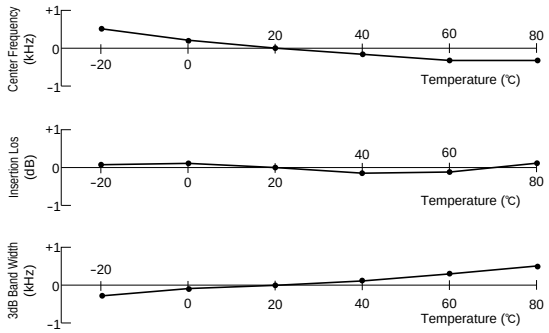
■ SFZLA455KS2A-B0



■ SFPLA450KH1A-B0



■ PFWLA450KS2A-B0

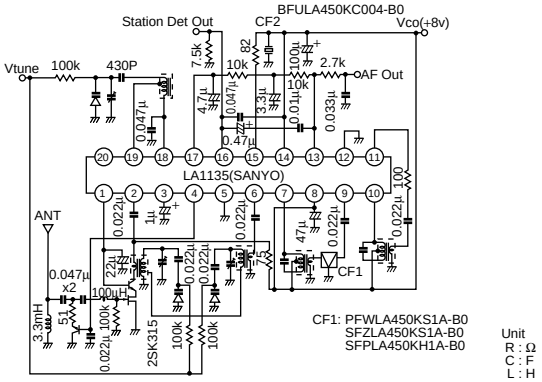


22

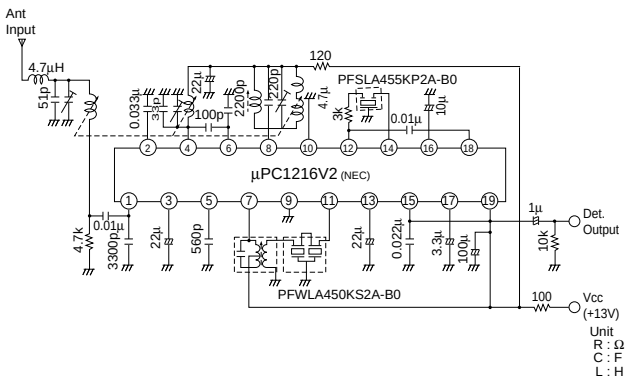
CERAFIL® 455kHz SF/PF/BF Series Application Circuit

■ Car Radio

SFPLA450KH1A-B0/BFULA450KC004-B0

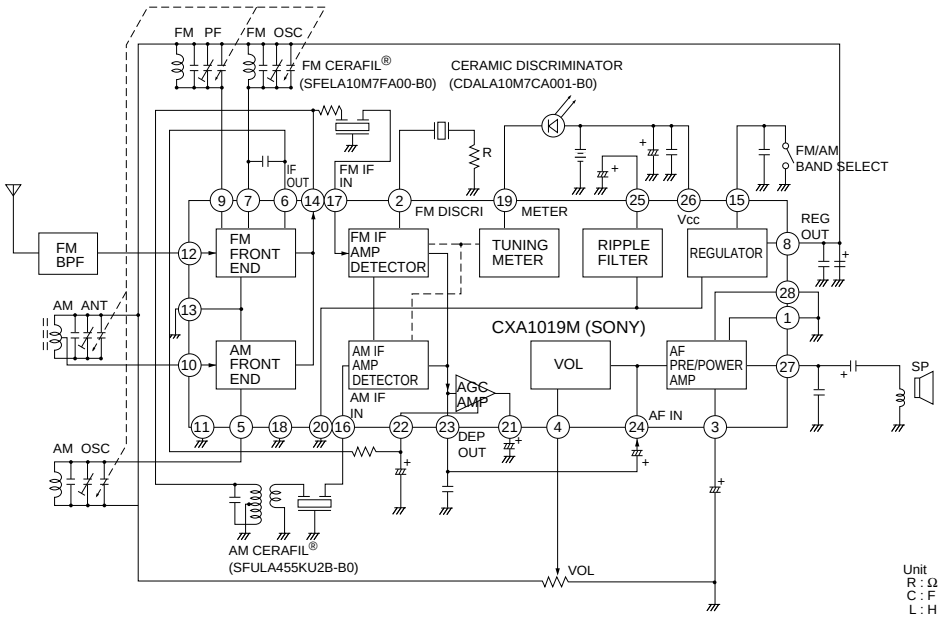


PFSLA455KP2A-B0/PFWLA450KS2A-B0



■ Portable Radio

SFULA455KU2B-B0



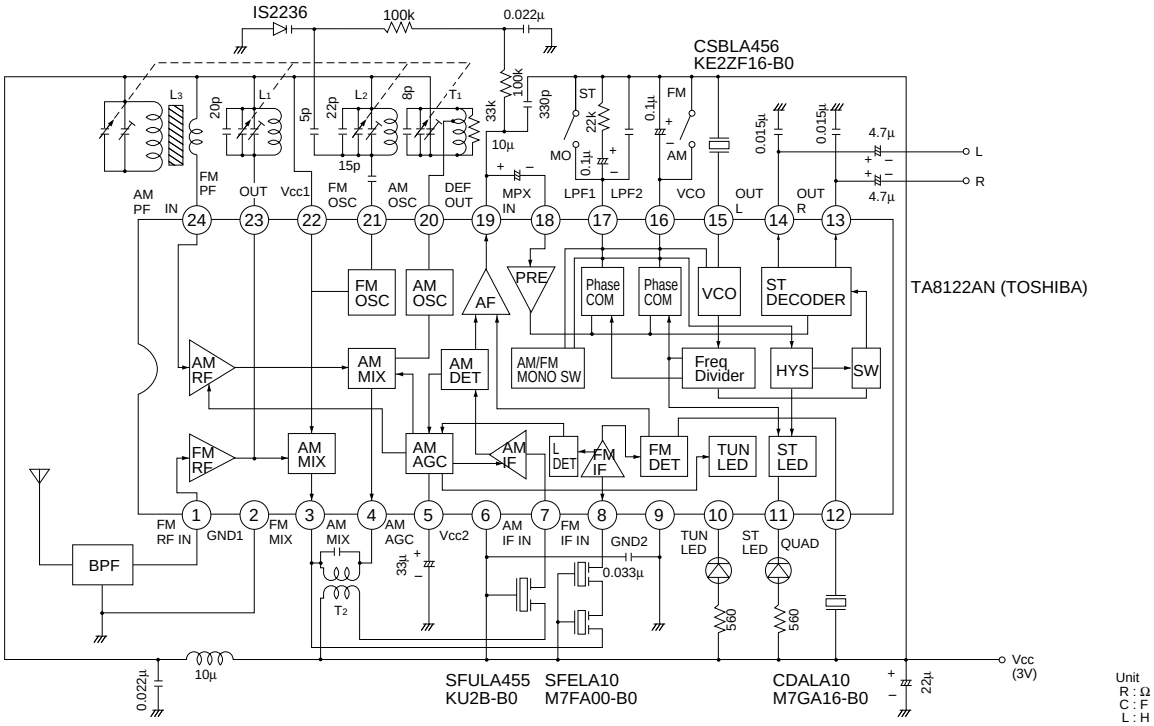
Continued on the following page.

CERAFIL® 455kHz SF/PF/BF Series Application Circuit

Continued from the preceding page.

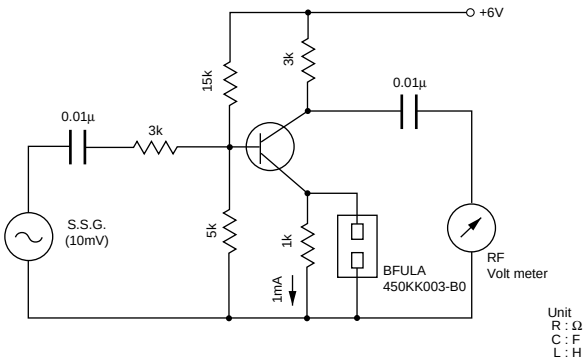
■ Portable Radio

SFULA455KU2B-B0



■ In Tr Circuit

BFULA450KK003-B0

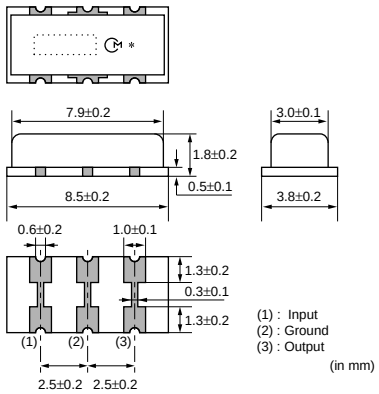


22

CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

Ceramic Trap 4.5-6.5MHz Chip Type TPSKA Series

SMD ceramic trap TPSKA_B is small and thin SMD trap sealed with a metal cap. Recommended for LCD-TVs, and small and thin tuners.



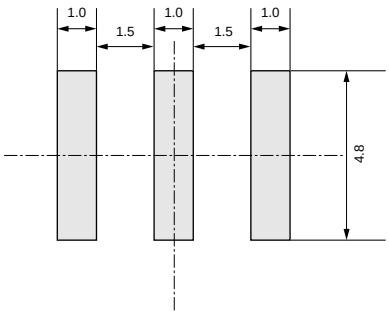
■ Features

1. High attenuation and high performance group delay time
2. Small and thin pakage
3. Reflow-solderable

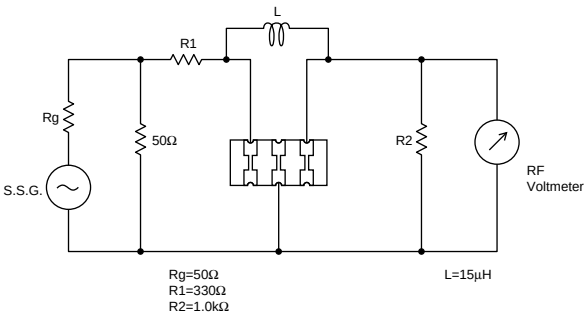
Part Number	Nominal Center Frequency (fn1) (MHz)	Attenuation (at fn1) (dB)	30dB Attenuation BW (fn1) (kHz)
TPSKA4M50B00-R1	4.500	35 min.	50 min.

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

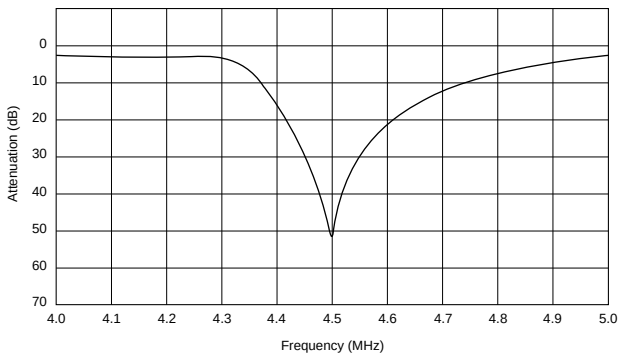
■ Standard Land Pattern Dimensions



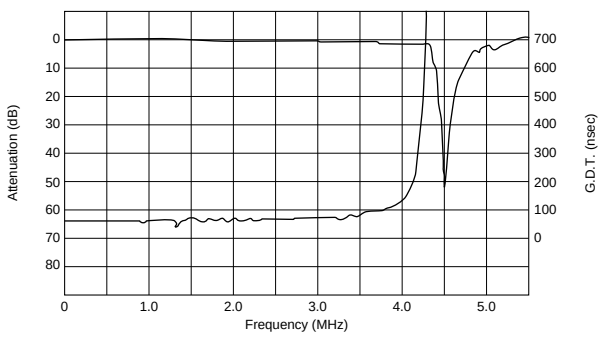
■ Test Circuit



■ Frequency Characteristics



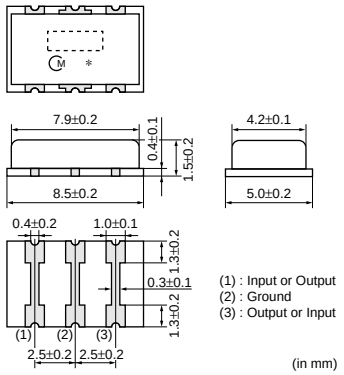
■ Frequency Characteristics (Spurious)



CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

Ceramic Trap 4.5-6.5MHz Chip Type Double Traps TPWKA Series

SMD ceramic trap TPWKA is small and thin SMD trap sealed with a metal cap. Recommended for LCD-TVs, and small and thin tuners.
This series consist of 2 wafers with 2 trap frequencies. Recommended for Multi standard set.



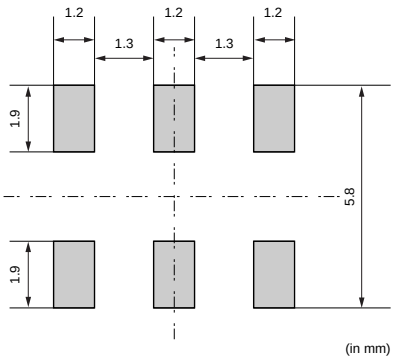
■ Features

1. Good performance of attenuation
2. Small and thin package
3. Reflow-solderable

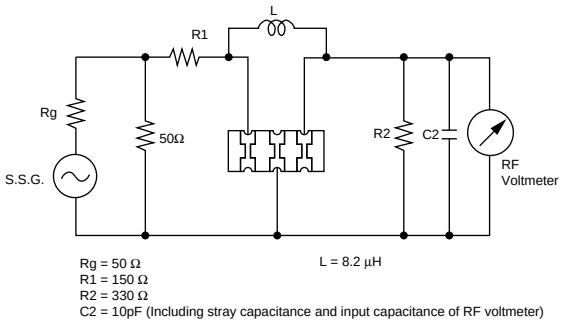
Part Number	Nominal Center Frequency (fn1) (MHz)	Nominal Center Frequency (fn2) (MHz)	Attenuation (at fn1) (dB)	Attenuation (at fn2) (dB)	30dB Attenuation BW (fn1) (kHz)
TPWKA5M50B04-R1	5.500	5.742	30 min.	30 min.	50 min.

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

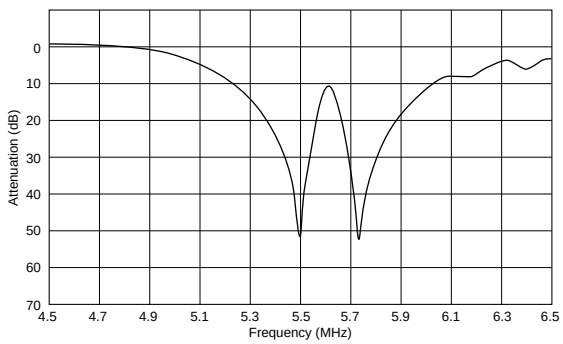
■ Standard Land Pattern Dimensions



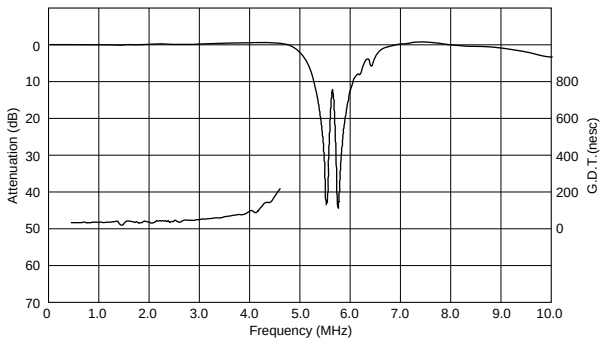
■ Test Circuit



■ Frequency Characteristics



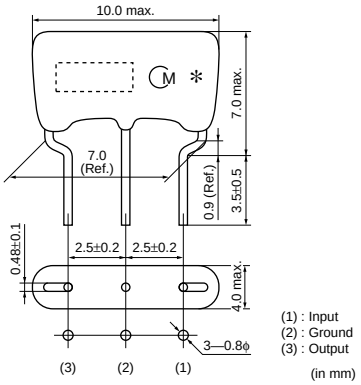
■ Frequency Characteristics (Spurious)



CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

Ceramic Trap 4.5-6.5MHz Standard Lead Type TPSRA Series

As part of the environment protection activity, solder for terminal plating and terminal-element connection inside of ceramic filter TPSRA series contain no lead (Pb).
This series consist of two trap element on one wafer.
Suitable for the sound IF trap of CTV/VCR.



■ Features

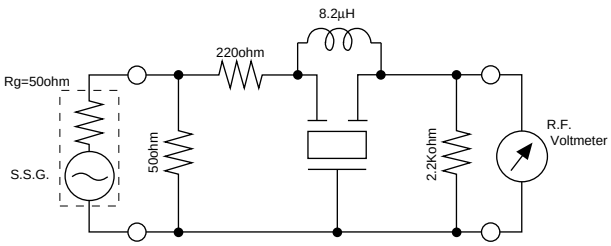
1. Good performance of attenuation
2. Shape factor can be changed by the value of Inductor "L".
3. Three-terminals type
4. Low profile (H=7.0mm max.)
5. Lead dimension:
   Improved mounting reliability (cut & clinch) due to round terminal.

Part Number	Nominal Center Frequency (fn1) (MHz)	Attenuation (at fn1) (dB)	30dB Attenuation BW (fn1) (kHz)
TPSRA4M50B00-B0	4.500	35 min.	50 min.
TPSRA4M50C00-B0	4.500	30 min.	-
TPSRA5M50B00-B0	5.500	35 min.	70 min.
TPSRA5M74B00-B0	5.742	35 min.	70 min.
TPSRA6M00B00-B0	6.000	35 min.	70 min.
TPSRA6M50B00-B0	6.500	35 min.	70 min.

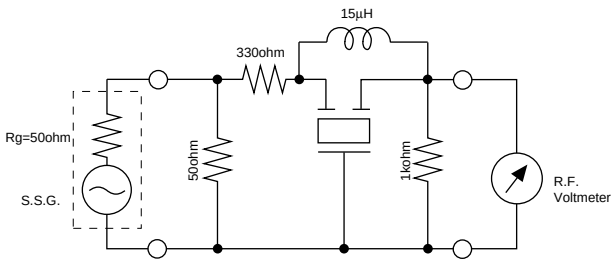
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Test Circuit

TPSRA4M50B00-B0



TPSRA4M50C00-B0

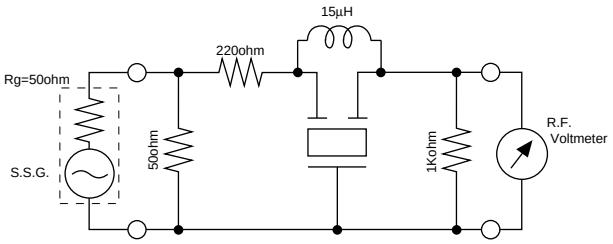


Continued on the following page.

Continued from the preceding page.

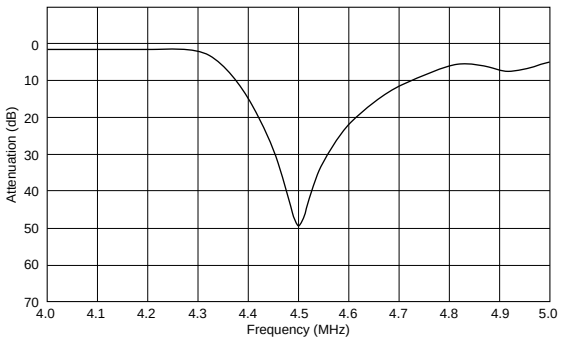
■ Test Circuit

TPSRA5M50/5M74/6M00/6M50B00-B0

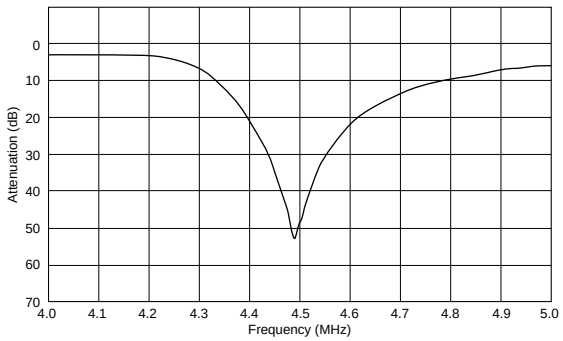


■ Frequency Characteristics

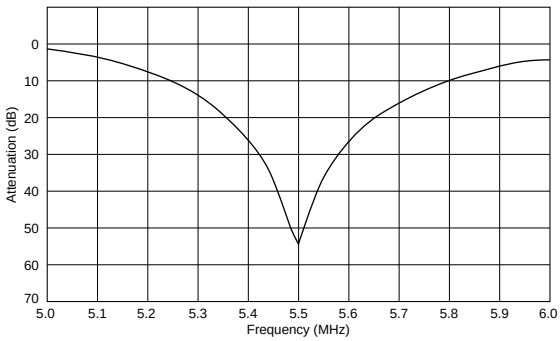
TPSRA4M50B00-B0



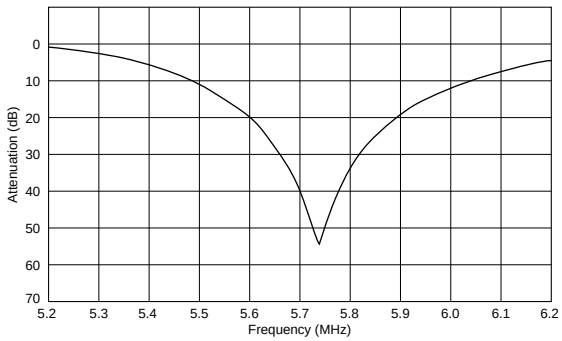
TPSRA4M50C00-B0



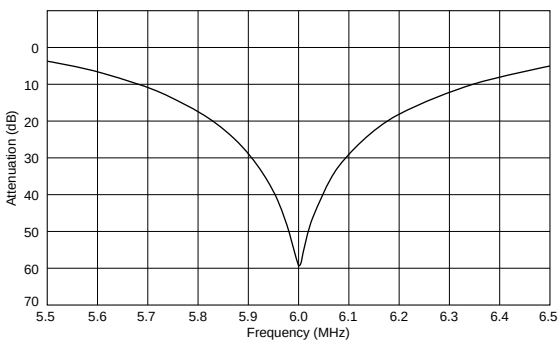
TPSRA5M50B00-B0



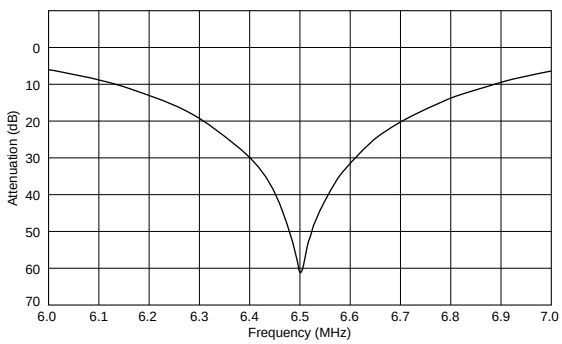
TPSRA5M74B00-B0



TPSRA6M00B00-B0



TPSRA6M50B00-B0

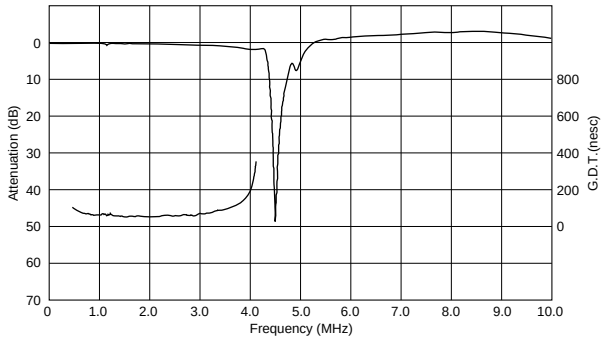


Continued on the following page.

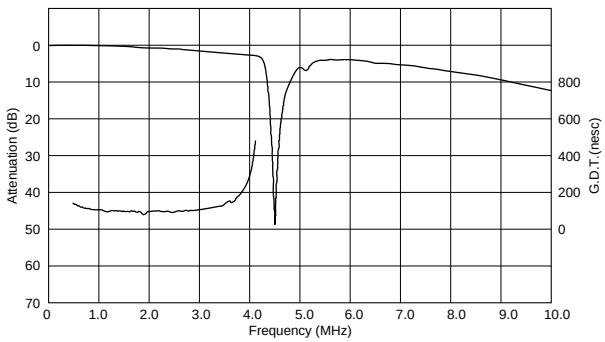
Continued from the preceding page.

■ Frequency Characteristics (Spurious)

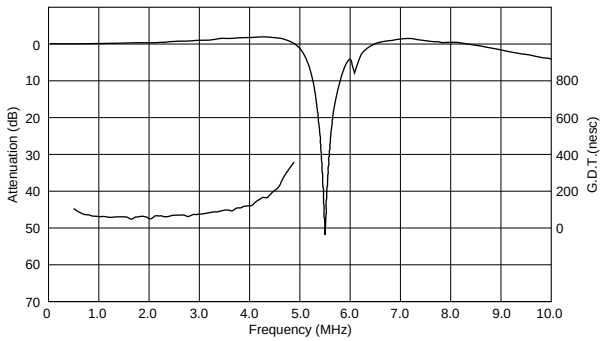
TPSRA4M50B00-B0



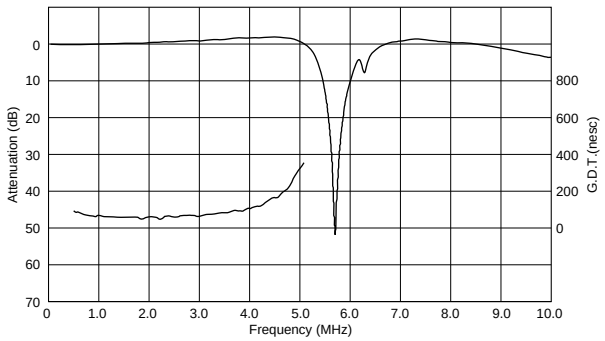
TPSRA4M50C00-B0



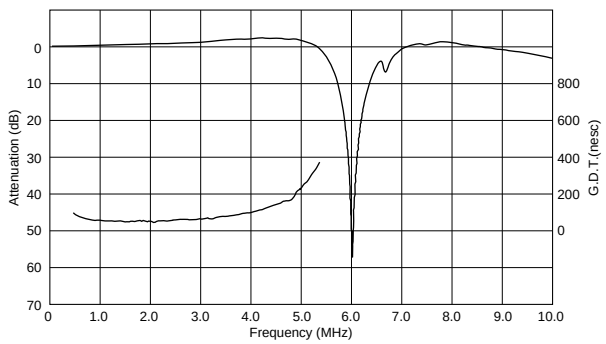
TPSRA5M50B00-B0



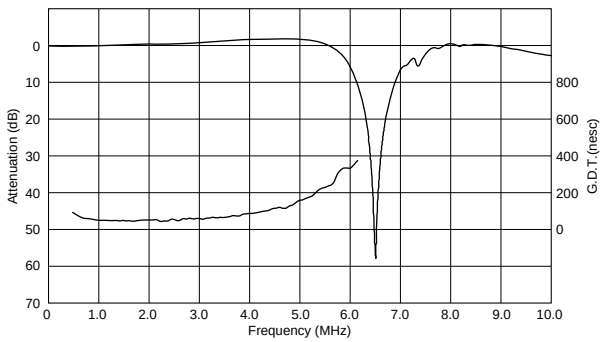
TPSRA5M74B00-B0



TPSRA6M00B00-B0



TPSRA6M50B00-B0

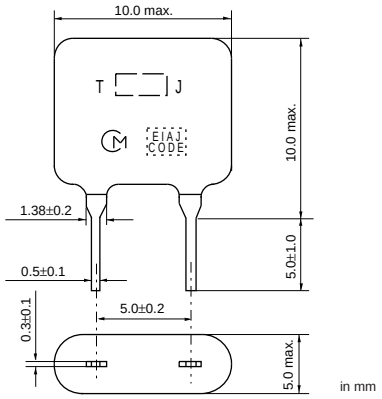


CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

muRata

Ceramic Trap 3.5-6.5MHz Two Lead Type TPSRD Series

Ceramic Trap TPSRD_J series are two-terminals type. Which are recommended for the attenuation of sound IF in B/W TV and the attenuation of chroma signal in Video Camcorder.



in mm

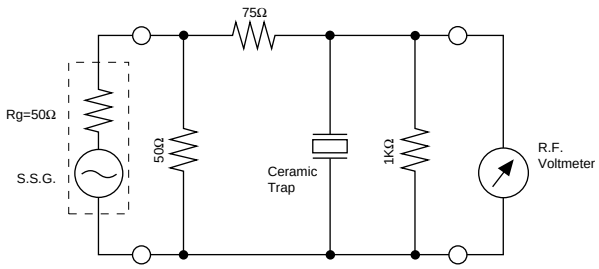
■ Features

1. Small-size, lightweight
2. High performance, durability
3. Easy to design due to two-terminals type

Part Number	Nominal Center Frequency (fn1) (MHz)	Attenuation (at fn1) (dB)	30dB Attenuation BW (fn1) (kHz)
TPSRD3M58J00-B0	3.580	20 min.	20 min.[20dB Att.BW]
TPSRD4M43J00-B0	4.430	20 min.	40 min.[20dB Att.BW]
TPSRD4M50J00-B0	4.500	20 min.	30 min.[20dB Att.BW]
TPSRD5M50J00-B0	5.500	20 min.	30 min.[20dB Att.BW]
TPSRD6M00J00-B0	6.000	20 min.	40 min.[20dB Att.BW]
TPSRD6M50J00-B0	6.500	20 min.	40 min.[20dB Att.BW]

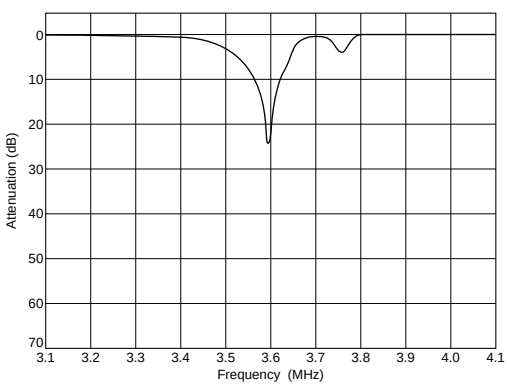
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Test Circuit

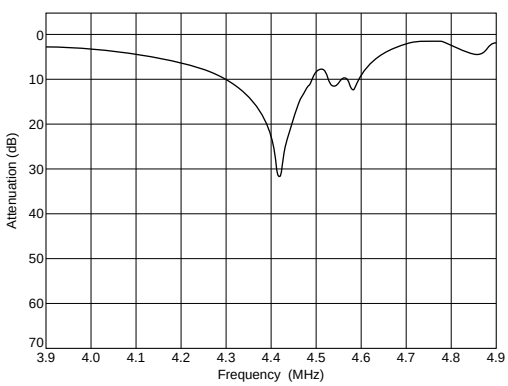


■ Frequency Characteristics

TPSRD3M58J00-B0



TPSRD4M43J00-B0

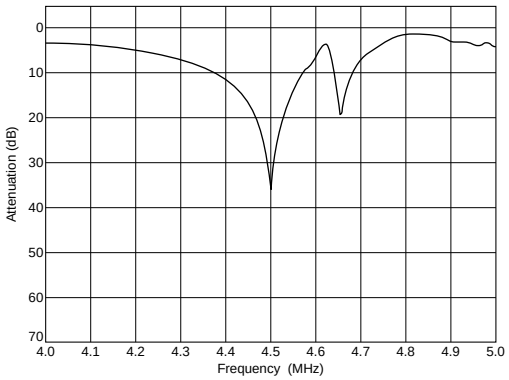


Continued on the following page.

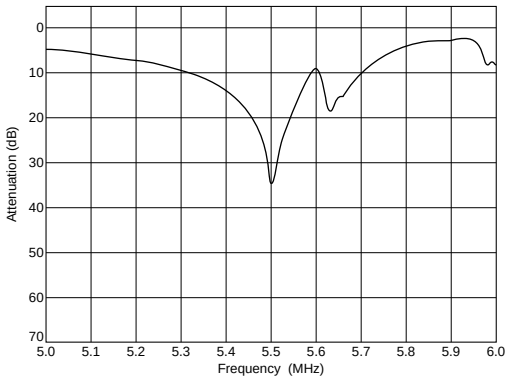
Continued from the preceding page.

■ Frequency Characteristics

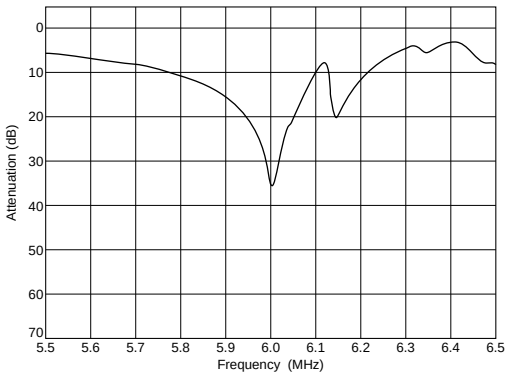
TPSRD4M50J00-B0



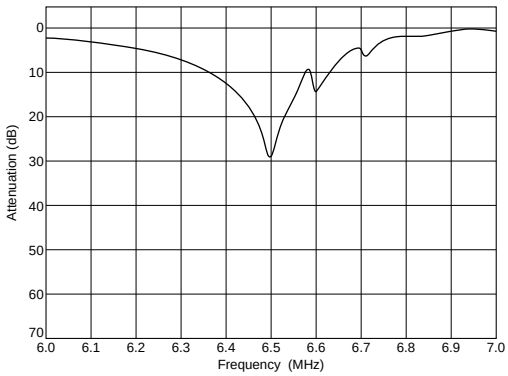
TPSRD5M50J00-B0



TPSRD6M00J00-B0

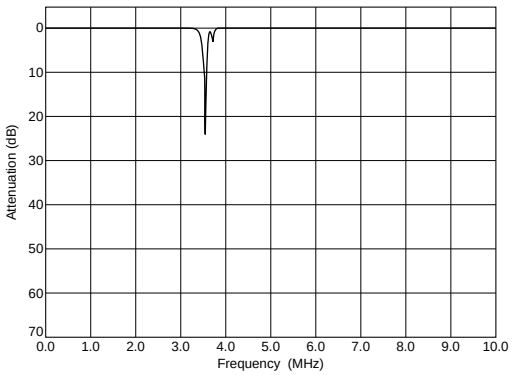


TPSRD6M50J00-B0

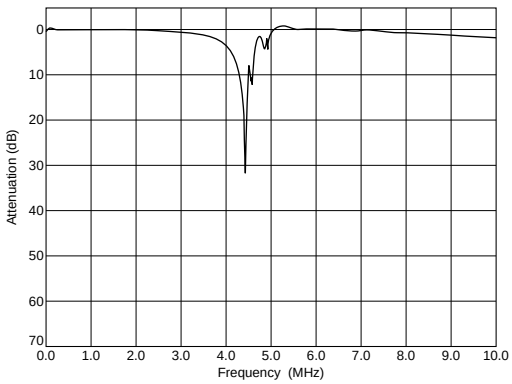


■ Frequency Characteristics (Spurious)

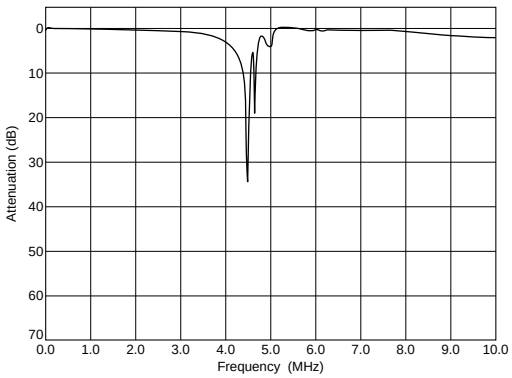
TPSRD3M58J00-B0



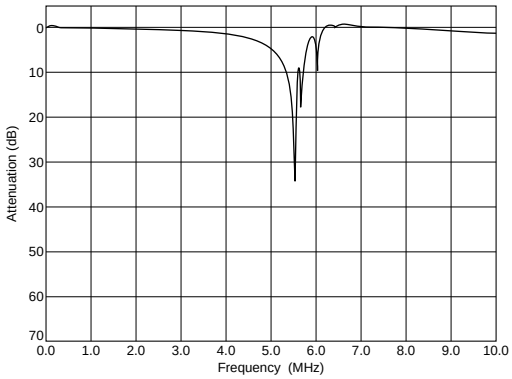
TPSRD4M43J00-B0



TPSRD4M50J00-B0



TPSRD5M50J00-B0

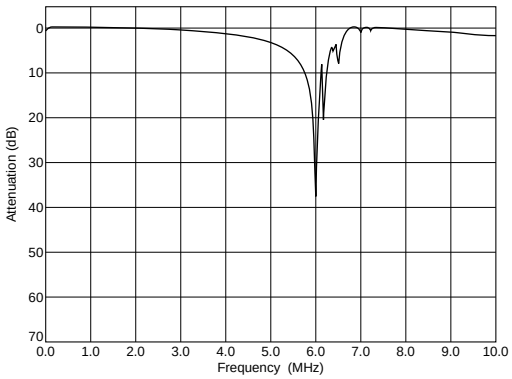


Continued on the following page.

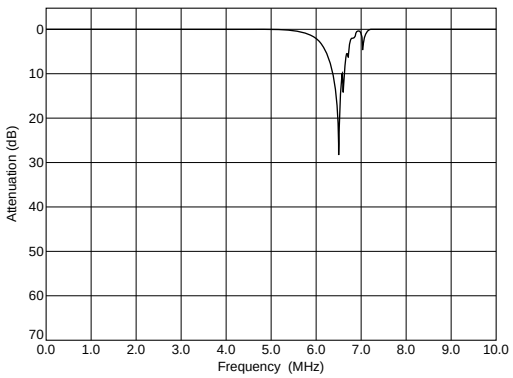
Continued from the preceding page.

■ Frequency Characteristics (Spurious)

TPSRD6M00J00-B0



TPSRD6M50J00-B0

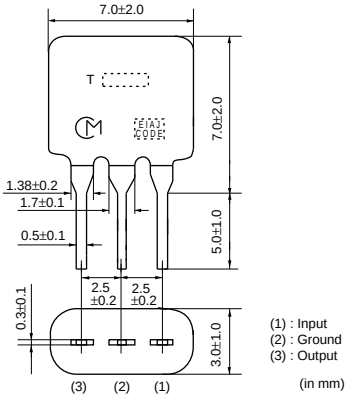


CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

Ceramic Trap 3.5-6.5MHz for 2ch Sound TV in Germany TPSRD Series

Ceramic trap TPSRD_W series has same structure as TPSRD_B series. But they can trap two individual frequencies at one time. Recommended for two channel multi-sound TV systems.

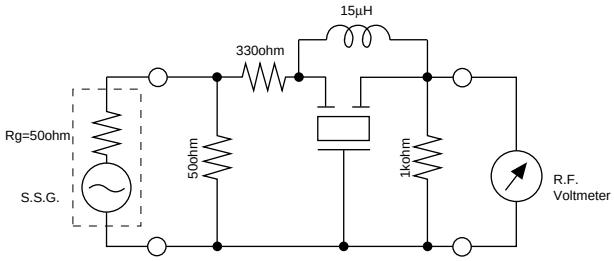
■ Features
1. Space saving
2. Three-terminals type



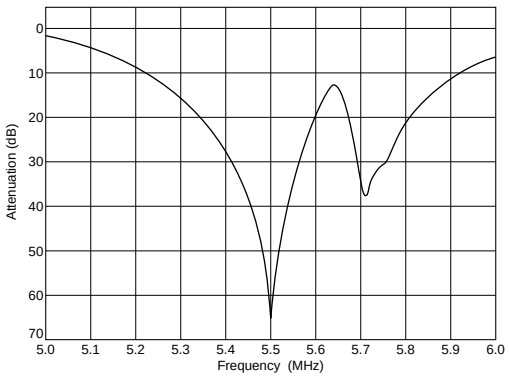
Part Number	Nominal Center Frequency (fn1) (MHz)	Nominal Center Frequency (fn2) (MHz)	Attenuation (at fn1) (dB)	Attenuation (at fn2) (dB)	30dB Attenuation BW (fn1) (kHz)
TPSRD5M50W00-B0	5.500	5.742	32 min.	25 min.	70 min.

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

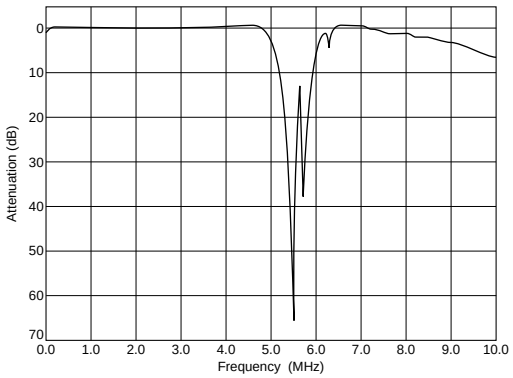
■ Test Circuit



■ Frequency Characteristics



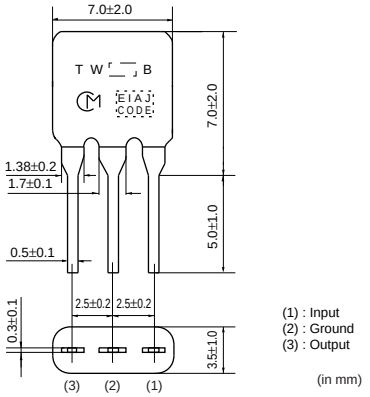
■ Frequency Characteristics (Spurious)



CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

Ceramic Trap 3.5-6.5MHz Double Traps TPWRD Series

Ceramic trap TPWRD_B series consist of two wafers with two trap frequencies. Recommended for Dual standard sets.



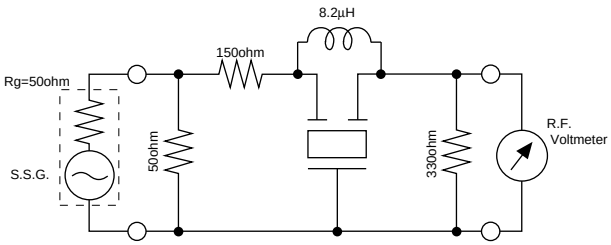
■ Features

1. Good performance of attenuation
2. Small and thin package
3. Three-terminals type

Part Number	Nominal Center Frequency (fn1) (MHz)	Nominal Center Frequency (fn2) (MHz)	Attenuation (at fn1) (dB)	Attenuation (at fn2) (dB)	30dB Attenuation BW (fn1) (kHz)
TPWRD5M50B02-B0	5.500	6.500	30 min.	30 min.	50 min.
TPWRD5M50B03-B0	5.500	6.000	30 min.	30 min.	50 min.
TPWRD5M50B04-B0	5.500	5.742	30 min.	30 min.	50 min.
TPWRD6M00B01-B0	6.000	6.500	30 min.	30 min.	70 min.

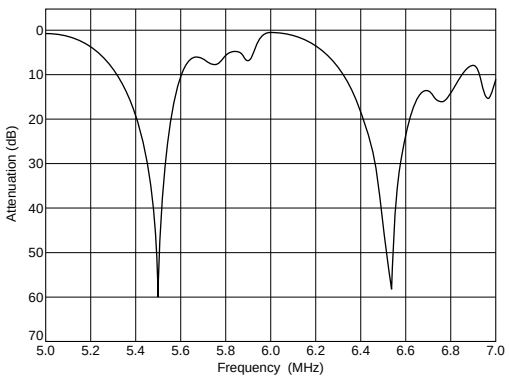
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

■ Test Circuit

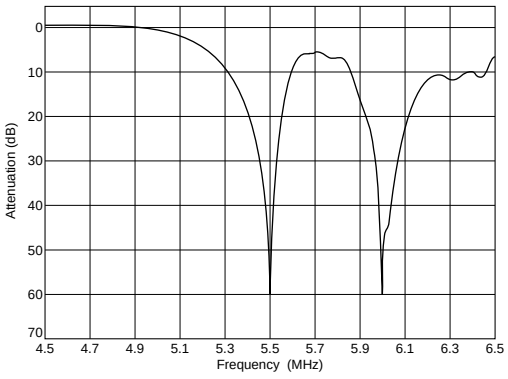


■ Frequency Characteristics

TPWRD5M50B02-B0



TPWRD5M50B03-B0

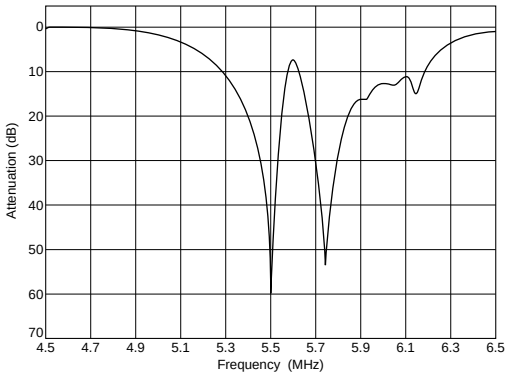


Continued on the following page.

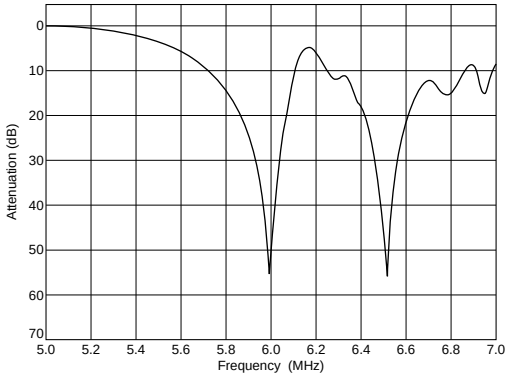
Continued from the preceding page.

■ Frequency Characteristics

TPWRD5M50B04-B0

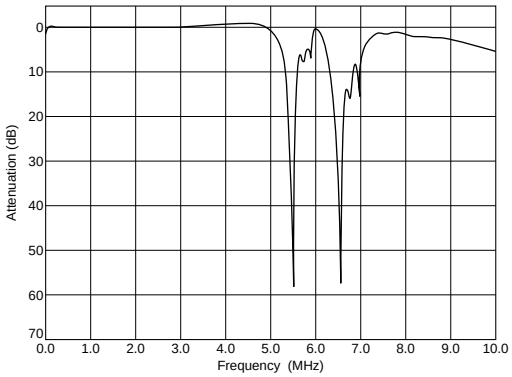


TPWRD6M00B01-B0

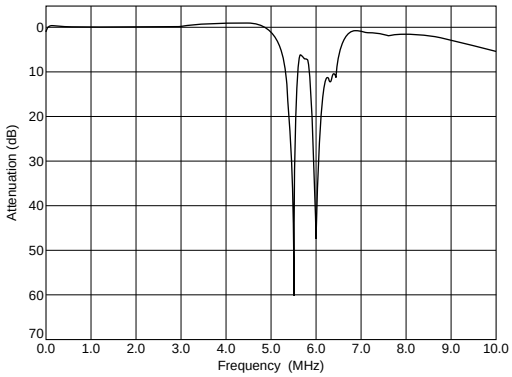


■ Frequency Characteristics (Spurious)

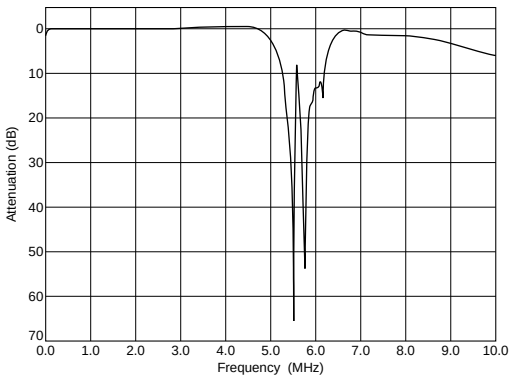
TPWRD5M50B02-B0



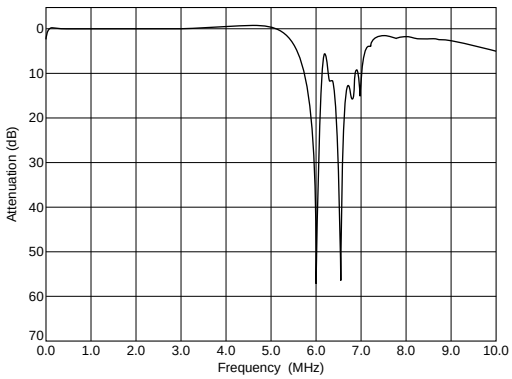
TPWRD5M50B03-B0



TPWRD5M50B04-B0



TPWRD6M00B01-B0



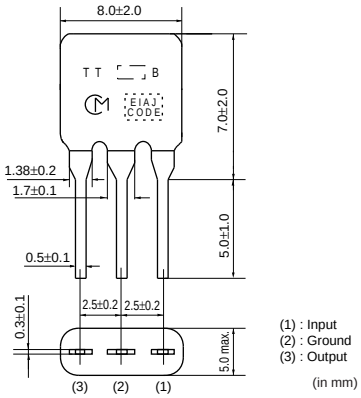
CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

Ceramic Trap 3.5-6.5MHz Triple Traps TPTRD Series

Ceramic trap TPTRD_B series consist of 3 wafers with
3 trap frequencies. Recommended for Multi standard sets.

■ Features

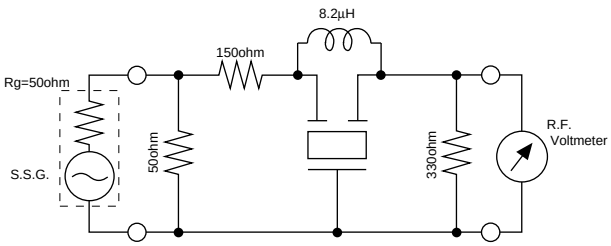
1. Good performance of attenuation
2. Space saving for Multi set
3. Three-terminals type



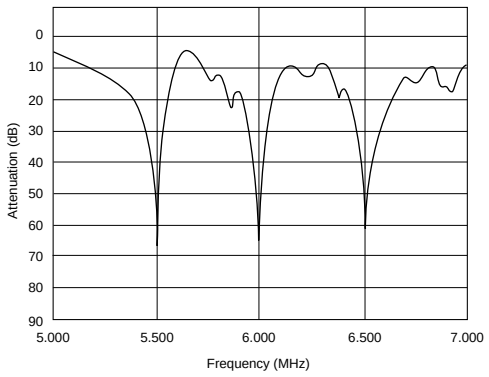
Part Number	Nominal Center Frequency (fn1) (MHz)	Nominal Center Frequency (fn2) (MHz)	Nominal Center Frequency (fn3) (MHz)	Attenuation (at fn1) (dB)	Attenuation (at fn2) (dB)	Attenuation (at fn3) (dB)	30dB Attenuation BW (fn1) (kHz)
TPTRD5M50B01-B0	5.500	6.000	6.500	30 min.	30 min.	30 min.	50 min.

The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

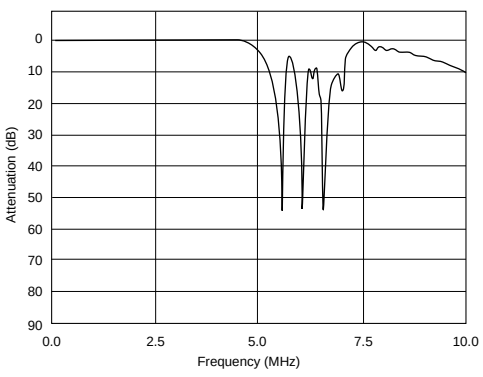
■ Test Circuit



■ Frequency Characteristics



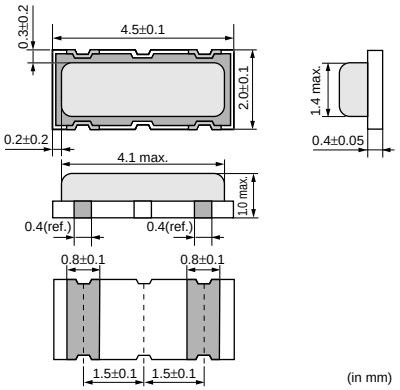
■ Frequency Characteristics (Spurious)



CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

Ceramic Discriminator 10.7MHz Ultra Thin Chip Type CDSCB Series

CDSCB10M7 series forms a resonator on a piezoelectric ceramic substrate. In combination with ICs, this type obtains stable demodulation characteristics in a wide bandwidth.
They have 1.0mm max. thickness and small mounting area (4.5x2.0mm).



■ Features

1. Compact and high reliability and recommended for automotive applications.
2. Can be combined with various ICs. The IC is determined by the last number in the part number.
3. Stable demodulation characteristics can be obtained without adjustment.
4. Stable temperature characteristics
5. Recommended for Pb free soldering

Part Number	Center Frequency (fo) (MHz)	Recovered Audio 3dB BW (kHz)	Recovered Audio Output (mV)	Distortion (%)	IC	Detection Method
CDSCB10M7GA105A-R0	10.700 ±30kHz	220 min.	110 min.	1.5 max.	TEA5757HL	Quadrature
CDSCB10M7GA113-R0	10.700 ±30kHz	300 min.	110 min.	1.0 max.	TA2154FN	Quadrature
CDSCB10M7GA119-R0	10.700 ±30kHz	500 min.	75 min.	1.0 max.	TRF6901	Quadrature
CDSCB10M7GA121-R0	10.700 ±30kHz	390 min.	80 min.	1.0 max.	LV23100V	Quadrature
CDSCB10M7GF072-R0	10.700 (fn)	fn±150 min.	130 min.	2.0 max.	TA31161	Quadrature
CDSCB10M7GF107-R0	10.700 (fn)	fn±80 min.	52 min.	3.0 max.	TA31272F	Quadrature
CDSCB10M7GF109-R0	10.700 (fn)	fn±100 min.	170 min.	3.0 max.	TK14588V	Quadrature

(fn) means nominal center frequency.
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.

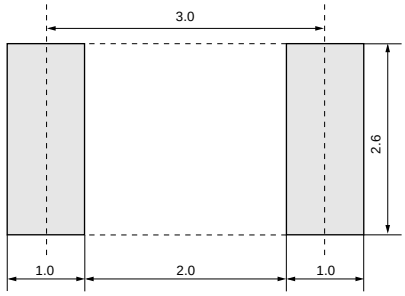
■ Standard Center Frequency Rank Code

CODE	30kHz Step	25kHz Step
D	10.64MHz±30kHz	10.650MHz±25kHz
B	10.67MHz±30kHz	10.675MHz±25kHz
A	10.70MHz±30kHz	10.700MHz±25kHz
C	10.73MHz±30kHz	10.725MHz±25kHz
E	10.76MHz±30kHz	10.750MHz±25kHz
Z	Combination A,B,C,D,E	
M	Combination A,B,C	

Continued on the following page.

Continued from the preceding page.

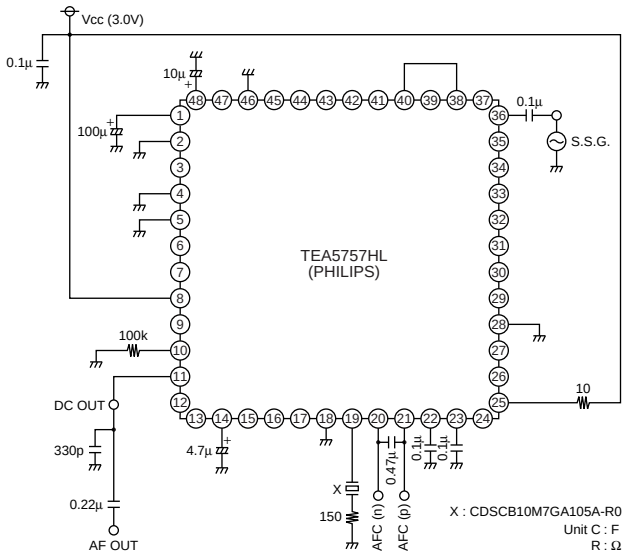
■ Standard Land Pattern Dimensions



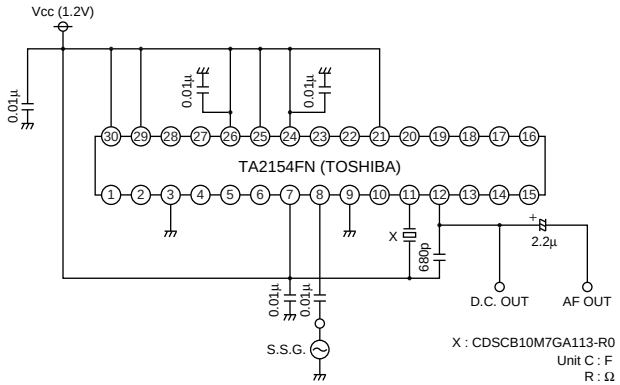
(in mm)

■ Test Circuit

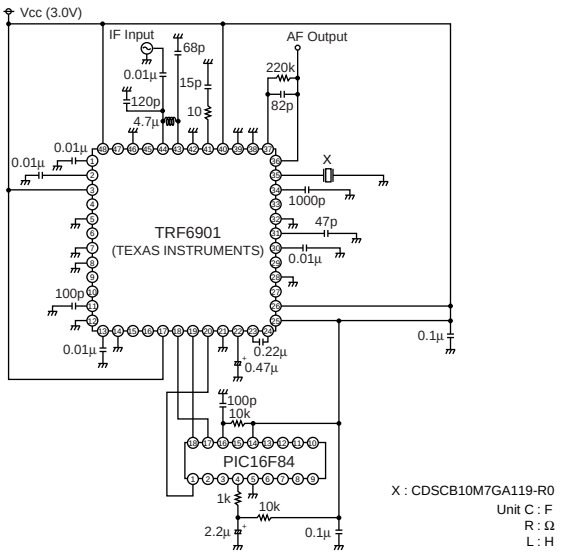
CDSCB10M7GA105A-R0



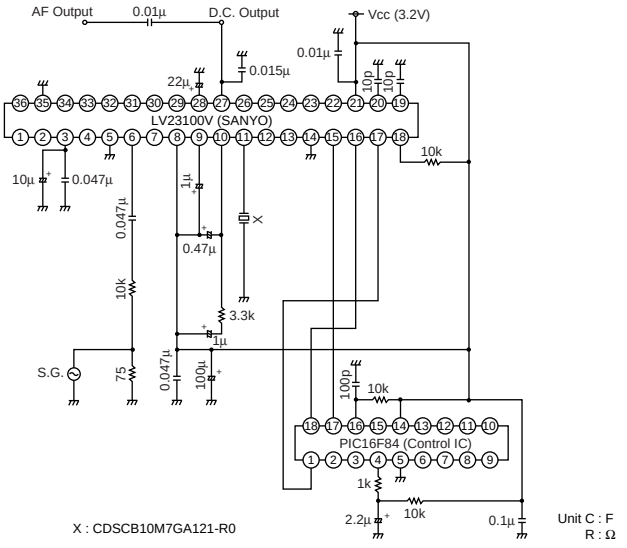
CDSCB10M7GA113-R0



CDSCB10M7GA119-R0



CDSCB10M7GA121-R0

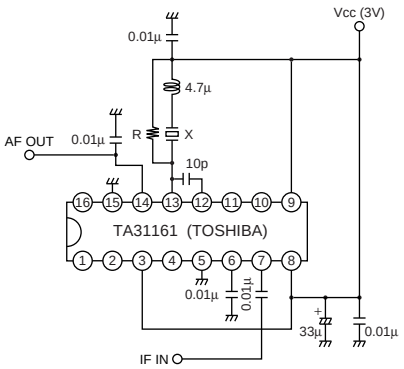


Continued on the following page.

Continued from the preceding page.

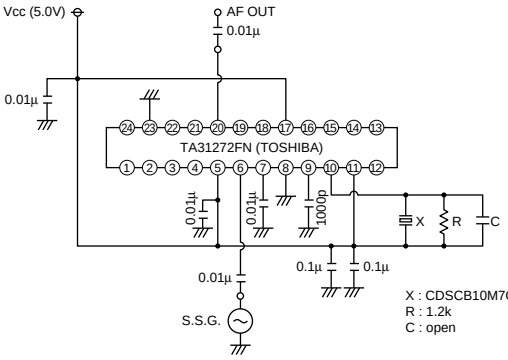
■ Test Circuit

CDSCB10M7GF072-R0



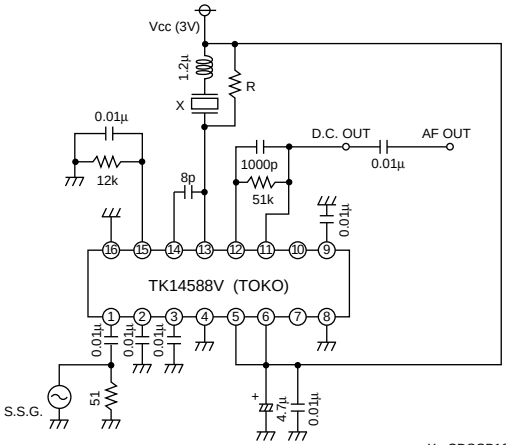
X : CDSCB10M7GF072-R0
R : 820
Unit C : F
R : Ω
L : H

CDSCB10M7GF107-R0



X : CDSCB10M7GF107-R0
R : 1.2k
C : open
Unit C : F
R : Ω

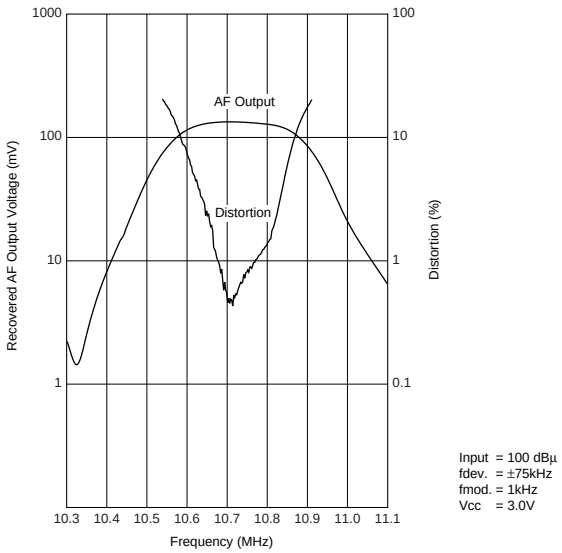
CDSCB10M7GF109-R0



X : CDSCB10M7GF109-R0
R : 820
Unit C : F
R : Ω
L : H

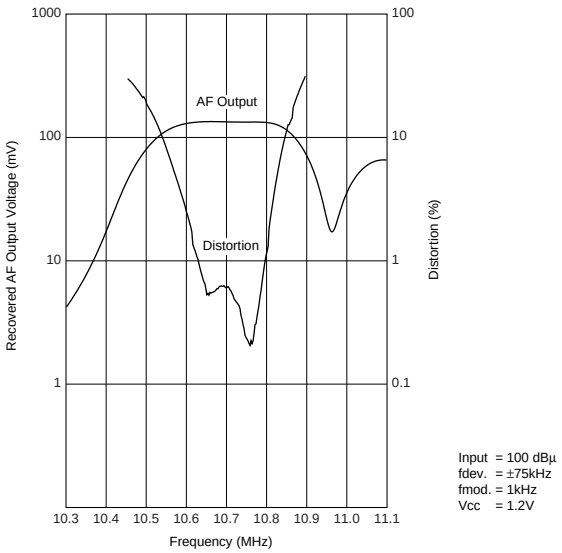
■ Frequency Characteristics

CDSCB10M7GA105A-R0



Input = 100 dBµ
fdev. = ±75kHz
fmod. = 1kHz
Vcc = 3.0V

CDSCB10M7GA113-R0



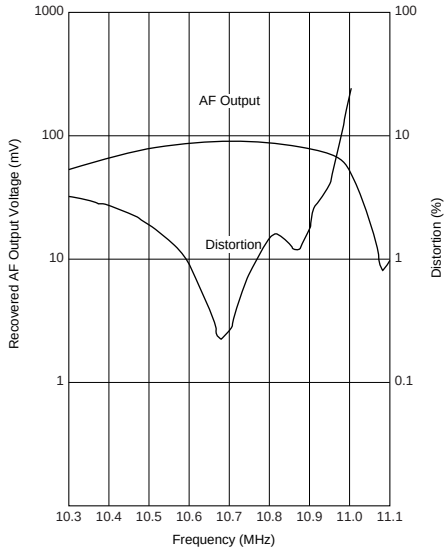
Input = 100 dBµ
fdev. = ±75kHz
fmod. = 1kHz
Vcc = 1.2V

Continued on the following page.

Continued from the preceding page.

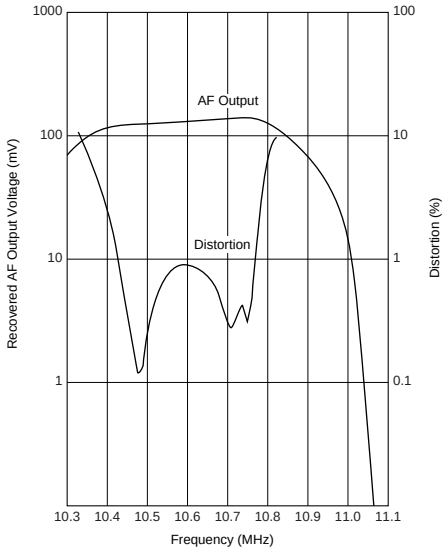
■ Frequency Characteristics

CDSCB10M7GA119-R0



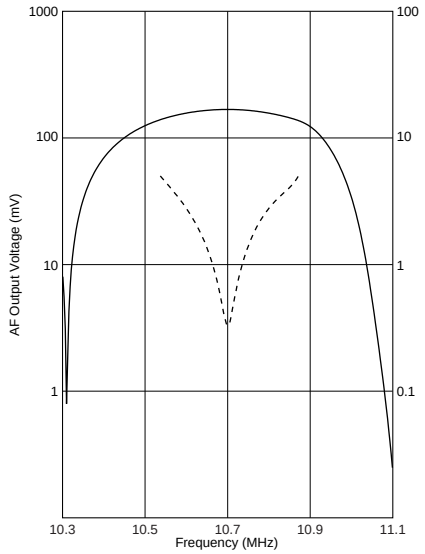
input = 100 dBμ
fdev. = ±60kHz
fmod. = 1kHz
Vcc = 3.0V

CDSCB10M7GA121-R0



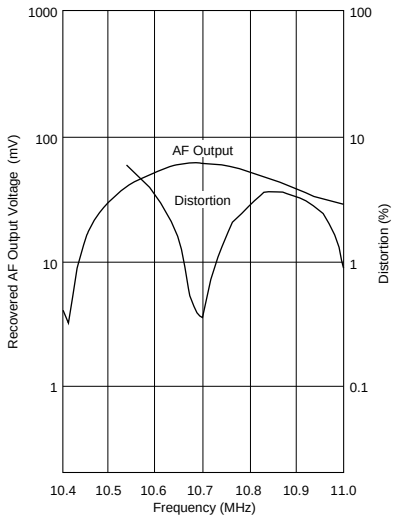
Input = 100 dBμ
fdev. = ±75kHz
fmod. = 1kHz
Vcc = 3.2V

CDSCB10M7GF072-R0



Input = 100dBμ
fdev. = ±80kHz
fmod. = 1kHz
Vcc = 3.0V

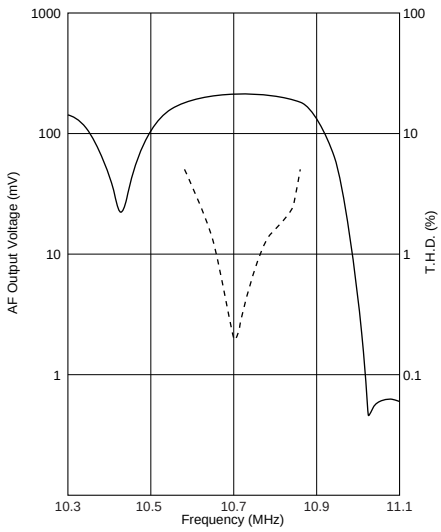
CDSCB10M7GF107-R0



Input signal conditions

Input Level	100dBμ
Mod. Freq.	1000Hz
Freq.Dev.	±40kHz

CDSCB10M7GF109-R0



Input = 100dBμ
fdev. = ±64kHz
fmod. = 1kHz
Vcc = 3.0V

CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

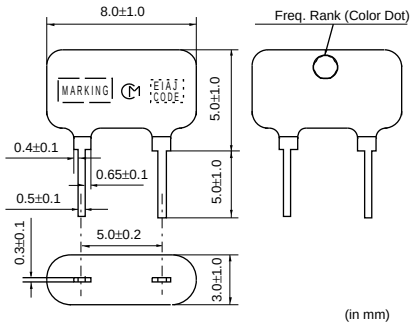
Ceramic Discriminator 10.7MHz Standard Lead Type CDALA Series

CDALA10M7 series forms a resonator on a piezoelectric ceramic substrate. In combination with ICs, this type obtains stable demodulation characteristics in wide bandwidths.

■ Features

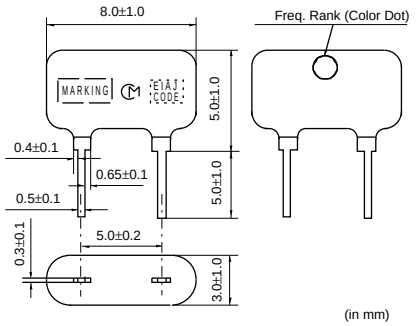
1. Compact and excellent mechanical strength
2. Can be combined with various ICs. The IC is determined by the last number in the part number.
3. Stable demodulation characteristics can be obtained without adjustment.
4. Stable temperature characteristics
5. We recommend combination: ceramic discriminator CDALA10M7 series and "CERAFIL" SFELA10M7 of the same frequency rank.

CDALA10M7G_ Series



(in mm)

CDALA10M7C_ Series



(in mm)

Part Number	Center Frequency (fo) (MHz)	Recovered Audio 3dB BW (kHz)	Recovered Audio Output (mV)	Distortion (%)	IC	Detection Method
CDALA10M7GA001-B0	10.700 ±30kHz	-	-	0.6 max.	CX20029	Quadrature
CDALA10M7GA016-B0	10.700 ±30kHz	300 min.	within60 to 90mV	0.9 max.	TA8122F	Quadrature
CDALA10M7GA018-B0	10.700 ±30kHz	300 min.	within60 to 90mV	0.9 max.	TA8132N	Quadrature
CDALA10M7GA046-B0	10.700 ±30kHz	330 min.	280 min.	1.0 max.	LA1832	Quadrature
CDALA10M7GA048-B0	10.700 ±30kHz	400 min.	700 min.	1.0 max.	LA1835	Quadrature
CDALA10M7GA092-B0	10.700 ±30kHz	300 min.	60 min.	1.0 max.	TA2132P	Quadrature
CDALA10M7CA001-B0	10.700 ±30kHz	242 min.	35 min.	1.0 max.	CX20091	Quadrature
CDALA10M7CA005A-B0	10.700 ±30kHz	100 min.	600 min.	6.0 max.	LA7770	Quadrature
CDALA10M7CA040-B0	10.700 ±30kHz	130 min.	40 min.	0.7 max.	TEA5710	Quadrature

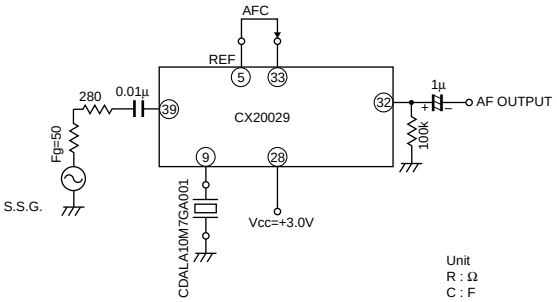
The order quantity should be an integral multiple of the "Minimum Quantity" shown in the package page.
CDALA10M7GA018-B0: Color dot is different from standard series.

■ Standard Center Frequency Rank Code

CODE	30kHz Step	25kHz Step	Color Code
D	10.64MHz±30kHz	10.650MHz±25kHz	Black
B	10.67MHz±30kHz	10.675MHz±25kHz	Blue
A	10.70MHz±30kHz	10.700MHz±25kHz	Red
C	10.73MHz±30kHz	10.725MHz±25kHz	Orange
E	10.76MHz±30kHz	10.750MHz±25kHz	White
Z	Combination A,B,C,D,E		
M	Combination A,B,C		

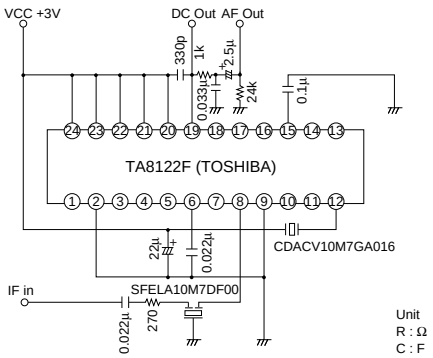
■ Test Circuit

CDALA10M7GA001-B0



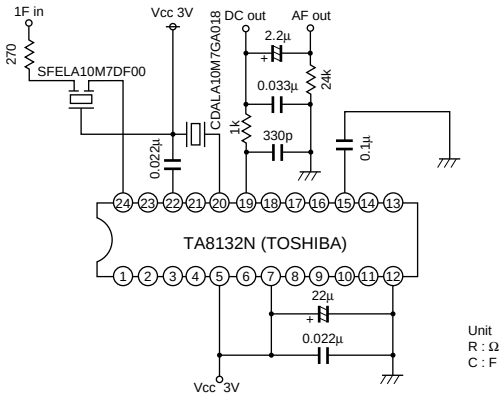
Unit
R : Ω
C : F

CDALA10M7GA016-B0



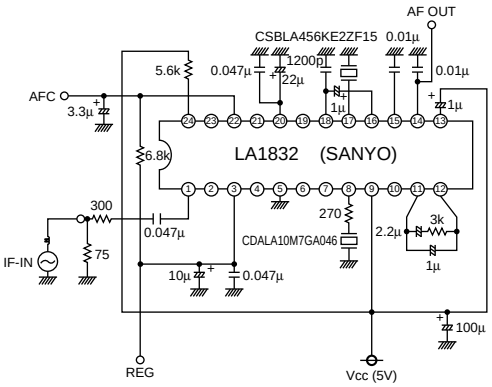
Unit
R : Ω
C : F

CDALA10M7GA018-B0



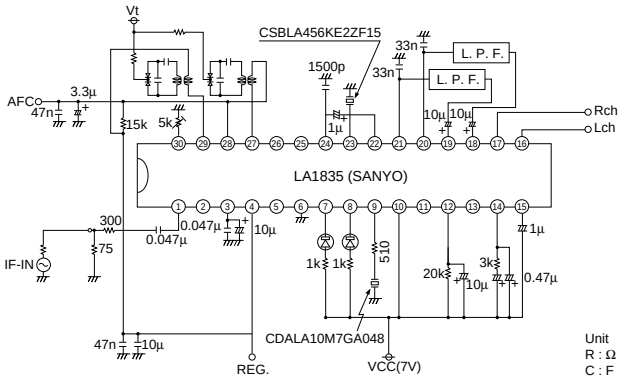
Unit
R : Ω
C : F

CDALA10M7GA046-B0



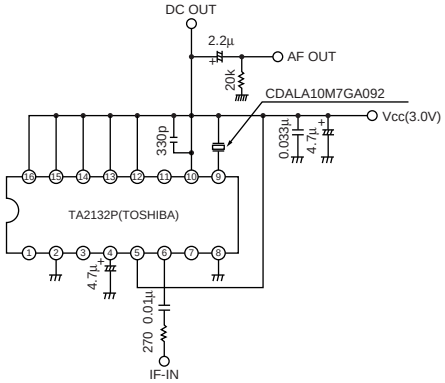
Unit
R : Ω
C : F

CDALA10M7GA048-B0



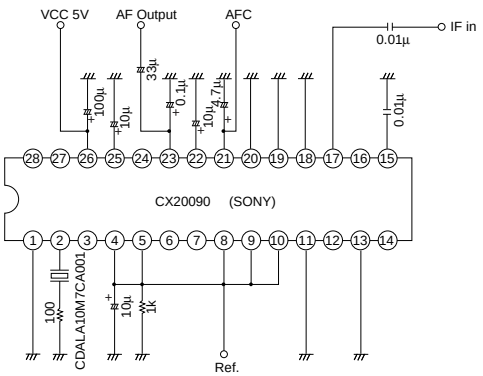
Unit
R : Ω
C : F

CDALA10M7GA092-B0



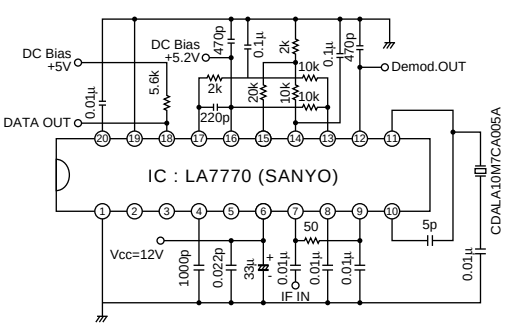
Unit
R : Ω
C : F

CDALA10M7CA001-B0



Unit
R : Ω
C : F

CDALA10M7CA005A-B0



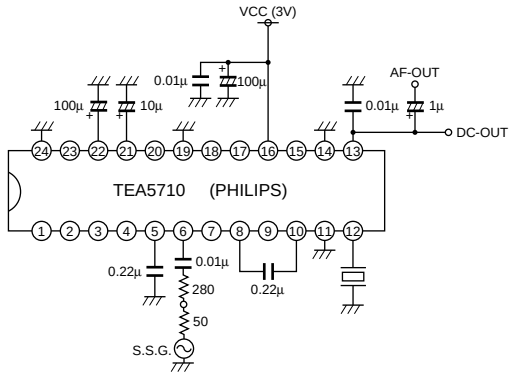
Unit
R : Ω
C : F

Continued on the following page.

Continued from the preceding page.

■ Test Circuit

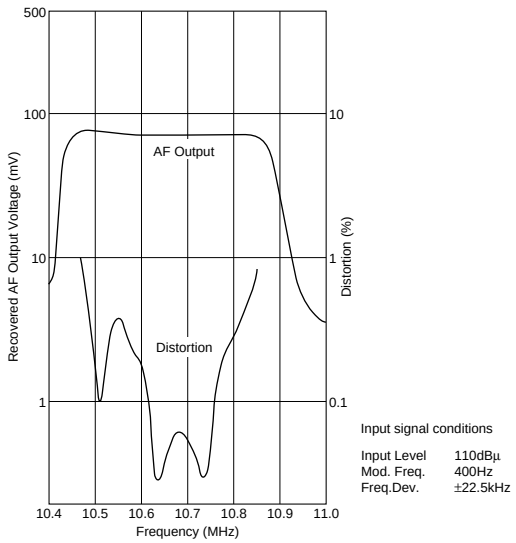
CDALA10M7CA040-B0



Unit
R : Ω
C : F

■ Frequency Characteristics

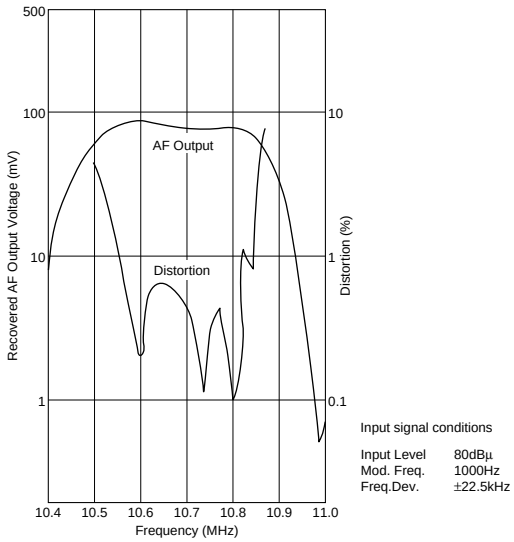
CDALA10M7GA001-B0



Input signal conditions

Input Level	110dBµ
Mod. Freq.	400Hz
Freq.Dev.	±22.5kHz

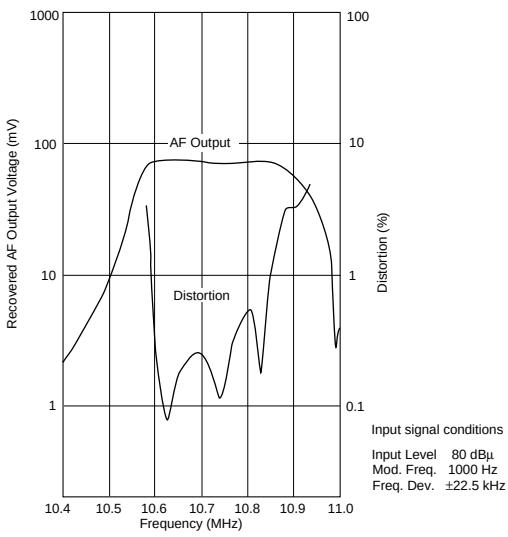
CDALA10M7GA016-B0



Input signal conditions

Input Level	80dBµ
Mod. Freq.	1000Hz
Freq.Dev.	±22.5kHz

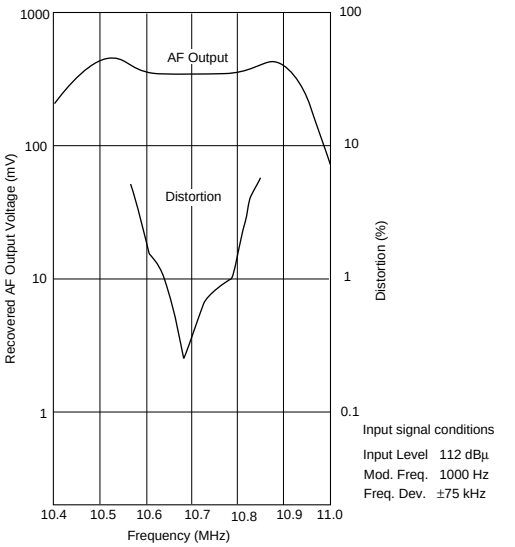
CDALA10M7GA018-B0



Input signal conditions

Input Level	80 dBµ
Mod. Freq.	1000 Hz
Freq. Dev.	±22.5 kHz

CDALA10M7GA046-B0



Input signal conditions

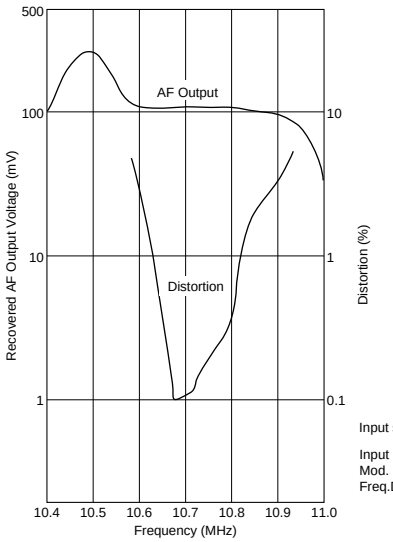
Input Level	112 dBµ
Mod. Freq.	1000 Hz
Freq. Dev.	±75 kHz

Continued on the following page.

Continued from the preceding page.

■ Frequency Characteristics

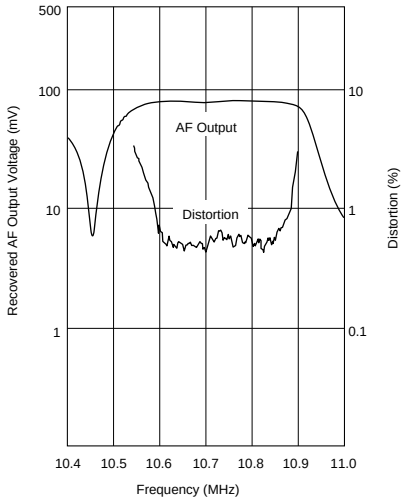
CDALA10M7GA048-B0



Input signal conditions

Input Level	112dBμ
Mod. Freq.	1000Hz
Freq.Dev.	±75kHz

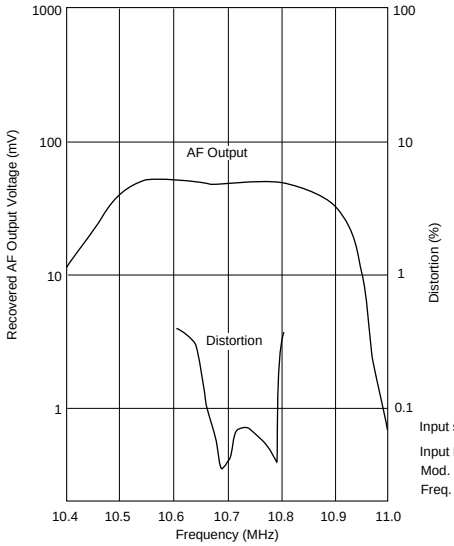
CDALA10M7GA092-B0



Input signal conditions

Input Level	80dBμ
Mod.Freq.	1000Hz
Freq.Dev.	±22.5kHz

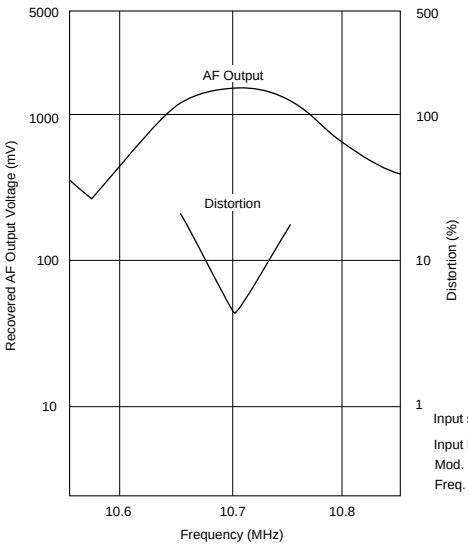
CDALA10M7CA001-B0



Input signal conditions

Input Level	110 dBμ
Mod. Freq.	400 Hz
Freq. Dev.	±22.5 kHz

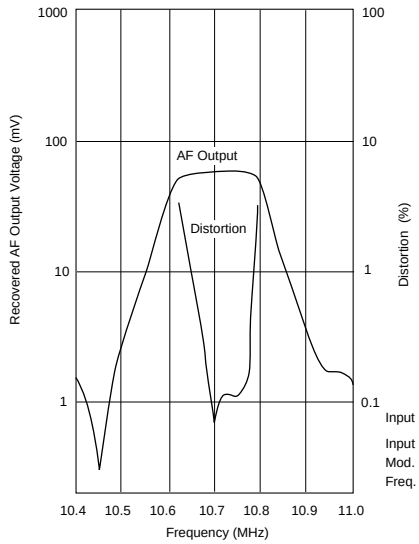
CDALA10M7CA005A-B0



Input signal conditions

Input Level	100 dBμ
Mod. Freq.	1000 Hz
Freq. Dev.	±75 kHz

CDALA10M7CA040-B0



Input signal conditions

Input Level	100 dBμ
Mod. Freq.	1000 Hz
Freq. Dev.	±22.5 kHz

Ceramic Discriminator 10.7MHz Applied IC Reference Table

Please see following table for reference applied IC.
If you can not find IC part number seeking, please contact our sales representative.

ex. : CDALA10M7GA016-B0
Suffix Number

CDSCB10M7GA105A-R0
Suffix Number

IC Manufacturer	IC Part Number	Suffix Number
ATMEL	U2501B	**028**
	U2765B	**095**
	U4313B	**081**
	U4490B	**034V**
	U829B	**025**
INFINEON	TDA1576T	**051**
	TDA6160X	**038**
	TDA6160-2X	**044**
MATSUSHITA	AN6138SH	**097**
	AN7004	**011**
	AN7006S	**014A**
	AN7007SU	**013**
	AN7232	**053**
MOTOROLA	MC13156	**049**
	MC13158	**073**
	MC13173	**052**
	MC3363	**087**
NEC	μPC1391M	**056**
PHILIPS	NE604	**020**
	SA605	**042**
	SA626	**047**
	SA636DK	**096**
	SA639	**085**
	TBA120U	**029**
	TBA229-2	**021A**
	TDA1596T	**120**
	TDA2557	**024**
	TEA5591	**017**
	TEA5592	**030**
	TEA5594	**035**
	TEA5710	**040**
	TEA5712T	**055**
	TEA5757HL	**105A**
	TEA5762 / 5757	**061**
	UAA3220TS	**098**
RFMD	RF2905	**111**
	RF2925	**104**
ROHM	BA1440	**019**
	BA1448	**060**
	BA4110	**066**
	BA4220	**041**
	BA4230AF	**005**
	BA4234L	**004**
	BA4240L	**067**

IC Manufacturer	IC Part Number	Suffix Number
SAMSUNG	KA22425	**089**
	KA2244	**059**
	KA22901	**090**
	KA2292	**063**
	KA2295	**064**
	KA2297	**091**
	KA2298B	**065**
	KB22902	**103**
	S1A0903	**118A**
SANYO	LA1150	**070**
	LA1225M	**108A**
	LA1260	**007**
	LA1805	**026**
	LA1810	**022**
	LA1814M	**115**
	LA1816	**015**
	LA1822	**094**
	LA1823	**101**
	LA1827M	**083**
	LA1830	**037**
	LA1831	**043**
	LA1832 / M	**046**
	LA1833	**086**
	LA1835 / M	**048**
	LA1838 / M	**079**
	LA7770	**023**
	LV23000M	**114**
	LV23100V	**121**
SONY	CX1691M	**078**
	CX-20029	**001**
	CX-20076	**002**
	CXA1030P	**012**
	CXA1111	**093**
	CXA1238	**027**
	CXA1238N	**027N**
	CX1343M	**032**
	CXA1376AM	**054**
	CXA1538M / N / S	**069**
	CXA1611	**075**
	CXA1619B	**117**
	CXA1991N	**068**
	CX3067M	**076**
T. I.	TRF6901	**119**

Continued on the following page.

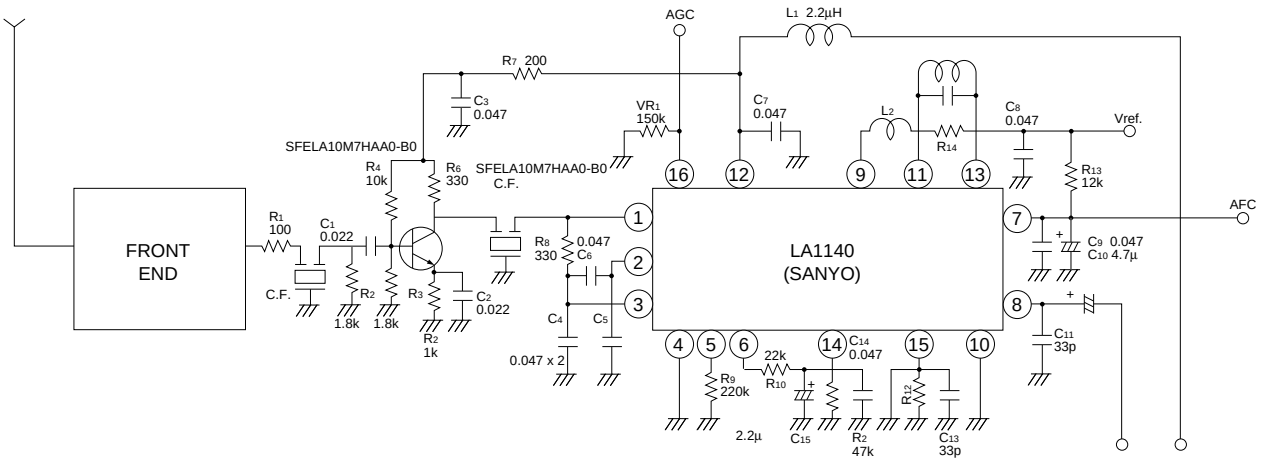
Ceramic Discriminator 10.7MHz Applied IC Reference Table

Continued from the preceding page.

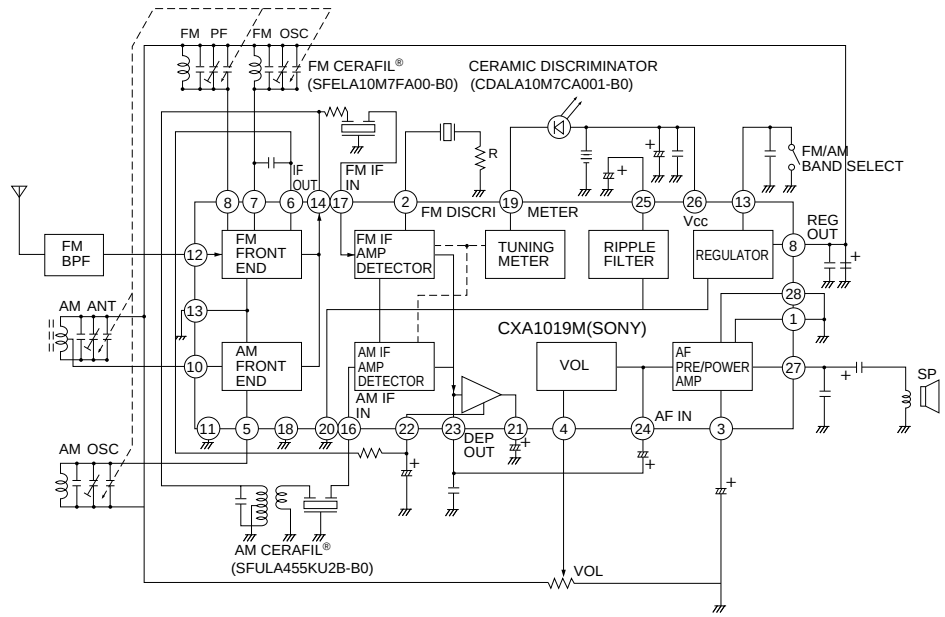
IC Manufacturer	IC Part Number	Suffix Number
TOKO	TK14570L	**122**
	TK14581	**062**
	TK14583V	**112**
	TK14588V	**109**
TOSHIBA	TA2003	**031**
	TA2007	**033**
	TA2008A / AN	**045**
	TA2022	**050**
	TA2029	**036**
	TA2046	**058**
	TA2057	**057**
	TA2099N	**082**
	TA2104AFN	**080**
	TA2104F	**080A**
	TA2111N / F / FN	**077**
	TA2132	**092**
	TA2132BP	**092D**
	TA2142FN	**102**
	TA2149AN	**100A**
	TA2149N	**100**
	TA2154FN	**113**
	TA2159F	**116**
	TA31161	**072**
	TA31272F	**107**
	TA7130P	**009**
	TA7303P	**008**
	TA7640AP	**006**
	TA7765AF	**071**
	TA8122AN / AF	**016**
	TA8132AN / AF	**018**
	TA8186	**039**
	TA8721ASN	**088**

Ceramic Discriminator 10.7MHz Applied Circuit

■ LA1140 (Automotive Radio)



■ CXA1019M (Radio)



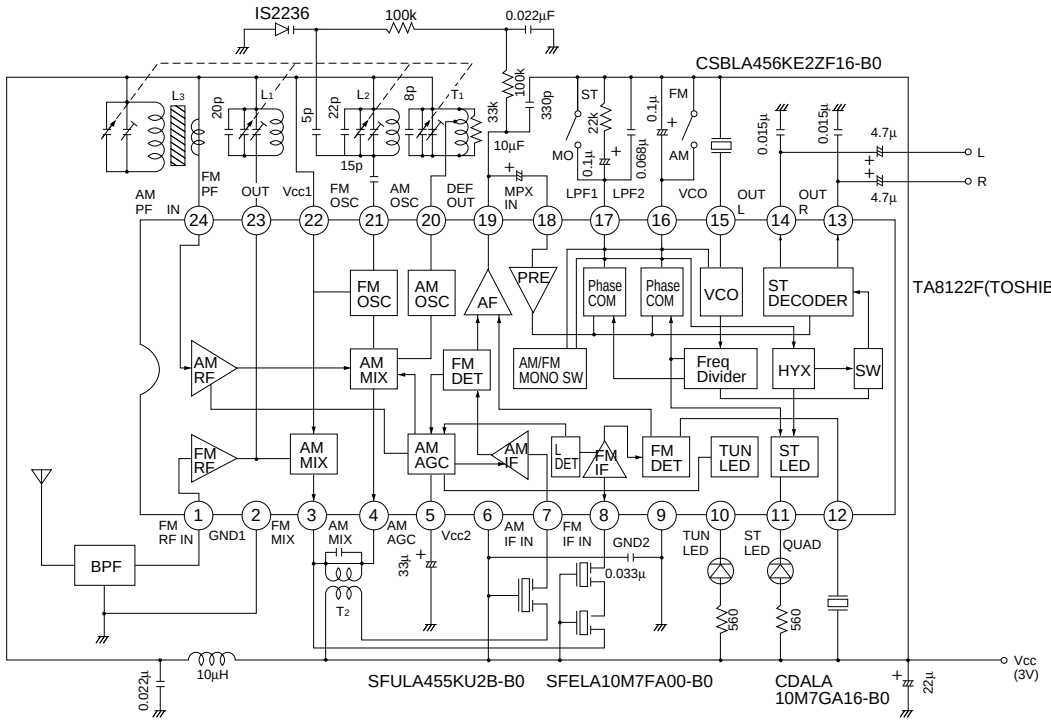
No adjustment is needed the FM detection stage due to use the ceramic discriminator.

Continued on the following page.

Ceramic Discriminator 10.7MHz Applied Circuit

Continued from the preceding page.

■ TA8122F (Radio)



Detection and MPX stage adjustment ceramic discriminator and ceramic resonator (CERALOCK®)

CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

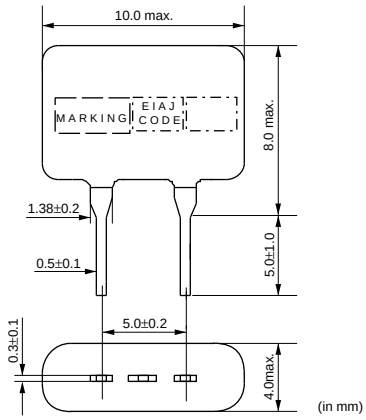
Ceramic Discriminator 3.5-6.5MHz Wide Bandwidth Type CDSRH Series

Ceramic discriminator CDSRH series is a wide band, low profile type using thickness shear mode vibration.

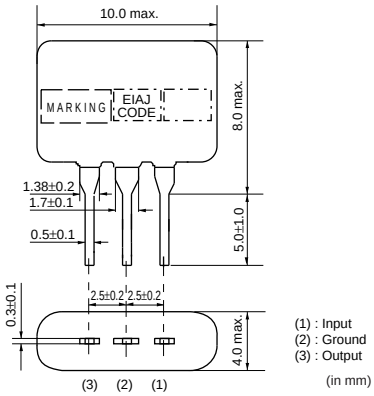
■ Features

1. Low profile 8.0mm type
2. Suitable for Multi-sound Broadcasting system
3. Two-terminals type and three-terminals type are available.

CDSRH_EK Series



CDSRH_CK Series



Part Number	Nominal Center Frequency (fn) (MHz)	Recovered Audio 3dB BW (kHz)	Recovered Audio Output Voltage (at fn) (mV)	Distortion (%)	IC	Detection Method
CDSRH4M50EK020-B0	4.500	fn±80 min.	245 min.	1.0 max.	LA7550/7555	Quadrature
CDSRH4M50EK023-B0	4.500	fn±60 min.	230 min.	2.5 max.	M51496P	Quadrature
CDSRH4M50EK035-B0	4.500	fn±55 min.	240 min.	1.0 max.	LA7680/7681	Quadrature
CDSRH4M50EK049-B0	4.500	fn±100 min.	220 min.	1.0 max.	LA7577	Quadrature
CDSRH4M50EK060-B0	4.500	fn±90 min.	90 min.	1.0 max.	M52318SP	Quadrature
CDSRH4M50EK069-B0	4.500	fn±60 min.	320 min.	1.5 max.	TA8701N	Quadrature
CDSRH4M50EK070-B0	4.500	fn±50 min.	65 min.	1.5 max.	M52007FP	Quadrature
CDSRH5M50EK023-B0	5.500	fn±45 min.	220 min.	1.0 max.	M51496P	Quadrature
CDSRH5M50EK035-B0	5.500	fn±80 min.	350 min.	1.0 max.	LA7680/7681	Quadrature
CDSRH5M50EK049-B0	5.500	fn±60 min.	500 min.	1.0 max.	LA7577	Quadrature
CDSRH5M50EK054-B0	5.500	fn±100 min.	300 min.	1.2 max.	TDA3857	Quadrature
CDSRH5M50EK060-B0	5.500	fn±70 min.	190 min.	1.5 max.	M52318SP	Quadrature
CDSRH5M74EK054-B0	5.742	fn±90 min.	340 min.	1.2 max.	TDA3857	Quadrature
CDSRH6M00EK049-B0	6.000	fn±60 min.	500 min.	1.0 max.	LA7577	Quadrature
CDSRH6M00EK054-B0	6.000	fn±90 min.	340 min.	1.5 max.	TDA3857	Quadrature
CDSRH6M00EK060-B0	6.000	fn±60 min.	180 min.	2.5 max.	M52318SP	Quadrature
CDSRH6M50EK020-B0	6.500	fn±110 min.	350 min.	1.2 max.	LA7550/7555	Quadrature
CDSRH6M50EK049-B0	6.500	fn±60 min.	500 min.	1.0 max.	LA7577	Quadrature
CDSRH6M50EK054-B0	6.500	fn±90 min.	340 min.	1.5 max.	TDA3857	Quadrature
CDSRH6M50EK060-B0	6.500	fn±60 min.	160 min.	2.5 max.	M52318SP	Quadrature
CDSRH4M50CK020-B0	4.500	fn±50 min.	280 min.	2.0 max.	µPC1382C	Quadrature
CDSRH4M50CK026-B0	4.500	fn±40 min.	70 min.	1.2 max.	LA7530	Quadrature
CDSRH4M50CK029-B0	4.500	fn±65 min.	250 min.	1.2 max.	M51365SP	Quadrature
CDSRH4M50CK030-B0	4.500	fn±40 min.	within130 +30/-20mV	3.0 max.	M51348FP	Quadrature

Continued on the following page.

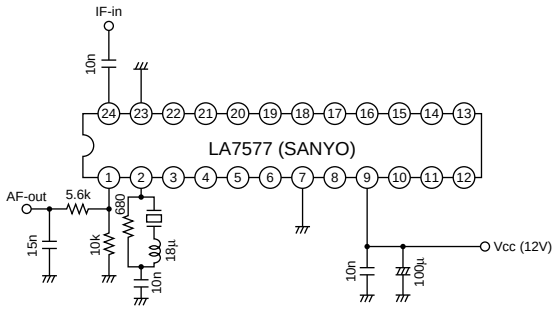
Continued from the preceding page.

Part Number	Nominal Center Frequency (fn) (MHz)	Recovered Audio 3dB BW (kHz)	Recovered Audio Output Voltage (at fn) (mV)	Distortion (%)	IC	Detection Method
CDSRH5M50CK026-B0	5.500	fn±50 min.	500 min.	3.0 max.	LA7530	Quadrature
CDSRH5M50CK029-B0	5.500	fn±70 min.	420 min.	1.5 max.	M51365SP	Quadrature
CDSRH5M50CK030-B0	5.500	fn±55 min.	150 min.	3.0 max.	M51348FP	Quadrature
CDSRH6M00CK026-B0	6.000	fn±50 min.	400 min.	3.0 max.	LA7530	Quadrature
CDSRH6M00CK029-B0	6.000	fn±70 min.	450 min.	1.7 max.	M51365SP	Quadrature
CDSRH6M00CK030-B0	6.000	fn±55 min.	150 min.	3.0 max.	M51348FP	Quadrature
CDSRH6M50CK020-B0	6.500	fn±60 min.	480 min.	2.0 max.	µPC1382C	Quadrature
CDSRH6M50CK026-B0	6.500	fn±35 min.	400 min.	3.0 max.	LA7530	Quadrature
CDSRH6M50CK029-B0	6.500	fn±70 min.	430 min.	2.0 max.	M51365SP	Quadrature

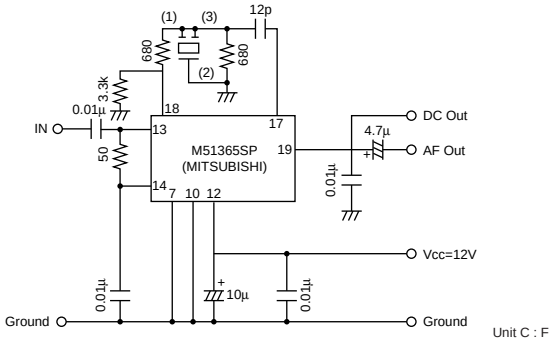
Characteristics shown above is as of 100% Dev.
Part Numbers are varied with applied IC.
Please note circuits and specifications are also varied with IC.

■ Test Circuit

CDSRH4M50EK049-B0



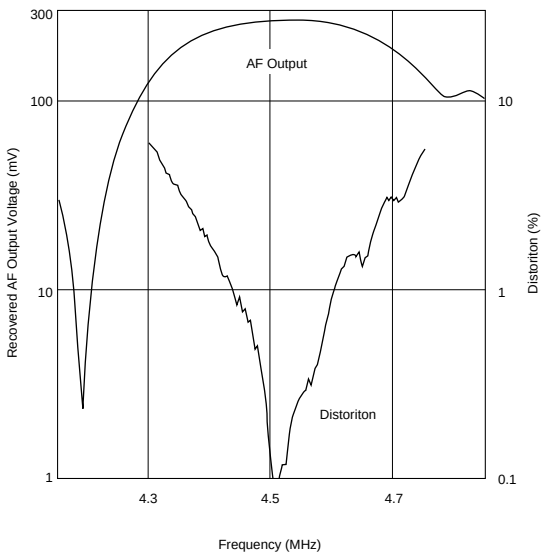
CDSRH4M50CK029-B0



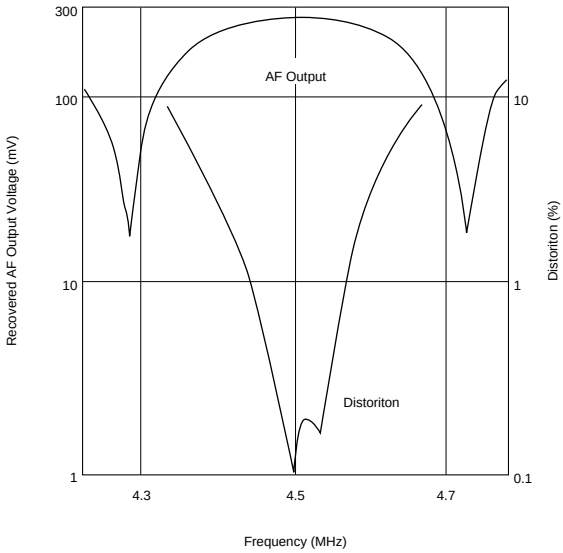
Unit C : F
R : Ω

■ Frequency Characteristics

CDSRH4M50EK049-B0



CDSRH4M50CK029-B0



CERAFIL® (Filters / Traps / Discriminators) for Audio / Visual Equipment

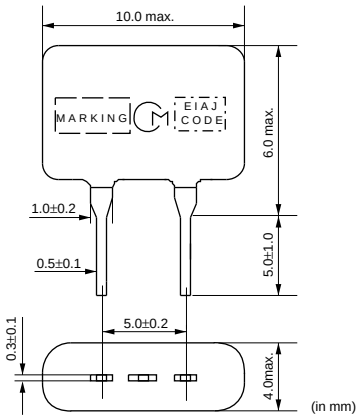
Ceramic Discriminator 3.5-6.5MHz Low Profile Type CDSRL Series

Ceramic discriminator CDSRL series is a wide band, low profile type using thickness shear mode vibration.

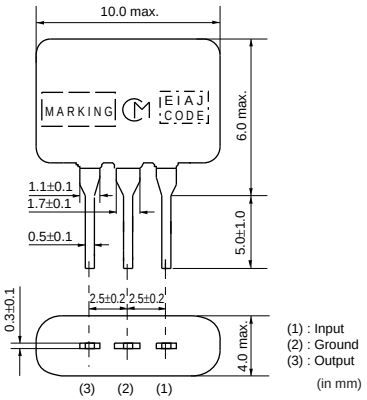
■ Features

1. Low profile 6.0mm type
2. Suitable for Multi-sound Broadcasting system
3. Two-terminals type and three-terminals type are available.

CDSRL_EK Series



CDSRL_CK Series

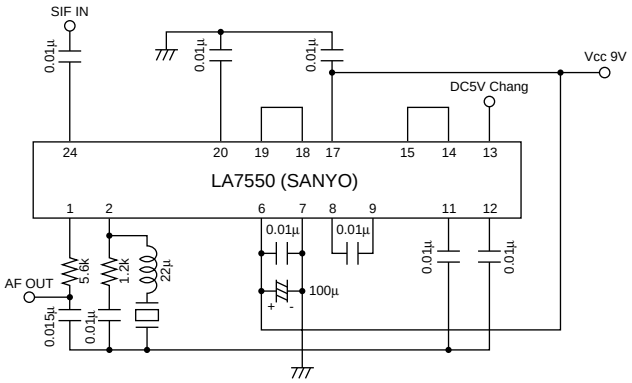


Part Number	Nominal Center Frequency (fn) (MHz)	Recovered Audio 3dB BW (kHz)	Recovered Audio Output Voltage (at fn) (mV)	Distortion (%)	IC	Detection Method
CDSRL4M50EK020-B0	4.500	fn±80 min.	245 min.	1.0 max.	LA7550/7555	Quadrature
CDSRL5M50EK020-B0	5.500	fn±100 min.	330 min.	1.2 max.	LA7550/7555	Quadrature
CDSRL4M50CK020-B0	4.500	fn±50 min.	280 min.	2.0 max.	µPC1382C	Quadrature
CDSRL4M50CK029-B0	4.500	fn±65 min.	250 min.	1.2 max.	M51365SP	Quadrature
CDSRL4M50CK030-B0	4.500	fn±40 min.	within130 +30/-20mV	3.0 max.	M51348FP	Quadrature
CDSRL5M50CK030-B0	5.500	fn±55 min.	150 min.	3.0 max.	M51348FP	Quadrature
CDSRL6M00CK029-B0	6.000	fn±70 min.	450 min.	1.7 max.	M51365SP	Quadrature
CDSRL6M00CK030-B0	6.000	fn±55 min.	150 min.	3.0 max.	M51348FP	Quadrature
CDSRL6M50CK020-B0	6.500	fn±60 min.	480 min.	2.0 max.	µPC1382C	Quadrature
CDSRL6M50CK026-B0	6.500	fn±35 min.	400 min.	3.0 max.	LA7530	Quadrature

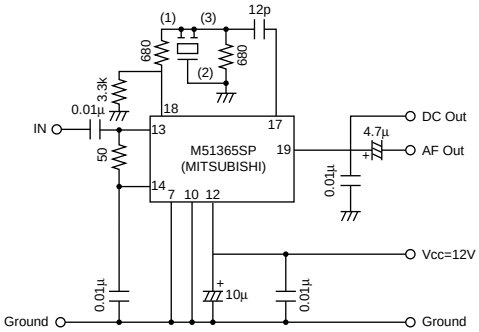
Characteristics shown above is as of 100% Dev.
Part Numbers are varied with applied IC.
Please note circuits and specifications are also varied with IC.

■ Test Circuit

CDSRL4M50EK020-B0



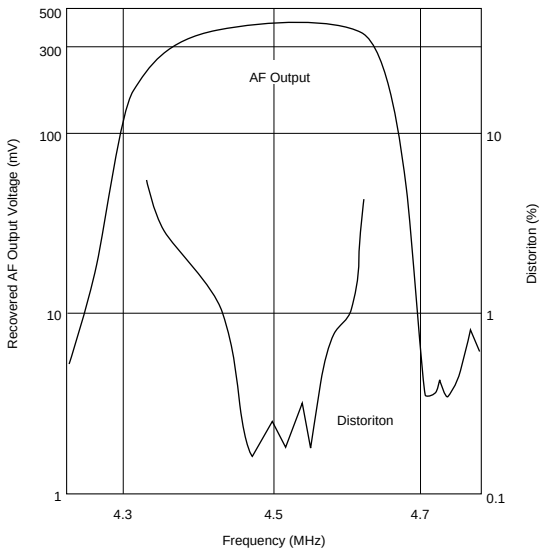
CDSRL4M50CK029-B0



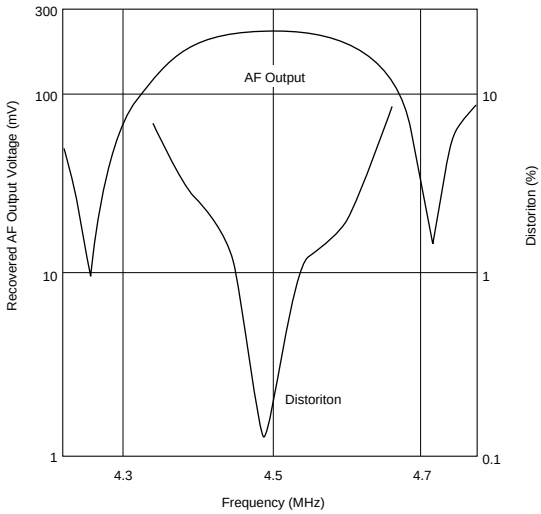
Unit C : F
R : Ω

■ Frequency Characteristics

CDSRL4M50EK020-B0



CDSRL4M50CK029-B0

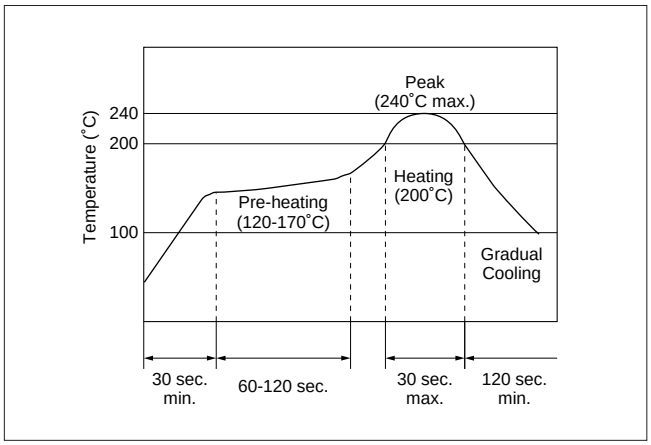


Notice (Soldering and Mounting)

■ CERAFIL® 10.7MHz Chip Type SFECS/SFECD Series

1. Standard Reflow Soldering Condition

(1) Reflow



(2) Soldering Iron

Filter shall be soldered at +280±5˚C for 3.0±0.5 seconds.
The soldering iron shall not touch the filter while soldering.

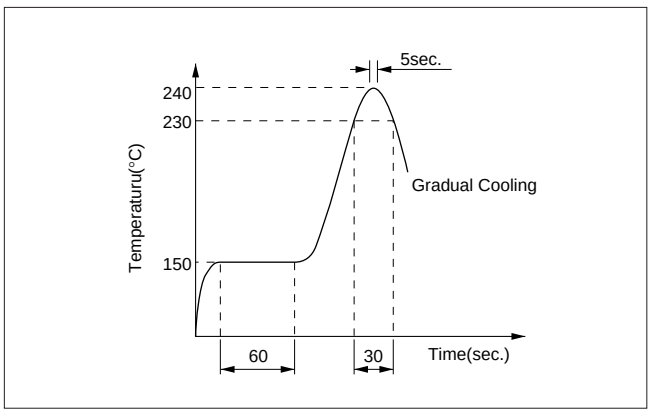
2. Wash

The component cannot withstand washing.

■ CERAFIL® 10.7MHz Chip Type SFECV Series

1. Standard Reflow Soldering Condition

(1) Reflow



(2) Soldering Iron

Lead terminal is directly contacted with the tip of soldering iron at +280±5˚C for 3.0±0.5 seconds.

2. Wash

The component cannot withstand washing.

■ CERAFIL® 10.7MHz Lead Type

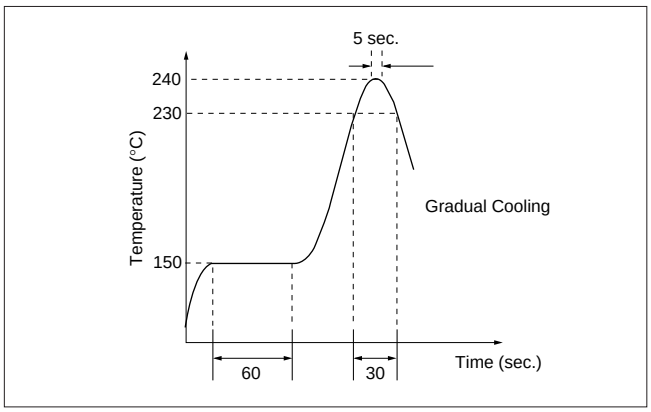
The component cannot withstand washing.

Notice (Soldering and Mounting)

■ CERAFIL® 4.5-6.5MHz Chip Type

1. Standard Reflow Soldering Condition

(1) Reflow



(2) Soldering Iron

Lead terminal is directly contacted with the tip of soldering iron at +280±5°C for 3.0±0.5 seconds.

2. Wash

The component cannot withstand washing.

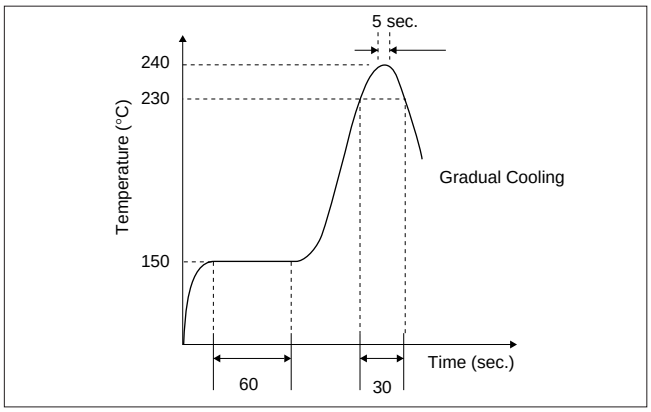
■ CERAFIL® 3.5-6.5MHz Lead Type

The component cannot withstand washing.

■ CERAFIL® 455kHz Chip Type PFWCC Series

1. Standard Reflow Soldering Condition

(1) Reflow



(2) Soldering Iron

Lead terminal is directly contacted with the tip of soldering iron at +280±5°C for 3.0±0.5 seconds.

2. Wash

The component cannot withstand washing.

Continued on the following page.

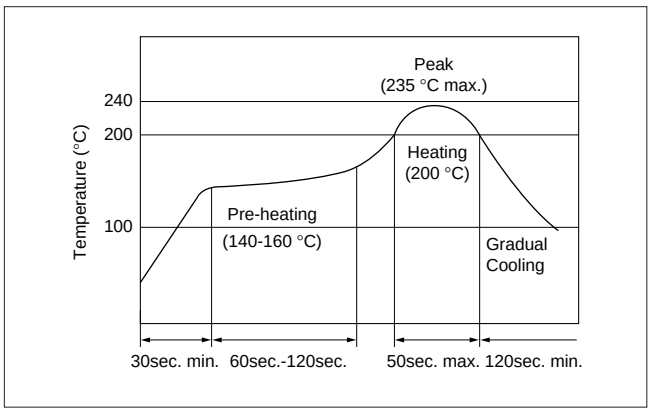
Notice (Soldering and Mounting)

Continued from the preceding page.

■ CERAFIL® 455kHz Chip Type SFPCA Series

1. Standard Reflow Soldering Condition

(1) Reflow



(2) Soldering Iron

Electrode is soldered directly with the tip of soldering iron at +350±5°C for 3±1 seconds.

2. Wash

(1) Cleaning Solvent

CFC alternatives (HCFC Series), Isopropyl Alcohol (IPA), Water (Demineralized Water), Cleaning Water Solution (Cleanthrough-750H, Pine Alpha 100S), Silicon (Technocare FRW)

(2) Cleaning Conditions

- Immersion Wash
  2 minutes max. in above solvent at +60°C max.
- Shower or Rinse Wash
  2 minutes max. in above solvent at +60°C max.

(3) Notice

- When components are immersed in solvent, be sure to maintain the temperature of components below the temperature of solvent.
- Please do not use ultrasonic cleaning.
- Total washing time should be within 4 minutes.
- Please ensure the component is thoroughly evaluated in your application circuit.
- Please do not use chlorine, petroleum and alkali cleaning solvents.
- If you plan to use any other type of solvents, please consult with Murata or Murata representative prior to using.

■ CERAFIL® 455kHz Lead Type

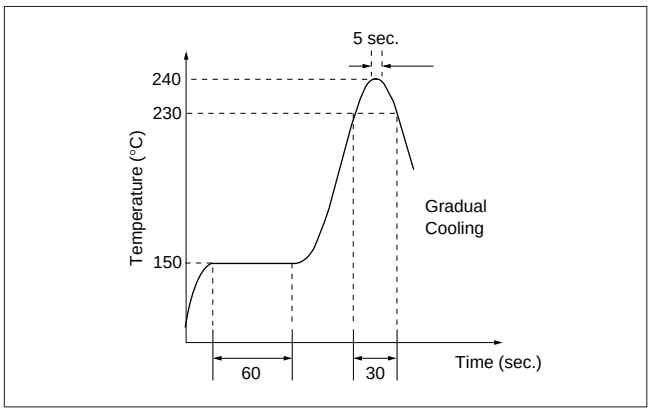
The component cannot withstand washing.

Notice (Soldering and Mounting)

■ Ceramic Trap 4.5-6.5MHz Chip Type

1. Standard Reflow Soldering Condition

(1) Reflow



(2) Soldering Iron

Lead terminal is directly contacted with the tip of soldering iron at +280±5°C for 3.0±0.5 seconds.

2. Wash

The component cannot withstand washing.

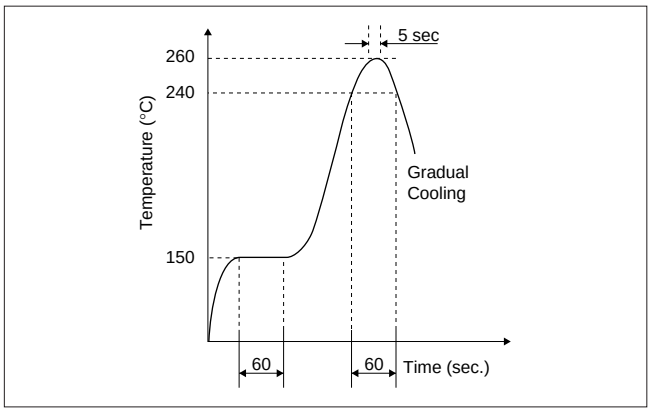
■ Ceramic Trap 3.5-6.5MHz Lead Type

The component cannot withstand washing.

■ Ceramic Discriminator 10.7MHz Chip Type

1. Standard Reflow Soldering Condition

(1) Reflow



(2) Soldering Iron

Lead terminal is directly contacted with the tip of soldering iron at +280±5°C for 3.0±0.5 seconds.

2. Wash

The component cannot withstand washing.

■ Ceramic Discriminator 10.7MHz Lead Type

The component cannot withstand washing.

■ Ceramic Discriminator 3.5-6.5MHz

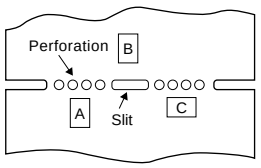
The component cannot withstand washing.

Notice (Handling)

■ CERAFIL® 10.7MHz Chip Type SFECS/SFECD Series

1. The component will be damaged when an excessive stress is applied.
2. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
3. Design layout of components on the PC board to minimize the stress imposed on the warp or flexure of the board.
4. After installing chips, if solder is excessively applied to the circuit board, mechanical stress will cause destruction resistance characteristics to lower. To prevent this, be extremly careful in determining shape and dimension before designing the circuit board diagram.
5. When the positioning claws and pick up nozzle are worn, the load is applied to the chip while positioning is concentrated to one positioning accuracy, etc. Careful checking and maintenance are necessary to prevent unexpected trouble.
6. When correcting chips with a soldering iron, the tip of the soldering iron should not directly touch the chip component. Depending on the soldering conditions, the effective area of terminations may be reduced. The use of solder containing Ag should be done to prevent the electrode erosion.
7. Do not clean or wash the component as it is not hermetically sealed.
8. In case of covering filter with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.
9. Do not use strong acidity flux, more than 0.2wt% chlorine content, in re-flow soldering.
10. Accurate test circuit values are required to measure electrical characteristics.
    It may be a cause of miscorrelation if there is any deviation, especially stray capacitance, from the test circuit in the specification.

[Component layout close to board]



Susceptibility to stress is in the order of : A>C>B

Continued on the following page.

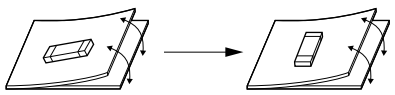
Notice (Handling)

Continued from the preceding page.

■ CERAFIL® 10.7MHz Chip Type SFECV Series

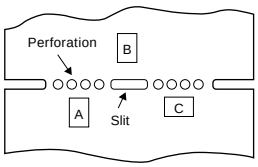
1. The component will be damaged when an excessive stress is applied.
2. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
3. Design layout of components on the PC board to minimize the stress imposed on the warp or flexure of the board.
4. After installing chips, if solder is excessively applied to the circuit board, mechanical stress will cause destruction resistance characteristics to lower. To prevent this, be extremely careful in determining shape and dimension before designing the circuit board diagram.
5. When the positioning claws and pick up nozzle are worn, the load is applied to the chip while positioning is concentrated to one positioning accuracy, etc. Careful checking and maintenance are necessary to prevent unexpected trouble.
6. When correcting chips with a soldering iron, the tip of the soldering iron should not directly touch the chip component. Depending on the soldering conditions, the effective area of terminations may be reduced. the use of solder containing Ag should be done to prevent the electrode erosion.
7. Do not clean or wash the component as it is not hermetically sealed.
8. In case of covering filter with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.
9. Do not use strong acidity flux, more than 0.2wt% chlorine content, in re-flow soldering.
10. Accurate test circuit values are required to measure electrical characteristics. It may be a cause of mis-correlation if there is any deviation, especially stray capacitance, from the test circuit in the specification.

[Component direction]



Put the component lateral to the direction in which stress acts.

[Component layout close to board]



Susceptibility to stress is in the order of : A>C>B

■ CERAFIL® 10.7MHz Lead Type

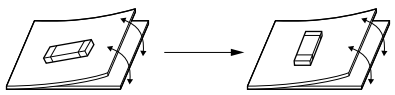
1. Do not use this product with bend. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
2. The component may be damaged when an excess stress is applied.
3. All kinds of re-flow soldering must not be applied on the component.
4. Do not clean or wash the component as it is not hermetically sealed.
5. Do not use strong acidity flux, more than 0.2wt% chlorine content, in flow soldering.
6. In case of covering discriminator with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.
7. Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miscorrelation if there is any deviation, especially stray capacitance, from the test circuit in the specification.

Notice (Handling)

■ CERAFIL® 4.5-6.5MHz Chip Type

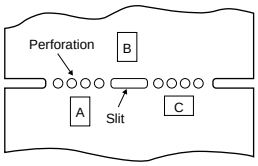
1. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
2. Design layout of components on the PC board to minimize the stress imposed on the wrap or flexure of the board.
3. After installing chips, if solder is excessively applied to the circuit board, mechanical stress will cause destruction resistance characteristics to lower. To prevent this, be extremely careful in determining shape and dimension before designing the circuit board diagram.
4. When the positioning claws and pick up nozzle are worn, the load is applied to the chip while positioning is concentrated to one positioning accuracy, etc. Careful checking and maintenance are necessary to prevent unexpected trouble.
5. When correcting chips with a soldering iron, the tip of the soldering iron should not directly touch the chip component.
6. Cleaning or washing of the component is not acceptable due to non sealed construction.
7. In case of covering filter with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.
8. Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miscorrelation if there is any deviation, especially stray capacitance, from the test circuit in the specification.

[Component direction]



Put the component lateral to the direction in which stress acts.

[Component layout close to board]



Susceptibility to stress is in the order of : A>C>B

■ CERAFIL® 3.5-6.5MHz Lead Type

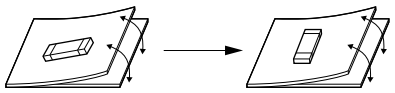
1. Do not use this product with bend. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
2. The component may be damaged when an excess stress is applied.
3. All kinds of re-flow soldering must not be applied on the component.
4. Do not clean or wash the component as it is not hermetically sealed.
5. Please contact Murata or Murata representative for soldering condition, in case of using lead free solder.
6. Do not use strong acidity flux, more than 0.2wt% chlorine content, in flow soldering.
7. In case of covering filter with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.
8. Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miscorrelation if there is any deviation, especially stray capacitance, from the test circuit in the specification.

Notice (Handling)

■ CERAFIL® 455kHz Chip Type PFWCC Series

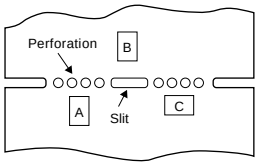
1. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
2. Design layout of components on the PC board to minimize the stress imposed on the warp or flexure of the board.
3. After installing chips, if solder is excessively applied to the circuit board, mechanical stress will cause destruction resistance characteristics to lower. To prevent this, be extremly careful in determining shape and dimension before designing the circuit board diagram.

[Component direction]



Put the component lateral to the direction in which stress acts.

[Component layout close to board]



Susceptibility to stress is in the order of : A>C>B

■ CERAFIL® 455kHz Chip Type SFPCA Series

1. The component will be damaged when an excessive stress is applied.
2. Use coupling capacitors to prevent applying D.C. voltage between input-ground, output-ground of "CERAFIL" as D.C. current may harm the component.
3. In the case that the component is cleaned, confirm that no reliability degradation is created.
4. In case of covering filter with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.
5. Do not use strong acidity flux, more than 0.2wt% chlorine content, in re-flow soldering.
6. The product, packed in the moisture-proof bag (dry pack), is sensitive to moisture. The following treatment is required before applying re-flow soldering, to avoid package cracks or reliability degradation caused by thermal stress. When unpacked, store the component in an atmosphere of below 25 degree C and below 65% R.H., and solder within 48 hours.

■ CERAFIL® 455kHz Lead Type

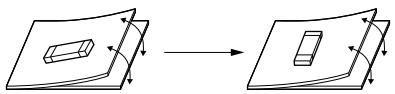
1. Do not use this product with bend. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
2. The component will be damaged when an excessive stress is applied.
3. All kinds of re-flow soldering must not be applied on the component.
4. Do not clean or wash the component as it is not hermetically sealed.
5. Do not use strong acidity flux, more than 0.2wt% chlorine content, in flow soldering.
6. In case of covering filter with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.
7. Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miscorrelation if there is any deviation, especially stray capacitance, from the test circuit in the specification.
8. Use coupling capacitors to prevent applying D.C. voltage between input-ground, output-ground of "CERAFIL" as D.C. current may harm the component.

Notice (Handling)

■ Ceramic Trap 4.5-6.5MHz Chip Type

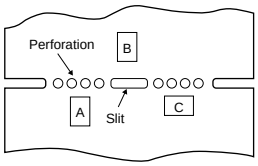
1. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
2. Design layout of components on the PC board to minimize the stress imposed on the wrap or flexure of the board.
3. After installing chips, if solder is excessively applied to the circuit board, mechanical stress will cause destruction resistance characteristics to lower. To prevent this, be extremely careful in determining shape and dimension before designing the circuit board diagram.
4. When the positioning claws and pick up nozzle are worn, the load is applied to the chip while positioning is concentrated to one positioning accuracy, etc. Careful checking and maintenance are necessary to prevent unexpected trouble.
5. When correcting chips with a soldering iron, the tip of the soldering iron should not directly touch the chip component.
6. Cleaning or washing of the component is not acceptable due to non sealed construction.
7. In case of covering filter with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.
8. Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miscorrelation if there is any deviation, especially stray capacitance, from the test circuit in the specification.

[Component direction]



Put the component lateral to the direction in which stress acts.

[Component layout close to board]



Susceptibility to stress is in the order of : A>C>B

■ Ceramic Trap 3.5-6.5MHz Lead Type

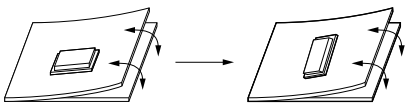
1. Do not use this product with bend. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
2. The component may be damaged when an excess stress is applied.
3. All kinds of re-flow soldering must not be applied on the component.
4. Do not clean or wash the component as it is not hermetically sealed.
5. Please contact Murata or Murata representative for soldering condition, in case of using lead free solder.
6. Do not use strong acidity flux, more than 0.2wt% chlorine content, in flow soldering.
7. In case of covering filter with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.
8. Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miscorrelation if there is any deviation, especially stray capacitance, from the test circuit in the specification.

Notice (Handling)

■ Ceramic Discriminator 10.7MHz Chip Type

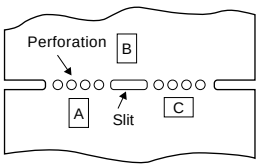
1. The component mounted on the PCB may be damaged if excess mechanical stress is applied.
2. Layout the components on the PCB to minimize the stress imposed by the warp or flexure of the board.
3. After installing components, if solder is excessively applied to the circuit board, mechanical stress will cause destruction resistance characteristics to be lower. To prevent this, be extremely careful in determining shape and dimension before designing the circuit board diagram.
4. When the positioning claw or pick up nozzle are worn, the excess load is applied to the components while positioning or placing are performed. Careful checking and maintenance are necessary to prevent unexpected trouble.
5. When correcting component's position with a soldering iron, the tip of the soldering iron should not directly touch the chip component. Depending on the soldering conditions, the effective area of terminations may be reduced. The use of solder containing Ag should be considerd to prevent the electrode erosion.
6. Do not clean or wash the component as it is not hermetically sealed.
7. In case of overcoating the part, coating conditions such as material, curing temperature, and so on must be evaluated deeply.
8. Accurate test circuit values are required to measure electrical characteristics.
   It may be a cause of miscorrelation if there is any deviation, especially stray capacitance, from the test circuit in the specification.

[Component direction]



Put the component laterally to the direction in which stress acts.

[Component layout close to board]



Susceptibility to stress is in the order of : A>C>B

■ Ceramic Discriminator 10.7MHz Lead Type

1. Do not use this product with bend. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
2. The component may be damaged when an excess stress is applied.
3. All kinds of re-flow soldering must not be applied on the component.
4. Do not clean or wash the component as it is not hermetically sealed.
5. Do not use strong acidity flux, more than 0.2wt% chlorine content, in flow soldering.
6. In case of covering discriminator with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.
7. Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miscorrelation if there is any deviation, especially stray capacitance, from the test circuit in the specification.

Notice (Handling)

■ Ceramic Discriminator 3.5-6.5MHz

1. Do not use this product with bend. The component may be damaged if excess mechanical stress is applied to it mounted on the printed circuit board.
2. The component may be damaged when an excess stress is applied.
3. All kinds of re-flow soldering must not be applied on the component.
4. Do not clean or wash the component as it is not hermetically sealed.
5. Please contact Murata or Murata representative for soldering condition, in case of using lead free solder.
6. Do not use strong acidity flux, more than 0.2wt% chlorine content, in flow soldering.
7. In case of covering filter with over coat, conditions such as material of resin, cure temperature, and so on should be evaluated carefully.
8. Accurate test circuit values are required to measure electrical characteristics. It may be a cause of miscorrelation if there is any deviation, especially stray capacitance, from the test circuit in the specification.

Packaging

■ Minimum Quantity

	Taping		Ammo Pack	Bulk	Magazine	Box
	ø330mm	ø180mm				
CERAFIL®<10.7MHz>						
SFECS		2,000				
SFECD		2,000				
SFECV		2,000				
SFELA			1,500	500		
SFELB			1,500	500		
SFVLA			1,000	500		
SFKLA			1,500	500		
SFTLA				500		
CERAFIL®<3.5-6.5MHz>						
SFSKA	3,000					
SFSRA			2,000	500		
SFSRL				500		
SFTRD				500		
SFSRH			1,500	500		
CERAFIL®<455kHz>						
PFWCC		1,000				
SFPCA	1,000					
SFULA				500	50	
SFZLA				200	50	
PFSLA			1,500	500		
PFWLA			1,500	500		
SFPLA					50	200
CFWLA					50	150
CFULA						200
BFULA				500		
Ceramic Traps<3.5-6.5MHz>						
TPSKA	3,000					
TPWKA	3,000					
TPSRA			2,000	500		
TPSRD			1,500	500		
TPWRD			1,500	500		
TPTRD			1,500	500		
Ceramic Discriminators<10.7MHz>						
CDSCB		2,000				
CDALA			1,500	500		
Ceramic Discriminators<3.5-6.5MHz>						
CDSRH			1,500	500		
CDSRL				500		

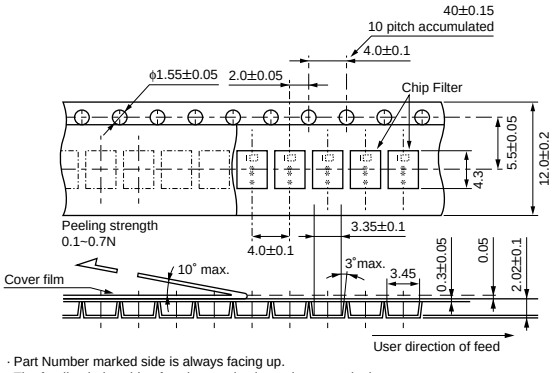
Continued on the following page.

Packaging

Continued from the preceding page.

■ CERAFIL® 10.7MHz Chip Type

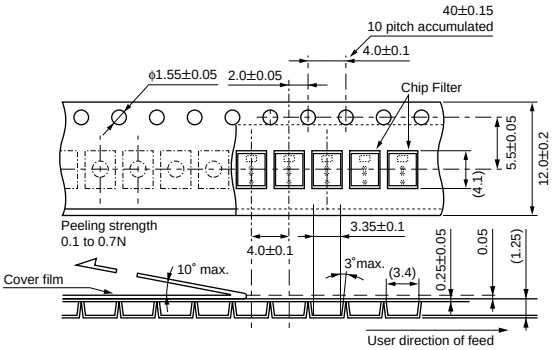
SFECS Series



· Part Number marked side is always facing up.
· The feeding holes side of cavity tape is always input terminal.

(in mm)

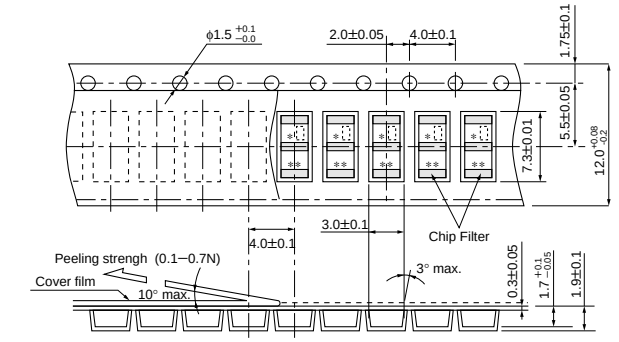
SFECD Series



· Part Number marked side is always facing up.
· The feeding holes side of cavity tape is always input terminal.

( ) : Reference
(in mm)

SFECV Series



Part number marked side is always facing up.
The feeding holes side of cavity tape is always input terminal.

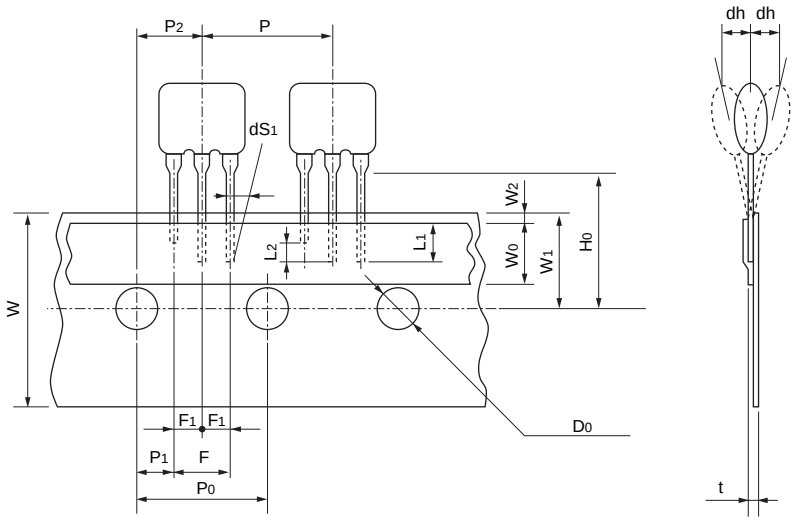
(in mm)

Continued on the following page.

Packaging

Continued from the preceding page.

■ CERAFIL® 10.7MHz Lead Type SF_LA Series



Item	Code	Dimensions	Tolerance	Remarks
Lead length under the hold down tape	L_1	3.0 min.		
Length of cut off	L_2	2.0 max.		To distinguish the direction
Pitch of components	P	12.7	±0.5	
Pitch of sprocket hole (I)	P_0	12.7	±0.2	
Length from hole center to lead	P_1	3.85	±0.5	
Length from hole center to component center	P_2	6.35	±0.5	
Lead spacing (I)	F	5.0	$^{+0.5}_{-0.2}$	
Lead spacing (II)	F_1	2.5	±0.2	
Slant to the forward or backward	dh	0	±1.0	
Slant to the left or right	dS_1	0	±1.0	
Width of carrier tape	W	18.0	±0.5	
Width of hold down tape	W_0	6.0 min.		
Position of sprocket hole	W_1	9.0	±0.5	
Gap of hold down tape and carrier tape	W_2	0	$^{+0.5}_{-0}$	Hold down tape doesn't exceed the carrier tape
Distance between the center of sprocket hole and lead stopper	H_0	18.0	±0.5	
Diameter of sprocket hole	D_0	ø4.0	±0.2	
Total tape thickness	t	0.6	±0.2	
Pitch of sprocket hole (II)	$P_0$20	254.0	±1.5	The pitch of 20 sprocket holes

(in mm)

Continued on the following page.

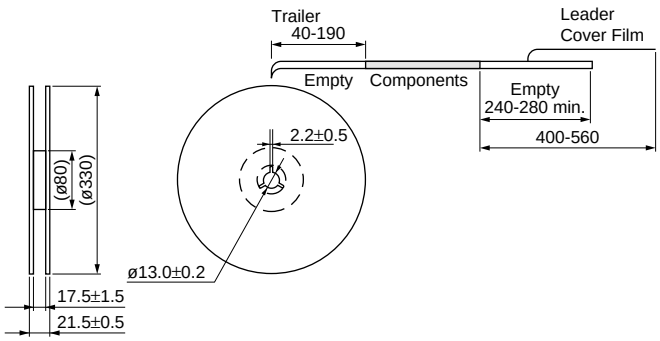
Packaging

Continued from the preceding page.

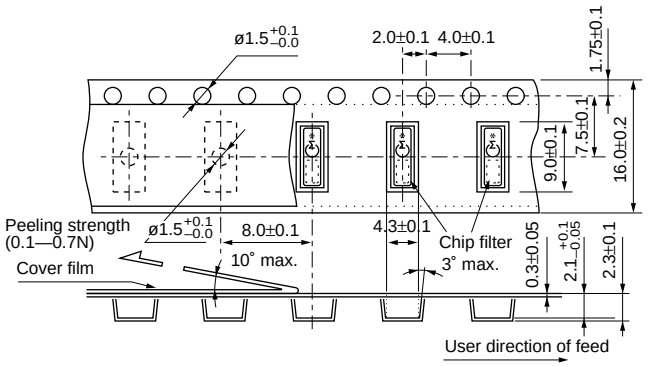
■ CERAFIL® 4.5-6.5MHz Chip Type SFSKA Series

Dimensions of Reel

Part Number marked side is always facing up.



Dimensions of carrier tape



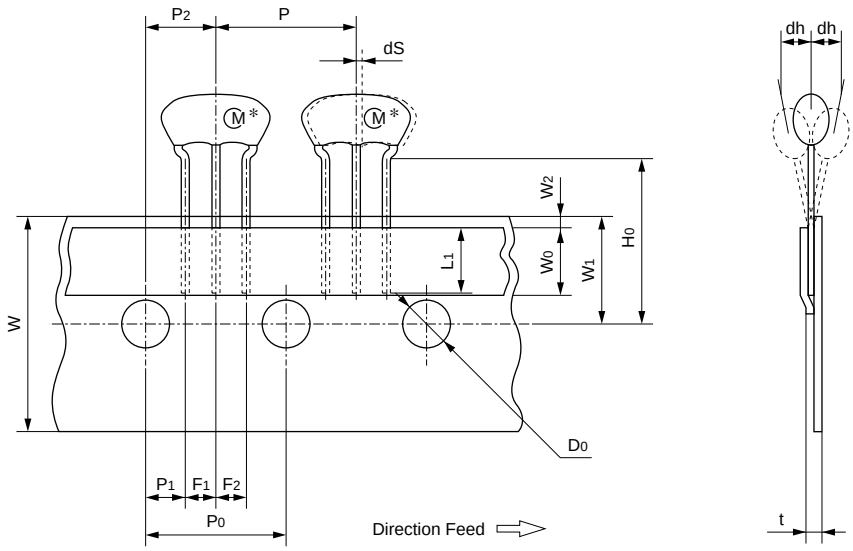
(in mm)

Continued on the following page.

Packaging

Continued from the preceding page.

■ CERAFIL® 4.5-6.5MHz Lead Type SFSRA Series



Item	Code	Dimensions	Tolerance	Remarks
Lead length under the hold down tape	L_1	5.0 min.		
Pitch of component	P	12.7	±0.5	Tolerance for Pitches 10×P_0=127±1
Pitch of sprocket hole (I)	P_0	12.7	±0.2	
Length from hole center to lead	P_1	3.85	±0.5	
Length from hole center to component center	P_2	6.35	±0.5	
Lead spacing (I)	F_1	2.5	±0.2	
Lead spacing (II)	F_2	2.5	±0.2	
Slant to the forward or backward	dh	0	±1.0	
Width of carrier tape	W	18.0	±0.5	
Width of hold down tape	W_0	6.0 min.		
Position of Sprocket hole	W_1	9.0	±0.5	
Gap of hold down tape and carrier Tape	W_2	0	$^{+0.5}_{-0}$	Hold down tape doesn't exceed the carrier tape.
Distance between the center of sprocket hole and lead stopper	H_0	18.0	±0.5	
Diameter of sprocket hole	D_0	ø4.0	±0.2	
Total tape thickness	t	0.6	±0.2	
Pitch of sprocket hole (II)	$P_0$20	254.0	±1.5	The pitch of 20 sprocket holes
Body tilt	dS	0	±1.0	

(in mm)

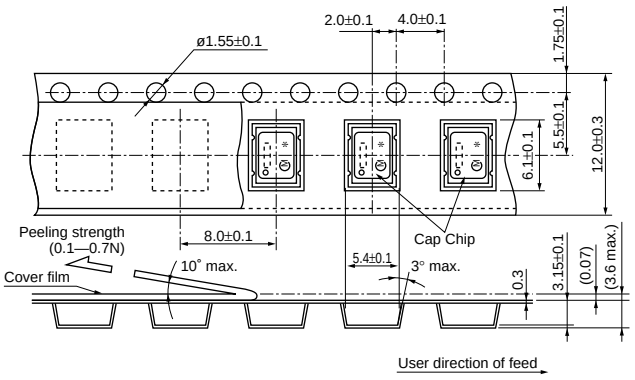
Continued on the following page.

Packaging

Continued from the preceding page.

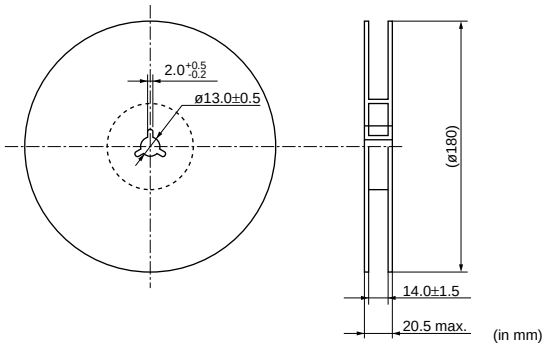
■ CERAFIL® 455kHz Chip Type PFWCC Series

Dimensions of Carrier Tape



Part Number marked side is always facing up.

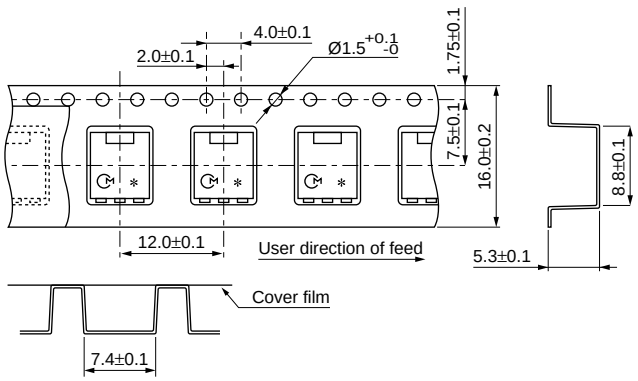
Dimensions of Reel



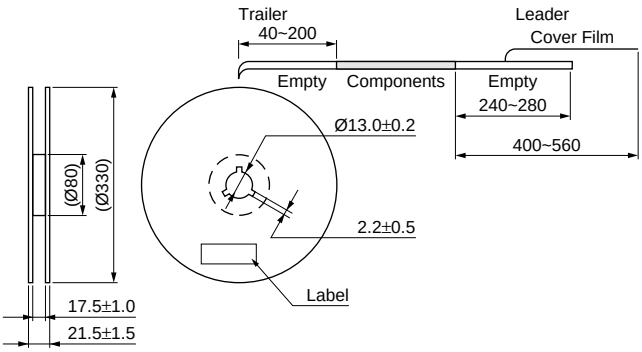
(in mm)

■ CERAFIL® 455kHz Chip Type SFPCA Series

Dimensions of Carrier Tape



Dimensions of Reel



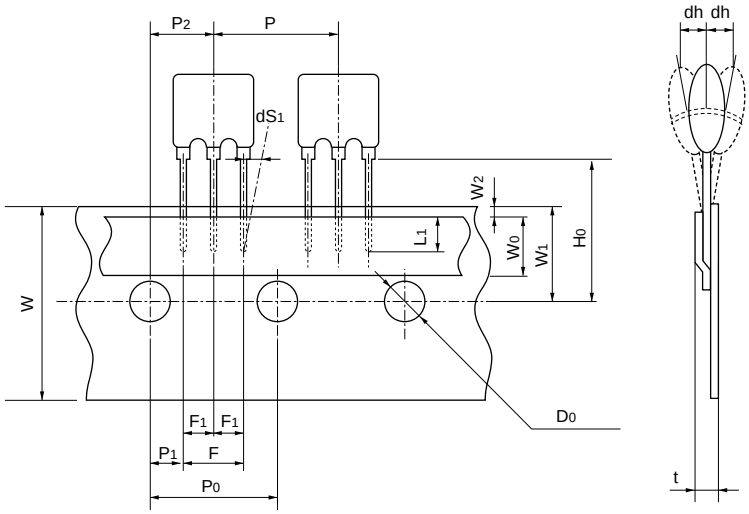
(in mm)

Continued on the following page.

Packaging

Continued from the preceding page.

■ CERAFIL® 455kHz Lead Type PFSLA/PFWLA Series



Item	Code	Dimensions	Tolerance	Note
Lead length under the hold down tape	L_1	3.0 min.		
Pitch of component	P	12.7	±0.5	
Pitch of sprocket hole (1)	P_0	12.7	±0.2	
Length from hole center to lead	P_1	3.85	±0.5	
Length from hole center to component center	P_2	6.35	±0.5	
Lead spacing (1)	F	5.0	$^{+0.5}_{-0.2}$	
Lead spacing (2)	F_1	2.5	±0.2	
Slant to the forward or backward	dh	0	±1.0	
Slant to the left or right	dS_1	0	±1.0	
Width of carrier tape	W	18.0	±0.5	
Width of hold down tape	W_0	6.0 min.		
Position of sprocket hole	W_1	9.0	±0.5	
Gap of hold down tape and carrier tape	W_2	0	$^{+0.5}_{-0}$	Hold-down tape doesn't exceed the carrier tape.
Distance between the center of sprocket hole and lead stopper	H_0	18.0	±0.5	
Diameter of sprocket hole	D_0	ø4.0	±0.2	
Total tape thickness	t	0.6	±0.2	
Pitch of sprocket hole (2)	$P_0$20	254.0	±1.5	The pitch of 20 sprocket holes

(in mm)

Continued on the following page.

Packaging

Continued from the preceding page.

■ CERAFIL® 455kHz Lead Type SFULA Series Standard of Magazine Cassette

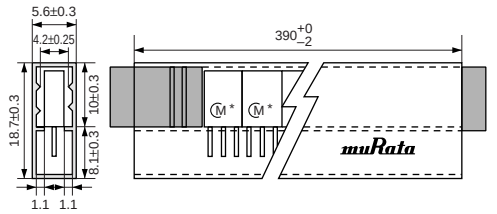
1. Putting CERAFIL® into Magazine

A magazine should contain 50pcs of CERAFIL®, with the marking of products all facing toward the "muRata" mark on a magazine, and be closed with exclusive stoppers at both ends. Above should be the minimum packaging unit.

2. Quality of Magazine

(1) Transparent so that input / output direction is visually recognizable.
(2) With an angle of 35° CERAFIL® should slip down smoothly.
(3) Antistatic finish
(4) Recycling
Note : Magazines should be sent back for recycling. (Therefore, empty magazines should not be damaged.)

3. Dimensions of Magazine Cassette



in mm
Tolerance unless otherwise specified : ±0.2

Material : Polycarbonate
Camber of Case : ±1mm max. against entire length (reference)
Twist of Case : ±0.5mm max. (reference)

■ CERAFIL® 455kHz Lead Type SFZLA Series Standard of Magazine Cassette

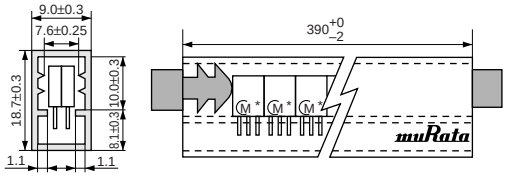
1. Putting CERAFIL® into Magazine

A magazine should contain 50pcs of CERAFIL®, with the marking of products all facing toward the "muRata" mark on a magazine, and be closed with exclusive stoppers at both ends. Above should be the minimum packaging unit.

2. Quality of Magazine

(1) Transparent so that input / output direction is visually recognizable.
(2) With an angle of 35° CERAFIL® should slip down smoothly.
(3) Antistatic finish
(4) Recycling
Note : Magazines should be sent back for recycling. (Therefore, empty magazines should not be damaged.)

3. Dimensions of Magazine Cassette



in mm
Tolerance unless otherwise specified : ±0.2

Material : Polycarbonate
Camber of Case : ±1mm max. against entire length (reference)
Twist of Case : ±0.5mm max. (reference)

■ CERAFIL® 455kHz Lead Type SFPLA Series Standard of Magazine Cassette

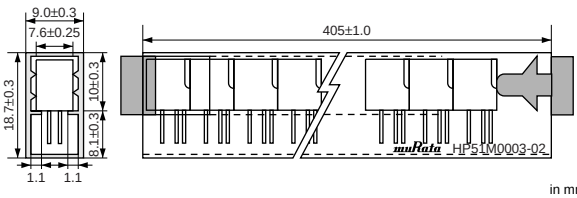
1. Putting CERAFIL® into Magazine

A magazine should contain 50pcs of CERAFIL®, which ground terminals are all facing toward the "muRata" mark on a magazine, and be closed with exclusive stoppers at the both ends. Above should be the minimum packaging unit.

2. Quality of Magazine

(1) Transparent so that input / output direction is visually recognizable.
(2) With an angle of 35° CERAFIL® should slip down smoothly.
(3) Antistatic finish
(4) Recycling
Note : Magazines should be sent back for recycling. (Therefore, empty magazines should not be damaged.)

3. Dimensions of Magazine Cassette



in mm
Tolerance unless otherwise specified : ±0.2

Material : Polycarbonate
Camber of Case : ±1mm max. against entire length (reference)
Twist of Case : ±0.5mm max. (reference)

Continued on the following page.

Packaging

Continued from the preceding page.

■ CERAFIL® 455kHz Lead Type CFWLA Series

Standard of Magazine Cassette

1. Putting CERAFIL® into Magazine

A magazine should contain 50pcs of CERAFIL®, with ground terminals all facing toward the "muRata" mark on a magazine, and be closed with exclusive stoppers at the both ends. Above should be the minimum packaging unit.

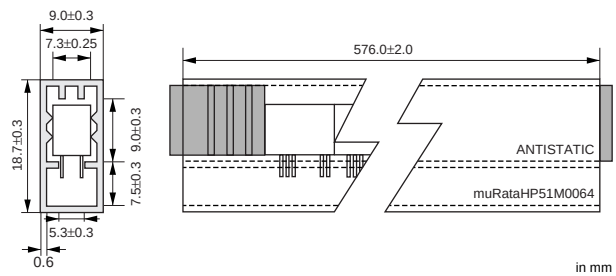
2. Quality of Magazine

(1) Transparent so that input / output direction is visually recognizable.
(2) With an angle of 35° CERAFIL® should slip down smoothly.
(3) Antistatic finish
(4) Recycling
Note : Magazines should be sent back for recycling. (Therefore, empty magazines should not be damaged.)

3. Magazine should be packaged in a cardboard box.

MURATA model name, quantity and outgoing inspection number should be indicated on the box.
Cardboard box may contain maximum 33 magazines (1,650 pieces of filter).

4. Dimensions of Magazine Cassette

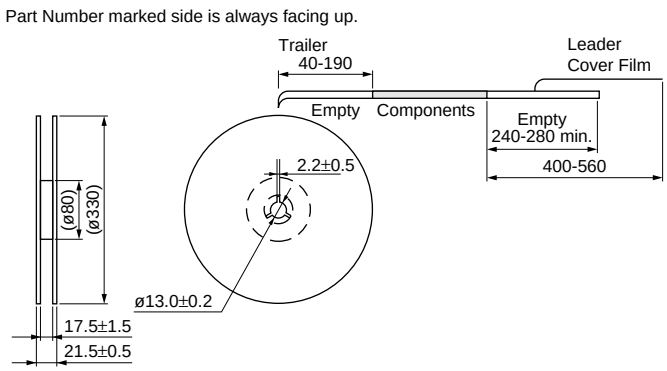


in mm
Tolerance unless otherwise specified : ±0.2

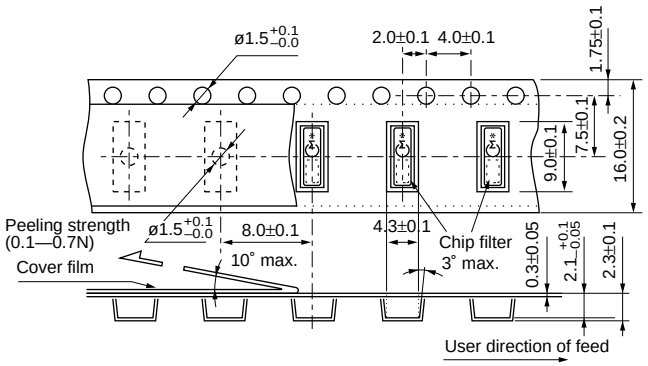
Material : Polycarbonate
Camber of Case : ±1mm max. against entire length (reference)
Twist of Case : ±0.5mm max. (reference)

■ Ceramic Trap 4.5-6.5MHz Chip Type TPSKA Series

Dimensions of Reel



Dimensions of carrier tape



(in mm)

Continued on the following page.

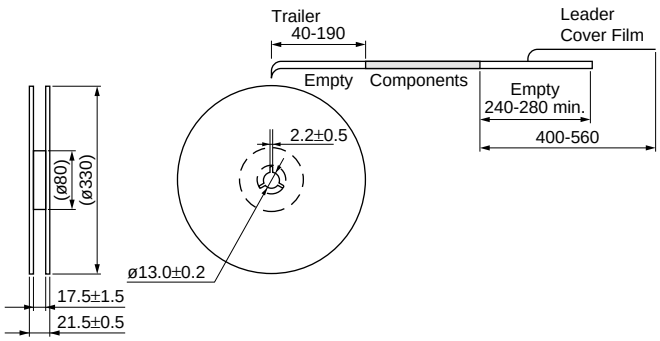
Packaging

Continued from the preceding page.

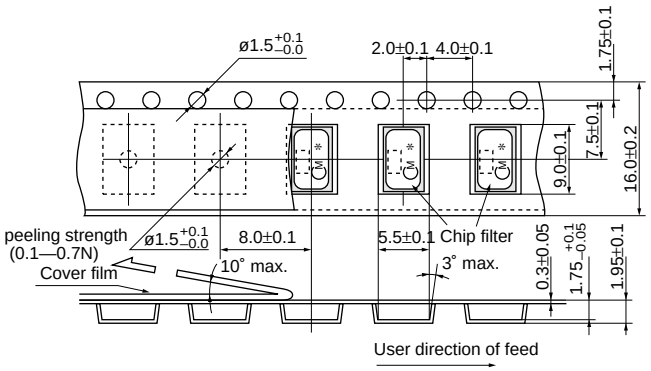
■ Ceramic Trap 4.5-6.5MHz Chip Type TPWKA Series

Dimensions of Reel

Part Number marked side is always facing up.



Dimensions of carrier tape



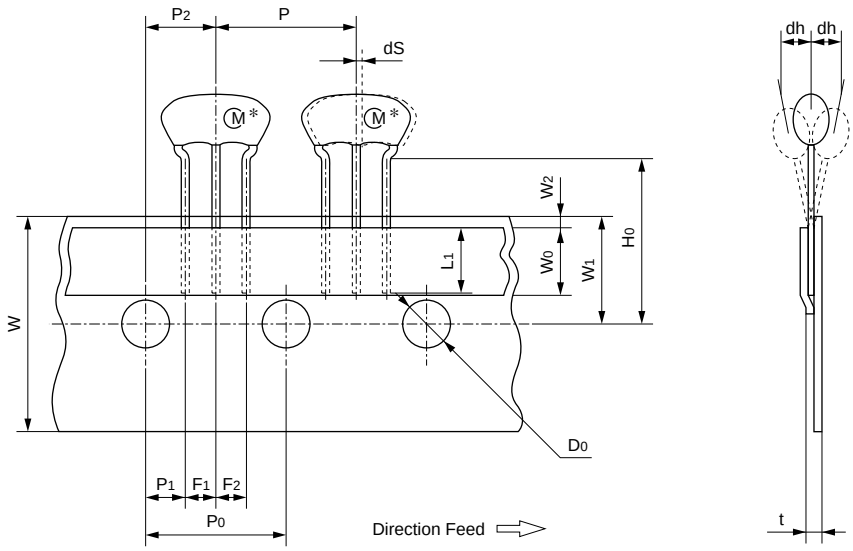
(in mm)

Continued on the following page.

Packaging

Continued from the preceding page.

■ Ceramic Trap 4.5-6.5MHz Lead Type TPSRA Series



Item	Code	Dimensions	Tolerance	Remarks
Lead length under the hold down tape	L_1	5.0 min.		
Pitch of component	P	12.7	±0.5	Tolerance for Pitches 10×P_0=127±1
Pitch of sprocket hole (I)	P_0	12.7	±0.2	
Length from hole center to lead	P_1	3.85	±0.5	
Length from hole center to component center	P_2	6.35	±0.5	
Lead spacing (I)	F_1	2.5	±0.2	
Lead spacing (II)	F_2	2.5	±0.2	
Slant to the forward or backward	dh	0	±1.0	
Width of carrier tape	W	18.0	±0.5	
Width of hold down tape	W_0	6.0 min.		
Position of Sprocket hole	W_1	9.0	±0.5	
Gap of hold down tape and carrier Tape	W_2	0	$^{+0.5}_{-0}$	Hold down tape doesn't exceed the carrier tape.
Distance between the center of sprocket hole and lead stopper	H_0	18.0	±0.5	
Diameter of sprocket hole	D_0	ø4.0	±0.2	
Total tape thickness	t	0.6	±0.2	
Pitch of sprocket hole (II)	$P_0$20	254.0	±1.5	The pitch of 20 sprocket holes
Body tilt	dS	0	±1.0	

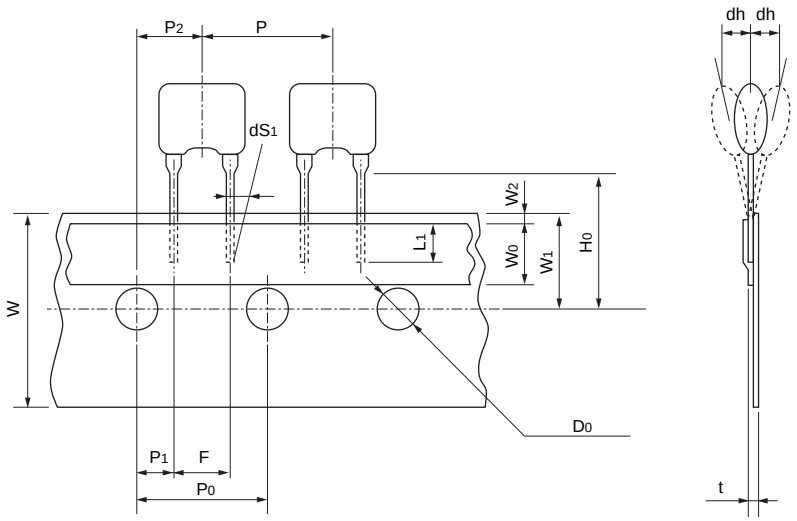
(in mm)

Continued on the following page.

Packaging

Continued from the preceding page.

■ Ceramic Trap 3.5-6.5MHz Lead Type TPSRD Series



Item	Code	Dimensions	Tolerance	Remarks
Lead length under the hold down tape	L_1	3.0 min.	———	
Pitch of component	P	12.7	±0.5	
Pitch of sprocket hole (I)	P_0	12.7	±0.2	
Length from hole center to lead	P_1	3.85	±0.5	
Length from hole center to component center	P_2	6.35	±0.5	
Lead spacing	F	5.0	+0.5 -0.2	
Slant to the forward or backward	dh	0	±1.0	
Slant to the left or right	dS_1	0	±1.0	
Width of carrier tape	W	18.0	±0.5	
Width of hold down tape	W_0	6.0 min.	———	
Position of sprocket hole	W_1	9.0	±0.5	
Gap of hold down tape and carrier tape	W_2	0	+0.5 -0.0	Hold down tape doesn't exceed the carrier tape
Distance between the center of sprocket hole and lead stopper	H_0	18.0	±0.5	
Diameter of sprocket hole	D_0	ø4.0	±0.2	
Total tape thickness	t	0.6	±0.2	
Pitch of sprocket hole (II)	Po20	254.0	±1.5	The pitch of 20 sprocket holes

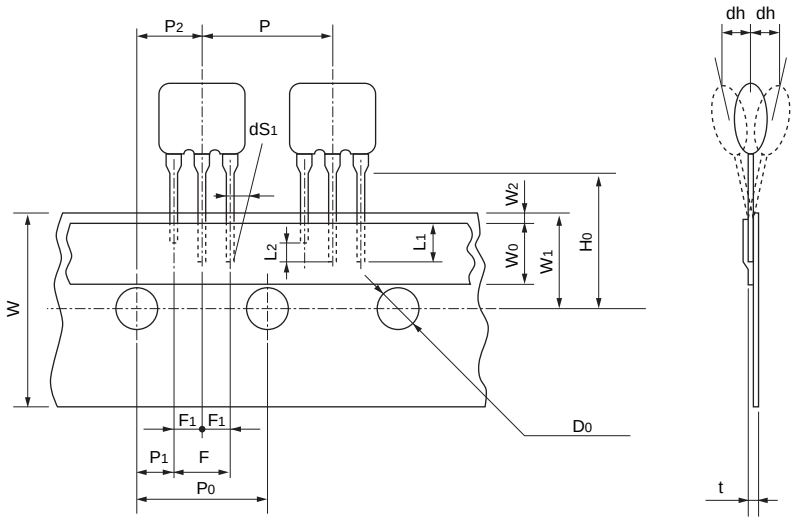
(in mm)

Continued on the following page.

Packaging

Continued from the preceding page.

■ Ceramic Trap 3.5-6.5MHz Lead Type TPSRD_W/TPWRD/TPTRD Series



Item	Code	Dimensions	Tolerance	Remarks
Lead length under the hold down tape	L_1	3.0 min.		
Length of cut off	L_2	2.0 max.		To distinguish the direction
Pitch of components	P	12.7	±0.5	
Pitch of sprocket hole (I)	P_0	12.7	±0.2	
Length from hole center to lead	P_1	3.85	±0.5	
Length from hole center to component center	P_2	6.35	±0.5	
Lead spacing (I)	F	5.0	$^{+0.5}_{-0.2}$	
Lead spacing (II)	F_1	2.5	±0.2	
Slant to the forward or backward	dh	0	±1.0	
Slant to the left or right	dS_1	0	±1.0	
Width of carrier tape	W	18.0	±0.5	
Width of hold down tape	W_0	6.0 min.		
Position of sprocket hole	W_1	9.0	±0.5	
Gap of hold down tape and carrier tape	W_2	0	$^{+0.5}_{-0}$	Hold down tape doesn't exceed the carrier tape
Distance between the center of sprocket hole and lead stopper	H_0	18.0	±0.5	
Diameter of sprocket hole	D_0	ø4.0	±0.2	
Total tape thickness	t	0.6	±0.2	
Pitch of sprocket hole (II)	$P_0$20	254.0	±1.5	The pitch of 20 sprocket holes

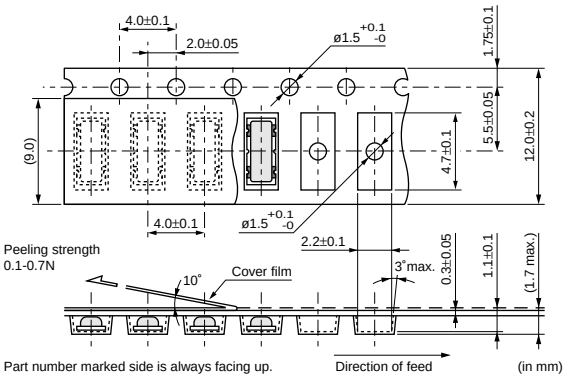
(in mm)

Continued on the following page.

Packaging

Continued from the preceding page.

■ Ceramic Discriminator 10.7MHz Chip Type CDSCB Series

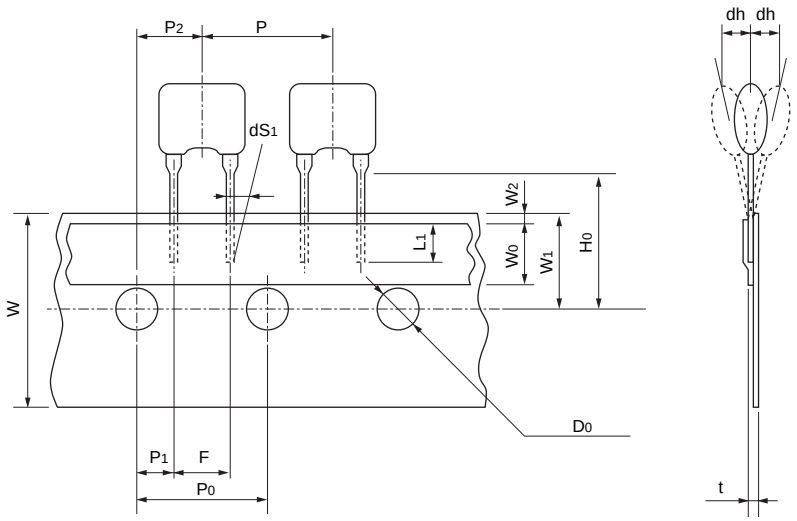


Continued on the following page.

Packaging

Continued from the preceding page.

■ Ceramic Discriminator 10.7MHz Lead Type CDALA Series



Item	Code	Dimensions	Tolerance	Remarks
Lead length under the hold down tape	L_1	3.0 min.	———	
Pitch of component	P	12.7	±0.5	
Pitch of sprocket hole (I)	P_0	12.7	±0.2	
Length from hole center to lead	P_1	3.85	±0.5	
Length from hole center to component center	P_2	6.35	±0.5	
Lead spacing	F	5.0	+0.5 -0.2	
Slant to the forward or backward	dh	0	±1.0	
Slant to the left or right	dS_1	0	±1.0	
Width of carrier tape	W	18.0	±0.5	
Width of hold down tape	W_0	6.0 min.	———	
Position of sprocket hole	W_1	9.0	±0.5	
Gap of hold down tape and carrier tape	W_2	0	+0.5 -0.0	Hold down tape doesn't exceed the carrier tape
Distance between the center of sprocket hole and lead stopper	H_0	18.0	±0.5	
Diameter of sprocket hole	D_0	ø4.0	±0.2	
Total tape thickness	t	0.6	±0.2	
Pitch of sprocket hole (II)	Po20	254.0	±1.5	The pitch of 20 sprocket holes

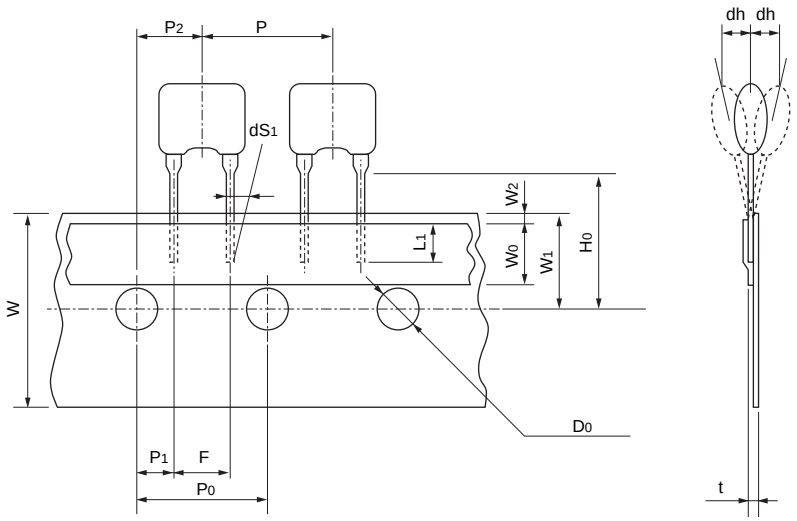
(in mm)

Continued on the following page.

Packaging

Continued from the preceding page.

■ Ceramic Discriminator 3.5-6.5MHz CDSRH_EK Series



Item	Code	Dimensions	Tolerance	Remarks
Lead length under the hold down tape	L_1	3.0 min.	———	
Pitch of component	P	12.7	±0.5	
Pitch of sprocket hole (I)	P_0	12.7	±0.2	
Length from hole center to lead	P_1	3.85	±0.5	
Length from hole center to component center	P_2	6.35	±0.5	
Lead spacing	F	5.0	+0.5 -0.2	
Slant to the forward or backward	dh	0	±1.0	
Slant to the left or right	dS_1	0	±1.0	
Width of carrier tape	W	18.0	±0.5	
Width of hold down tape	W_0	6.0 min.	———	
Position of sprocket hole	W_1	9.0	±0.5	
Gap of hold down tape and carrier tape	W_2	0	+0.5 -0.0	Hold down tape doesn't exceed the carrier tape
Distance between the center of sprocket hole and lead stopper	H_0	18.0	±0.5	
Diameter of sprocket hole	D_0	ø4.0	±0.2	
Total tape thickness	t	0.6	±0.2	
Pitch of sprocket hole (II)	Po20	254.0	±1.5	The pitch of 20 sprocket holes

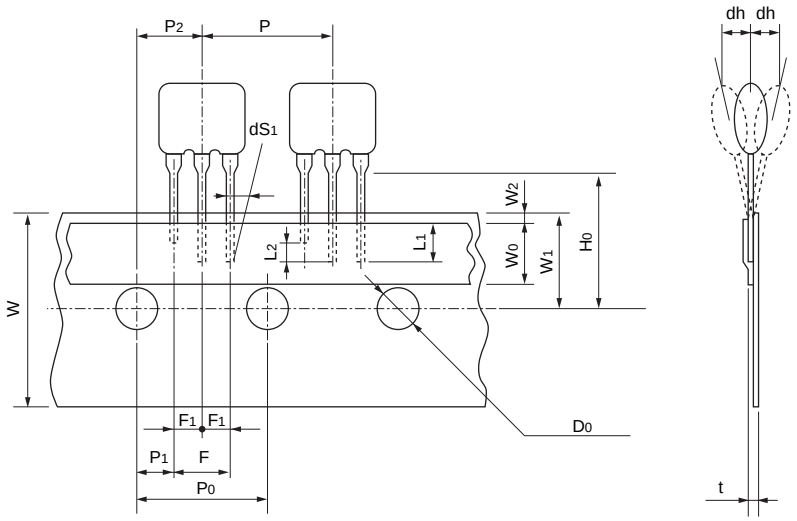
(in mm)

Continued on the following page.

Packaging

Continued from the preceding page.

■ Ceramic Discriminator 3.5-6.5MHz CDSRH_CK Series



Item	Code	Dimensions	Tolerance	Remarks
Lead length under the hold down tape	L_1	3.0 min.		
Length of cut off	L_2	2.0 max.		To distinguish the direction
Pitch of components	P	12.7	±0.5	
Pitch of sprocket hole (I)	P_0	12.7	±0.2	
Length from hole center to lead	P_1	3.85	±0.5	
Length from hole center to component center	P_2	6.35	±0.5	
Lead spacing (I)	F	5.0	$^{+0.5}_{-0.2}$	
Lead spacing (II)	F_1	2.5	±0.2	
Slant to the forward or backward	dh	0	±1.0	
Slant to the left or right	dS_1	0	±1.0	
Width of carrier tape	W	18.0	±0.5	
Width of hold down tape	W_0	6.0 min.		
Position of sprocket hole	W_1	9.0	±0.5	
Gap of hold down tape and carrier tape	W_2	0	$^{+0.5}_{-0}$	Hold down tape doesn't exceed the carrier tape
Distance between the center of sprocket hole and lead stopper	H_0	18.0	±0.5	
Diameter of sprocket hole	D_0	ø4.0	±0.2	
Total tape thickness	t	0.6	±0.2	
Pitch of sprocket hole (II)	$P_0$20	254.0	±1.5	The pitch of 20 sprocket holes

(in mm)

⚠Note:

1. Export Control
   〈For customers outside Japan〉
   Murata products should not be used or sold for use in the development, production, stockpiling or utilization of any conventional weapons or mass-destructive weapons (nuclear weapons, chemical or biological weapons, or missiles), or any other weapons.
   〈For customers in Japan〉
   For products which are controlled items subject to the “Foreign Exchange and Foreign Trade Law” of Japan, the export license specified by the law is required for export.
2. Please contact our sales representatives or product engineers before using the products in this catalog for the applications listed below, which require especially high reliability for the prevention of defects which might directly damage to a third party's life, body or property, or when one of our products is intended for use in applications other than those specified in this catalog.
   ① Aircraft equipment ② Aerospace equipment
   ③ Undersea equipment ④ Power plant equipment
   ⑤ Medical equipment ⑥ Transportation equipment (vehicles, trains, ships, etc.)
   ⑦ Traffic signal equipment ⑧ Disaster prevention / crime prevention equipment
   ⑨ Data-processing equipment ⑩ Application of similar complexity and/or reliability requirements to the applications listed in the above
3. Product specifications in this catalog are as of January 2003. They are subject to change or our products in it may be discontinued without advance notice. Please check with our sales representatives or product engineers before ordering. If there are any questions, please contact our sales representatives or product engineers.
4. Please read rating and ⚠CAUTION (for storage, operating, rating, soldering, mounting and handling) in this catalog to prevent smoking and/or burning, etc.
5. This catalog has only typical specifications because there is no space for detailed specifications. Therefore, please approve our product specifications or transact the approval sheet for product specifications before ordering.
6. Please note that unless otherwise specified, we shall assume no responsibility whatsoever for any conflict or dispute that may occur in connection with the effect of our and/or a third party's intellectual property rights and other related rights in consideration of your use of our products and/or information described or contained in our catalogs. In this connection, no representation shall be made to the effect that any third parties are authorized to use the rights mentioned above under licenses without our consent.
7. No ozone depleting substances (ODS) under the Montreal Protocol are used in our manufacturing process.

muRata **Murata Manufacturing Co., Ltd.**

http://www.murata.com/

Head Office
2-26-10, Tenjin Nagaokakyo-shi, Kyoto 617-8555, Japan Phone: 81-75-951-9111

International Division
3-29-12, Shibuya, Shibuya-ku, Tokyo 150-0002, Japan
Phone: 81-3-5469-6123 Fax: 81-3-5469-6155 E-mail: intl@murata.co.jp