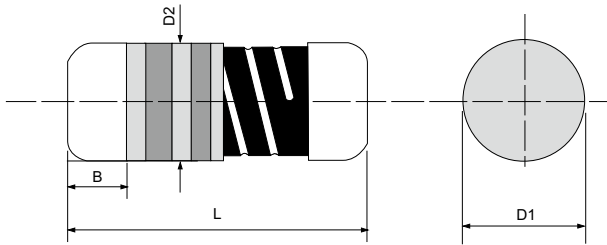


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HFT



Specifications Per

- IEC 60115-1
- EN 140401-803

Features

- SMD enabled structure
- Superior frequency response
- Excellent solderability termination
- Products meet RoHS requirements and do not contain substances of very high concern identified by European Chemicals Agency

DIMENSIONS

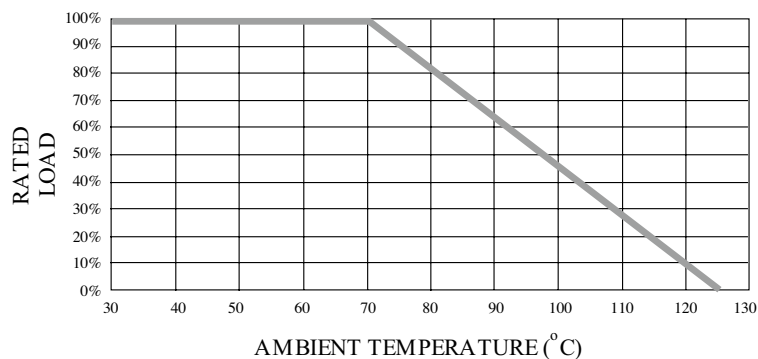
Type	Body Length (L, mm)	Cap Diameter (D1, mm)	Body Diameter (D2, mm)	Soldering Spot (B, mm)	Net Weight Per 1000 pcs
HFT204	3.52 ± 0.15	1.35 ± 0.1	D1+0.02/ -0.15	0.6 Min.	17 grams
HFT207	5.90 ± 0.20	2.20 ± 0.1	D1+0.02/ -0.2	1.0 Min.	66 grams
HFT101	5.90 ± 0.20	2.20 ± 0.1	D1+0.02/ -0.2	1.0 Min.	66 grams
HFT201	8.50 ± 0.50	3.00 ± 0.2	D1+0.05/ -0.35	1.3 Min.	186 grams

GENERAL SPECIFICATIONS

Type	Power Rating (at 70°C)	Maximum Working Voltage	Maximum Overload Voltage	Minimum Resistance	Maximum Resistance	Resistance Tolerance	Available Resistance Values
HFT204	1/4W	200V	400V	24.9Ω	75Ω	±0.1%~±1%	E-24/E-96
HFT207	1/3W	300V	500V	24.9Ω	75Ω	±0.1%~±1%	E-24/E-96
HFT101	1W	300V	500V	24.9Ω	75Ω	±0.1%~±1%	E-24/E-96
HFT201	2W	350V	700V	24.9Ω	75Ω	±0.1%~±1%	E-24/E-96

Special size, values, and specifications not listed available on special order.

POWER DERATING CURVE



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■ PART NUMBER

Example: HFT204F50R0TKZTR3K0

HFT204	F	50R0	TKZ	TR3K0
Type	Tolerance*	Resistance	TCR	Packaging
	B (0.1%) C (0.25%) D(0.5%) F (1%)	50Ω 4-character code containing - 3 significant digits 1 letter multiplier OHM MULTIPLIER R = 1 K = 10 ³ M = 10 ⁶ G = 10 ⁹	3-character code TKZ = Default Product Temperature Coefficient. Information of typical product temperature coefficient can be found in the Technical Summary section of the datasheet.**	5-character code TR = Tape Reel (pieces per reel) <u>HFT204</u> 3K0 = 3,000 6K0 = 6,000*** 10K = 10,000*** <u>HFT207/HFT101</u> <u>2K0 = 2,000</u> <u>6K0 = 6,000***</u> <u>10K = 10,000***</u> <u>HFT201</u> <u>2K5 = 2,500</u>

* Listed values may not be applicable to all resistance values. Please check with us before placing order.

** For the availabilities of non-default temperature coefficient, please check with us. Reference for TCR letter codes can be found in section (4) of Part Number Construction in the Appendices.

*** upon request

■ TECHNICAL SUMMARY

Characteristics	Limits
Dielectric Withstanding Voltage, VAC or DC	HFT204: 200VAC HFT207, HFT101: 500VAC HFT201: 700VAC
Temperature Coefficient, PPM / °C*	±50, ±100
Operating Temperature Range, °C	-55 ~ +125
Film Temperature, °C	125
Insulation Resistance, MΩ	>10 ⁴
Tin Whisker (JESD201 Temperature Cycling & High Temp. /Humidity Storage), μm	<5

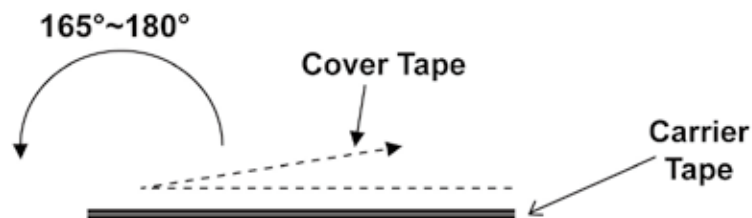
* Not applicable to all resistance values. Please check with us regarding the PPM of specific resistance value(s).

■ COVER TAPE PEELING SPECIFICATION

Recommended peeling force:

HFT204, HFT207, HFT101: 50±5gf

HFT201: 70±10gf



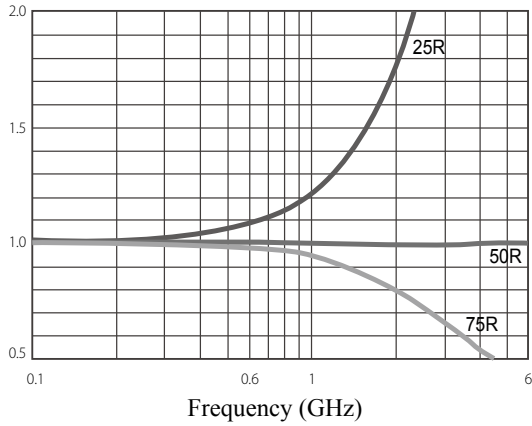
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■ FUNCTIONAL PERFORMANCE

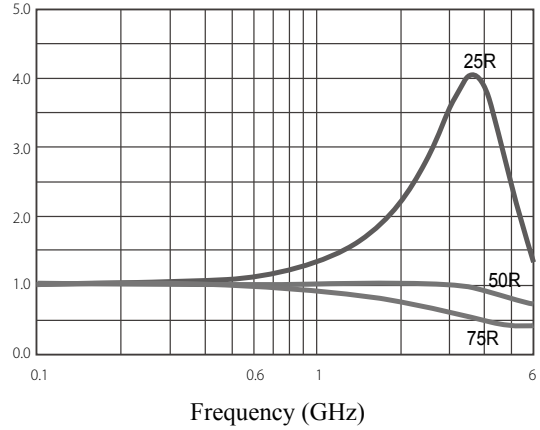
RF-BEHAVIOR

HFT

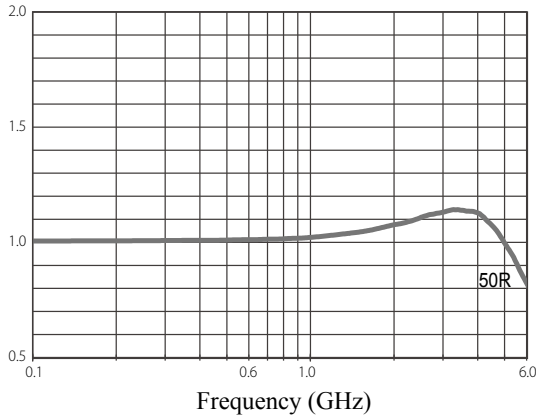
IZI/R for HFT204 MELF resistors



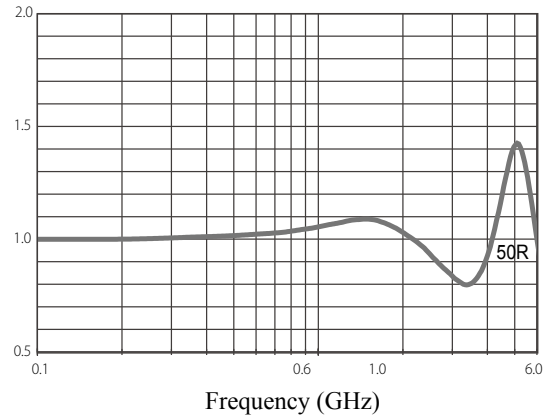
IZI/R for HFT207 MELF resistors



IZI/R for HFT101 MELF resistors



IZI/R for HFT201 MELF resistors

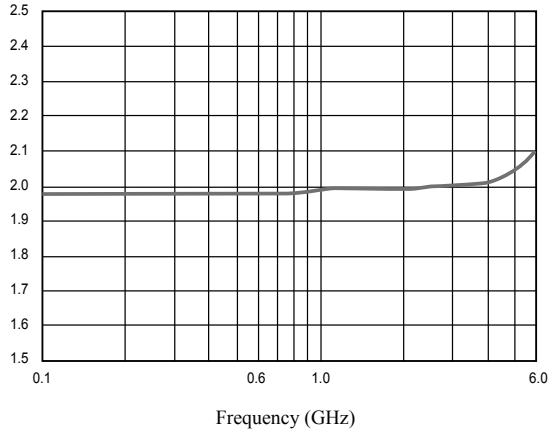


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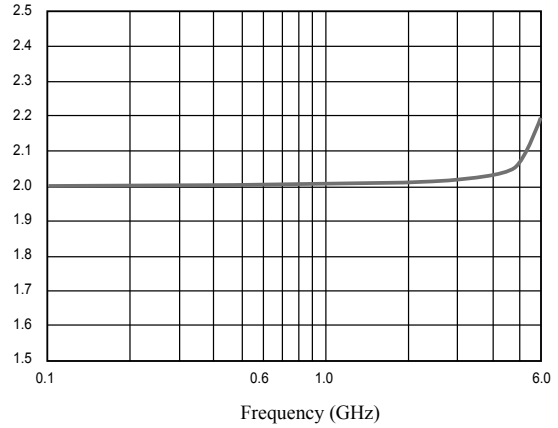
FUNCTIONAL PERFORMANCE

VSWR

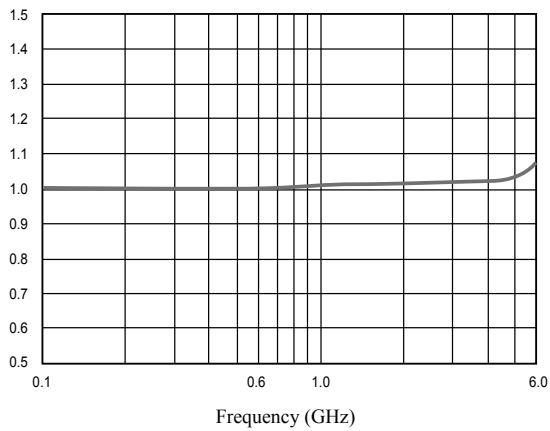
HFT204 25R MFLF Resistor



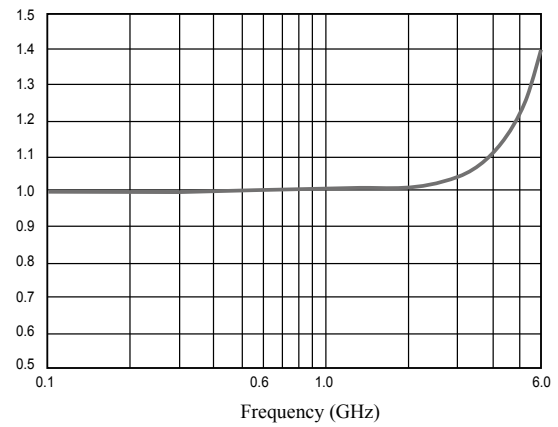
HFT207 25R MFLF Resistor



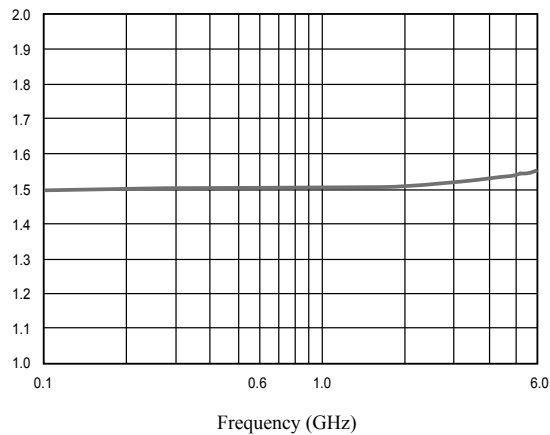
HFT204 50R MFLF Resistor



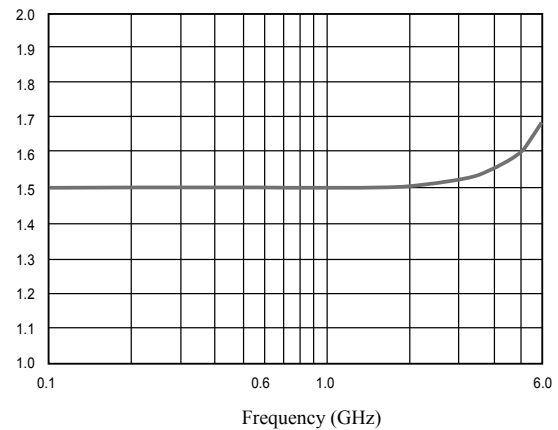
HFT207 50R MFLF Resistor



HFT204 75R MFLF Resistor



HFT207 75R MFLF Resistor

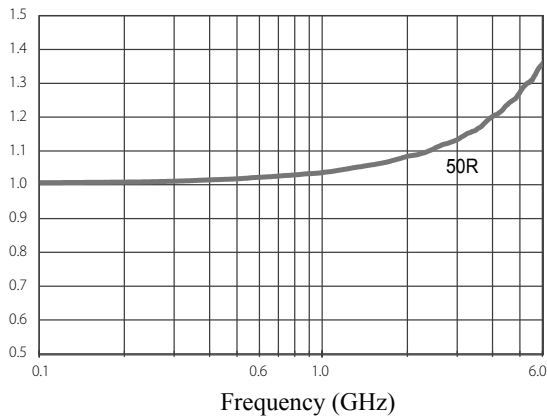


HFT

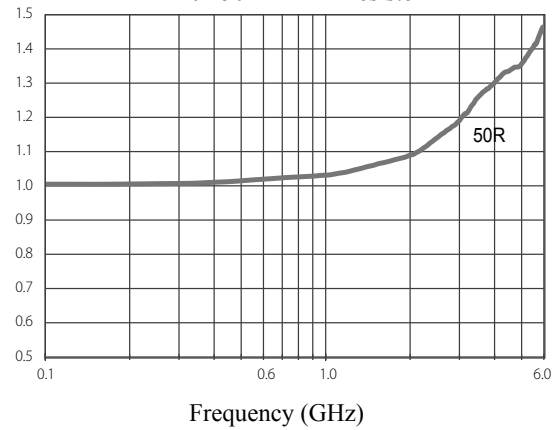
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HFT

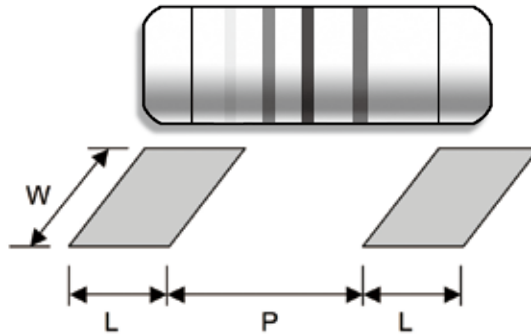
HFT101 50R MELF Resistor



HFT201 50R MELF Resistor



■ SUGGESTED PAD LAYOUT



Type	Soldering Mode	Pad Length (L, mm, Min.)	Pad Spacing (P, mm)	Pad Width (W, mm, Min.)
HFT204	Reflow	1.3	1.6 ± 0.1	1.6
	Wave	1.5	1.5 ± 0.1	1.8
HFT207	Reflow	2.0	3.0 ± 0.1	3.0
	Wave	2.5	3.0 ± 0.1	3.0
HFT101	Reflow	2.0	3.0 ± 0.1	3.0
	Wave	2.5	3.0 ± 0.1	3.0
HFT201	Reflow	3.0	4.9 ± 0.3	3.7
	Wave	3.5	4.8 ± 0.3	4.0

For better heat dissipation / lower heat resistance, increase W & L.

PERFORMANCE SPECIFICATIONS

Characteristics	Test Conditions	Limits
Short Time Overload	IEC 60115-1 4.13 5 seconds 2.5x rated voltage (not over max. overload voltage)	±0.5%
Load Life In Humidity	IEC 60115-1 4.24 56 days rated load (not over max. working voltage) at (40±2)°C and (93±3)% relative humidity	±2%
Load Life 1,000 hours	IEC 60115-1 4.25.1 Rated load (not over max. working voltage) with 1.5 hours ON, 0.5 hours OFF, at (70±2)°C	±2%
Periodic Electric Overload	IEC 60115-1 4.39 3.9x rated voltage (not over max. overload voltage) with 0.1s ON, 2.5s OFF for 1,000 cycles	±2%
Resistance To Soldering Heat	IEC 60115-1 4.18.2 Dip the resistor into a solder bath measured (260±5)°C and hold it for a 10±1 seconds	±0.5%
Solderability	IEC 60115-1 4.17.2 Solder area covered after (235±3)°C/(2±0.2) seconds with flux applied	95% Min.
Vibration	IEC 60115-1 4.22 Six hours in each parallel and axial direction with a simple harmonic motion having an amplitude of 1.52mm and 10 to 2,000 Hz.	±1%
Thermal Endurance	IEC 60115-1 4.25.3 1000 hours at 125°C without load	±2%
Thermal Shock	IEC 60115-1 4.19 -55°C 30minutes, +125°C 30minutes, 5 cycles	±0.5%
Single pulse high voltage overload	IEC 60115-1 4.27 10 pulses of 10/700µs at 10x rated voltage (not over max. overload voltage) with interval of 60 sec.	±1%
Electrostatic discharge (Human body model)	IEC 60115-1 4.38 3 positive & 3 negative discharges with 2KV for HFT204 or 4KV for HFT207	±2%
Climatic test	IEC 60115-1 4.23 4.23.2 - dry heat: 16 hours 125°C 4.23.3 - damp heat: 24 hours 55°C with 95% relative humidity 4.23.4 - cold: 2 hours -55°C 4.23.5 - negative air pressure: 2 hour 8.5KPa at (25±10)°C 4.23.6 - damp heat cyclic: 5 days 55°C with 95% relative humidity 4.23.7 - DC load: rated voltage at -55°C and 125°C each 1 Min.	±1%
Bending test	IEC 60115-1 4.33 Pressing depth 2mm, 3 times	±0.25%
Flammability	IEC 60115-1 4.35 Needle flame test 10s	No burning after 30s