



Aug. 2016 Ver.1.1
TDK Corporation

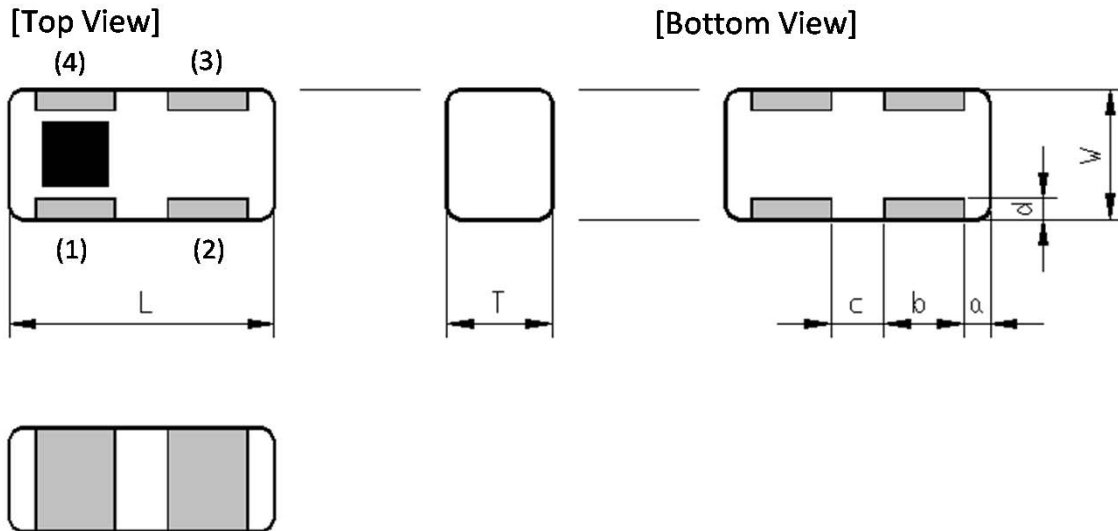
Multilayer LPF+Balun
For Bluetooth Low Energy

HHM Series 1.0x0.5mm [EIA 0402] TYPE

P/N: **DEA102500LT-9052A1**

DEA102500LT-9052A1

SHAPES AND DIMENSIONS



Dimensions (mm)

L	W	T	a	b	c	d
1.00	0.50	0.40	0.10	0.30	0.20	0.12
+/-0.05	+/-0.05	Max	+/-0.10	+/-0.10	+/-0.10	+/-0.10

Terminal functions

(1)	GND
(2)	Unbalanced Port
(3)	Balanced Port
(4)	Balanced Port

TEMPERATURE RANGE

Operating temperature	Storage temperature
-40 to +85 °C	-40 to +85 °C

TERMINATION FINISH

Material
Sn plate

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■ ELECTRICAL CHARACTERISTICS

(Measurement)

In-band specifications

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Unbalanced Port Characteristic Impedance	2360 to 2500	50		
Balanced Port Characteristic Impedance	2360 to 2500	Match to NXP NxH2003		
Return Loss (dB)	2360 to 2500	10	15.1	-
Phase Balance (deg.)	2360 to 2500	170	178.0	190
Amplitude Balance (dB)	2360 to 2500	-1.5	0.57	1.5
Insertion Loss (dB)	2360 to 2500	-	0.62	0.90
Power Handling (W)		-		0.08

 $T_a = +25 \pm 5^\circ\text{C}$

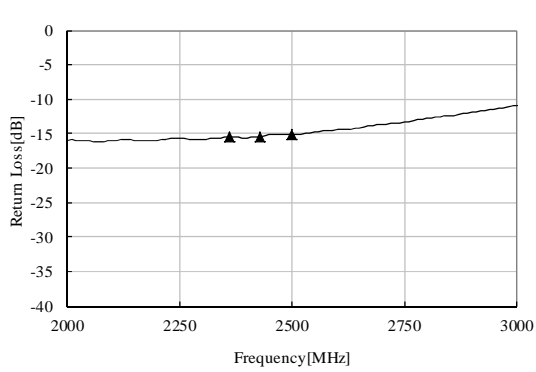
Out of band specifications

Parameter	Frequency (MHz)	TDK Spec		
		Min.	Typ.	Max.
Differential mode impedance (ohm)		100		
Common mode impedance (ohm)		25		
Differential mode attenuation (dB)	4800 to 5000	5	8.4	-
Common mode attenuation (dB)	4800 to 5000	20	24.7	-
Differential mode attenuation (dB)	7200 to 7500	15	25.9	-
Common mode attenuation (dB)	7200 to 7500	5	14.7	-
Differential mode attenuation (dB)	9600 to 10000	5	26.7	-
Common mode attenuation (dB)	9600 to 10000	10	18.0	-

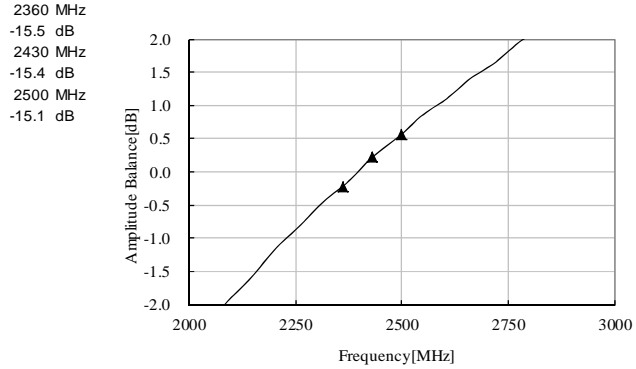
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FREQUENCY CHARACTERISTICS

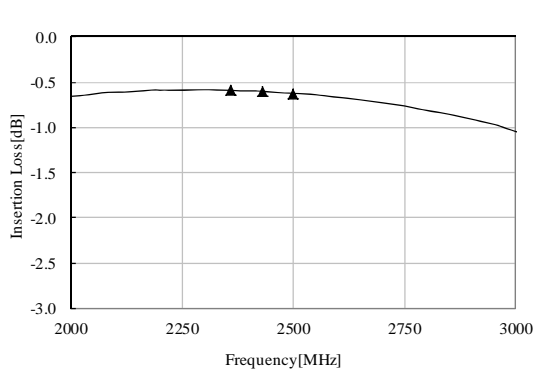
Return Loss



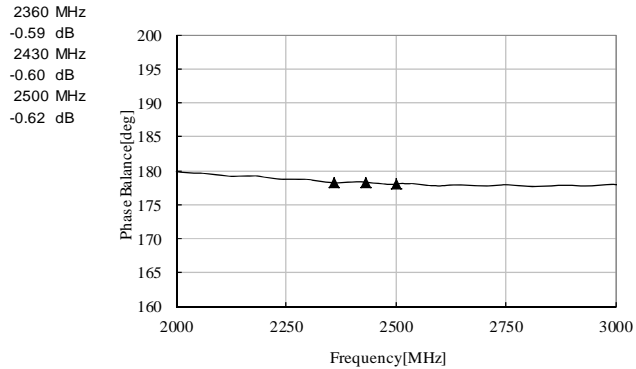
Amplitude Balance



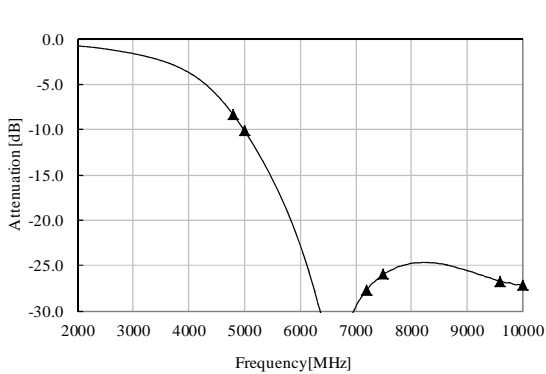
Insertion Loss



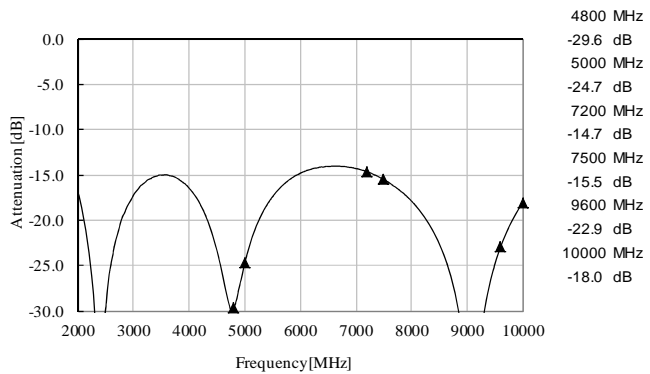
Phase Balance



Differential Mode

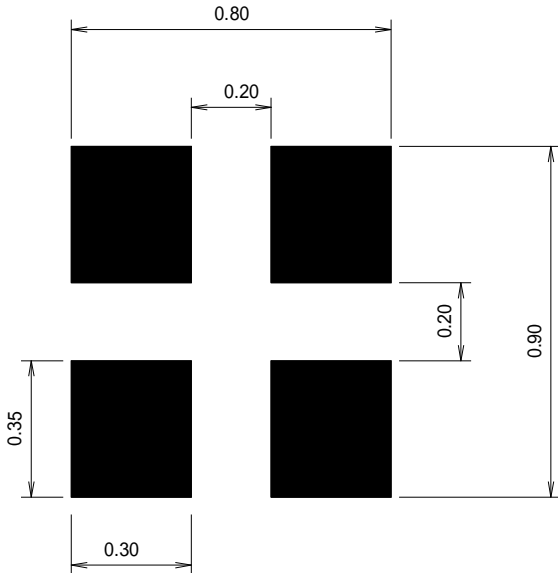


Common Mode

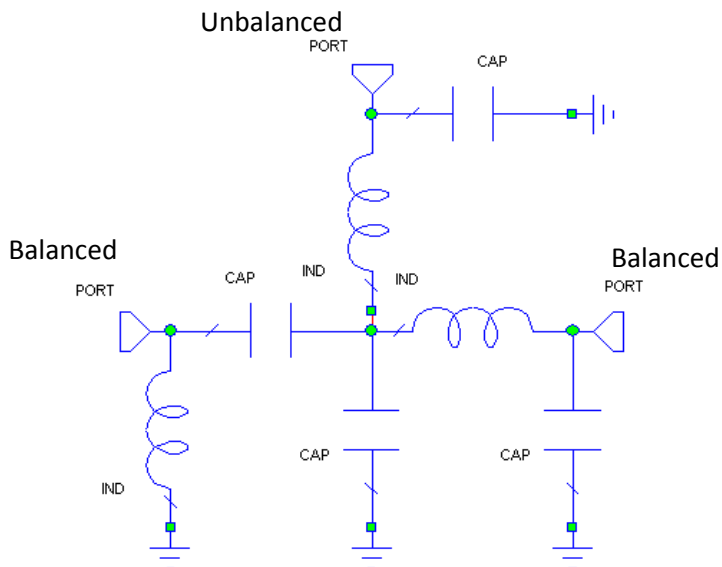


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RECOMMENDED LAND PATTERN



EVALUATLENT CIRCUIT



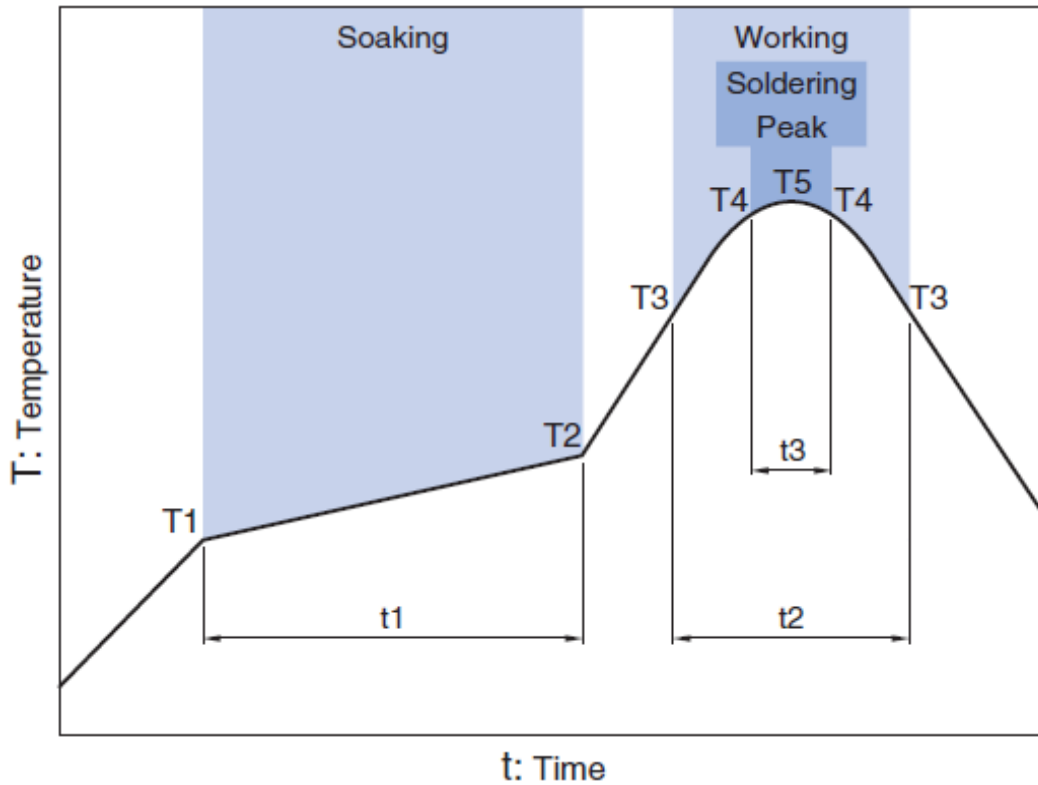
ENVIRONMENT INFORMATION

RoHS Statement
 RoHS Compliance

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■ RECOMMENDED REFLOW PROFILE

Pb free solder

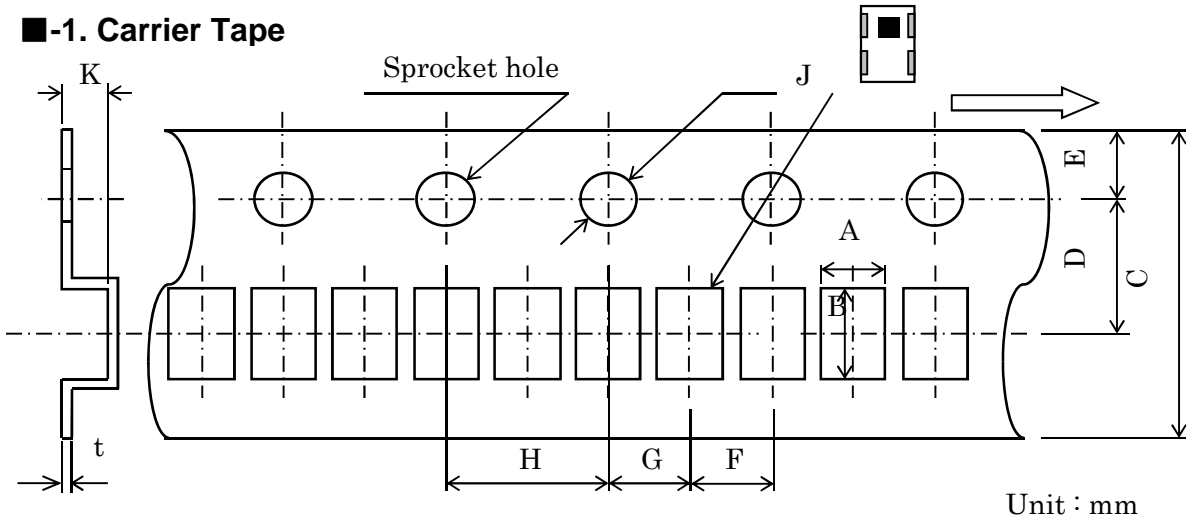


Soaking			Working		Soldering		Peak
Temp.	Temp.	Time	Temp.	Time	Temp.	Time	Temp.
T1	T2	t1	T3	t2	T4	t3	T5
150°C	180°C	60 to 120sec	230°C	more than 30sec	247 to 253°C	within 10sec	260°C Max.

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PACKAGING

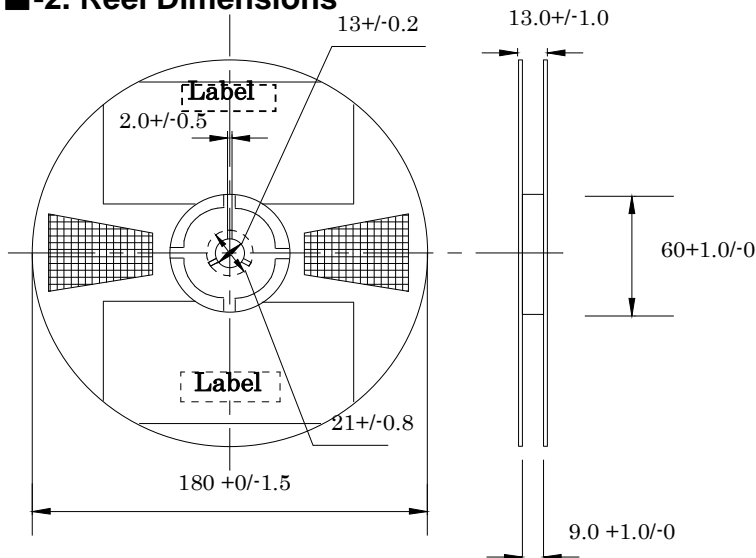
-1. Carrier Tape



Unit : mm

A	B	C	D	E	F	G	H	J	K	t
0.62	1.12	8.0	3.5	1.75	2.0	2.0	4.0	1.5	0.48	0.25
+/-0.05	+/-0.05	+/-0.2	+/-0.05	+/-0.1	+/-0.05	+/-0.05	+/-0.05	+0.1/-0	MAX	+/-0.05

-2. Reel Dimensions



Unit : mm

-3. Standard Reel Packaging quantities

STANDARD PACKAGE QUANTITY (pieces/reel)
10,000

REMINDERS FOR USING THESE PRODUCTS

Before using these products, be sure to request the delivery specifications.

SAFETY REMINDERS

Please pay sufficient attention to the warnings for safe designing when using these products.

 REMINDERS
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The products listed on this specification sheet are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.

The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property. Please understand that we are not responsible for any damage or liability caused by use of the products in any of the applications below or for any other use exceeding the range or conditions set forth in this specification sheet.

1. Aerospace/Aviation equipment
2. Transportation equipment (cars, electric trains, ships, etc.)
3. Medical equipment
4. Power-generation control equipment
5. Atomic energy-related equipment
6. Seabed equipment
7. Transportation control equipment
8. Public information-processing equipment
9. Military equipment
10. Electric heating apparatus, burning equipment
11. Disaster prevention/crime prevention equipment
12. Safety equipment
13. Other applications that are not considered general-purpose applications

When using this product in general-purpose applications, you are kindly requested to take into consideration securing protection circuit/equipment or providing backup circuits, etc., to ensure higher safety.