TDK

September 2016

Multilayer Diplexer

For 2400-2500MHz / 4900-5950MHz

DPX105950DT-6012A1

1.0x0.5mm [EIA 0402]*

*** Dimensions Code JIS[EIA]**

Multilayer Diplexer

Conformity to RoHS Directive

For 2400-2500MHz / 4900-5950MHz

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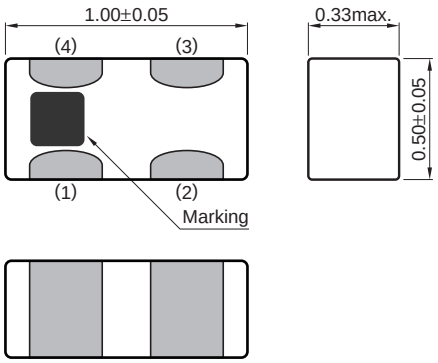
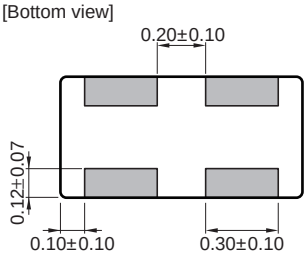
SHAPES AND DIMENSIONS

[Top view]



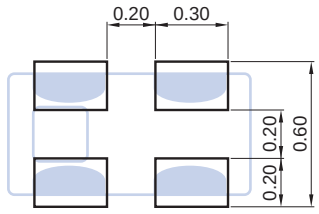
[Bottom view]



Terminal functions	
1	Common
2	GND
3	High-band
4	Low-band

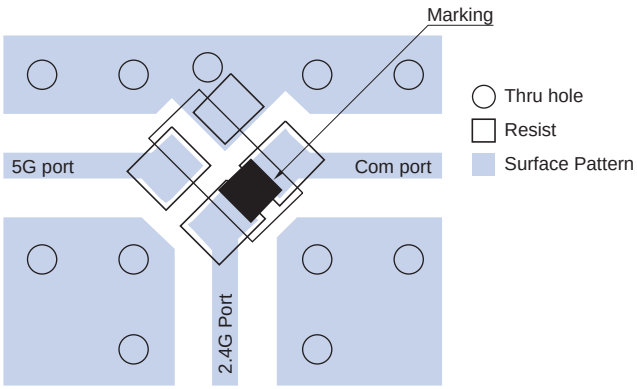
Dimensions in mm

RECOMMENDED LAND PATTERN



Dimensions in mm

EVALUATION BOARD



Material, Layer	Thickness
Top Resist	Resist
Copper Surface Pattern	0.035mm
FR-4	0.10mm
Copper Inner GND	0.018mm
FR-4	0.30mm
Copper Bottom GND	0.035mm

Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

○RoHS Directive Compliant Product: See the following for more details.https://product.tdk.com/info/en/environment/rohs/index.html

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■ELECTRICAL CHARACTERISTICS

□LOW-BAND

Item	Frequency Range (MHz)	Min.	Typ.	Max.
Insertion Loss (dB)	2400 to 2500	—	0.37	0.50
	2400 to 2500	—	—	0.60 (–40 to +85°C)
Return Loss (dB)	2400 to 2500	10	22	—
Attenuation (dB)	4800 to 6000	23	29	—
	7200 to 7500	23	29	—
Characteristic Impedance (Ω)			50 (Nominal)	

・Ta: +25±5°C

□HIGH-BAND

Item	Frequency Range (MHz)	Min.	Typ.	Max.
Insertion Loss (dB)	4900 to 5950	—	0.56	0.80
	4900 to 5950	—	—	1.00 (–40 to +85°C)
Return Loss (dB)	4900 to 5950	10	15	—
Attenuation (dB)	30 to 2400	25	29	—
	2400 to 2500	27	41	—
	2500 to 2690	23	29	—
	9800 to 11900	20	30	—
Characteristic Impedance (Ω)			50 (Nominal)	

・Ta: +25±5°C

□COMMON

Item	Frequency Range (MHz)	Min.	Typ.	Max.
Return Loss (dB)	2400 to 2500	10	22	—
	4900 to 5950	10	15	—
Power Handling (W)		—	—	1
Characteristic Impedance (Ω)			50 (Nominal)	

・Ta: +25±5°C

■TEMPERATURE RANGE

Temperature range	
Operating temperature (°C)	Storage temperature (°C)
–40 to +85	–40 to +85

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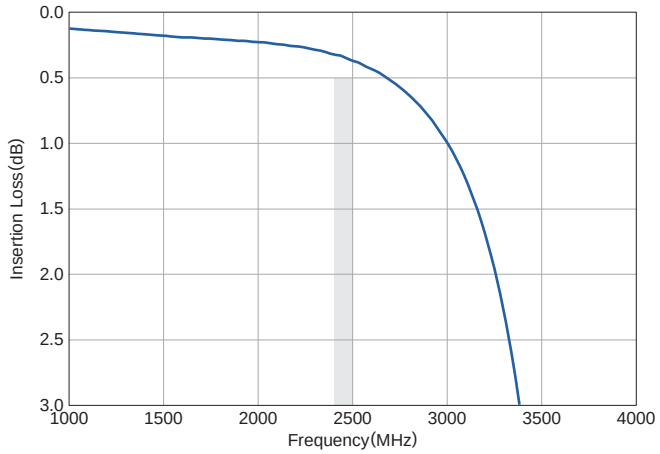
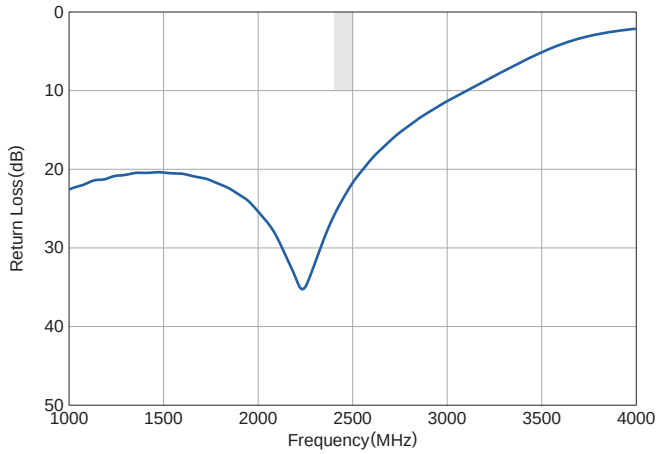
FREQUENCY CHARACTERISTICS

LOW-BAND

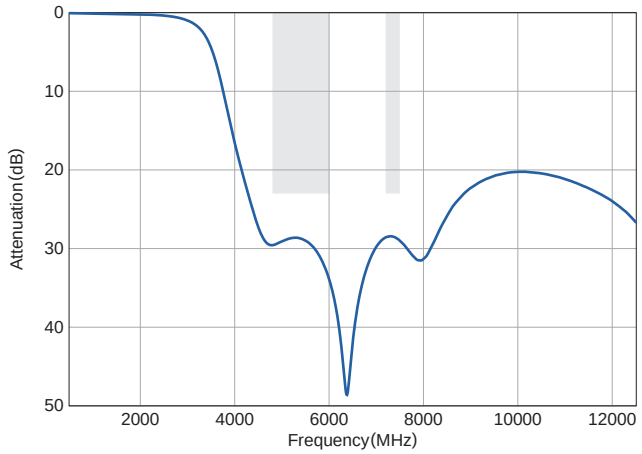
Insertion Loss



Return Loss

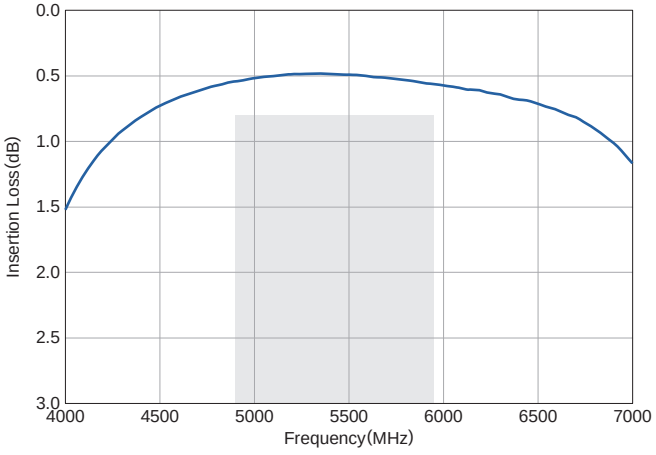


Attenuation

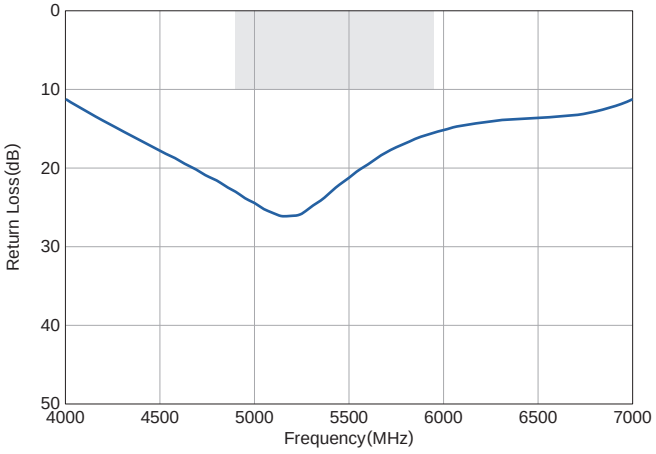


HIGH-BAND

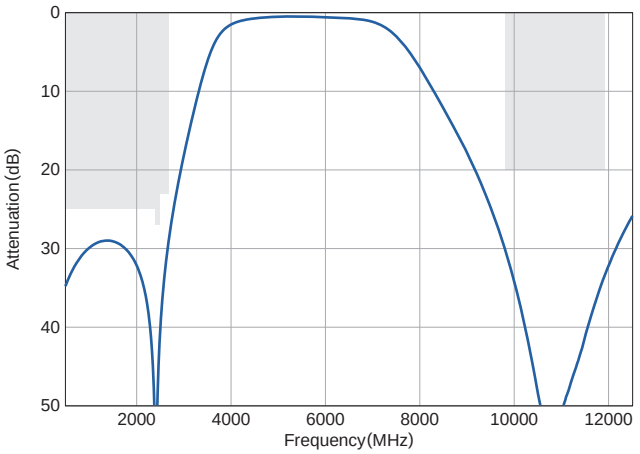
Insertion Loss



Return Loss



Attenuation



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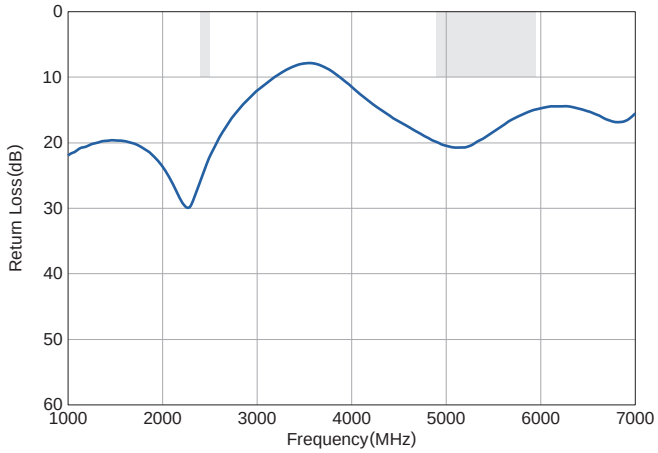
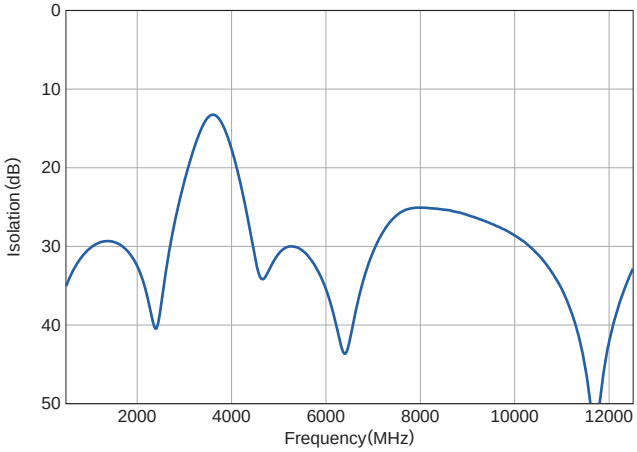
FREQUENCY CHARACTERISTICS

COMMON

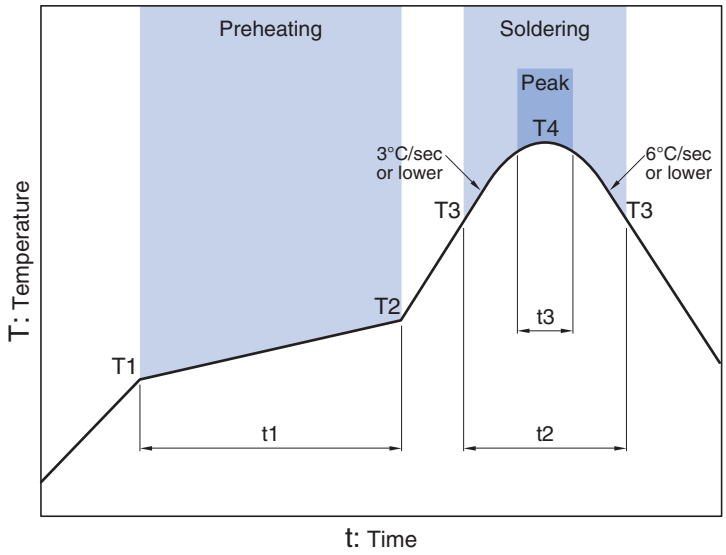
Return Loss



Isolation



RECOMMENDED REFLOW PROFILE



Preheating			Soldering			
			Critical zone (T3 to T4)		Peak	
Temp.		Time	Temp.	Time	Temp.	Time
T1	T2	t1	T3	t2	T4	t3*
150°C	200°C	60 to 120sec	217°C	60 to 120sec	240 to 260°C	30sec max.

* t3 : Time within 5°C of actual peak temperature
The maximum number of reflow is 3.

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

The products listed on this catalog 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 catalog.

(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.