



Multilayer Triplexer

For 450-960MHz / 1710-2690MHz / 3400-5850MHz

TPX255850MT-7013A3

2.5x2.0mm [EIA 1008]*

* Dimensions Code JIS[EIA]

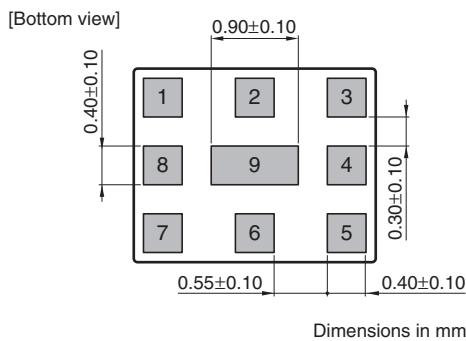
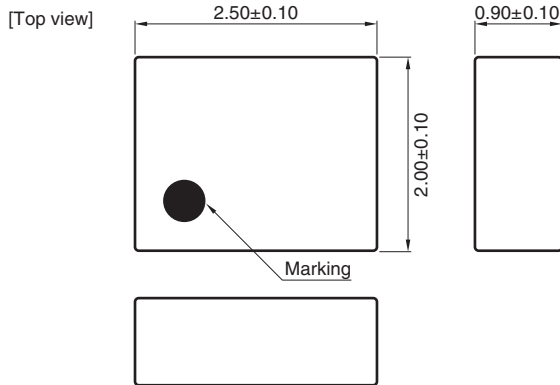
Multilayer Triplexer

Conformity to RoHS Directive

For 450-960MHz / 1710-2690MHz / 3400-5850MHz

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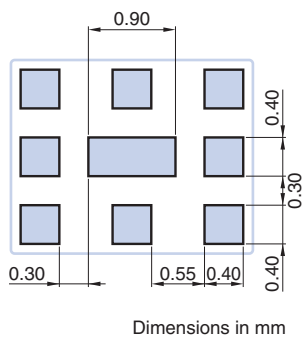
SHAPES AND DIMENSIONS



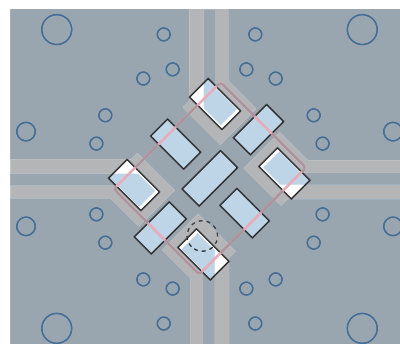
Terminal functions

1	High-Band Port
2	GND
3	Middle-Band Port
4	GND
5	Low-Band Port
6	GND
7	Common Port
8	GND
9	GND

RECOMMENDED LAND PATTERN



EVALUATION BOARD



- Thru Hole
- Resist
- Surface
- DUT
- Direction Mark

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>

- All specifications are subject to change without notice.
- Before using these products, be sure to request the delivery specifications.

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ELECTRICAL CHARACTERISTICS

LOW-BAND

Item	Frequency Range (MHz)	Min.	Typ.	Max.
Insertion Loss (dB)	450 to 960	—	0.34	0.45
	450 to 960	—	—	0.55 (−40 to +85°C)
Return Loss (dB) (Low-Band Port)	450 to 960	11.73	22.6	—
	1710 to 2690	15	18	—
Attenuation (dB)	3400 to 3800	20	28	—
	5150 to 5850	13	17	—
Characteristic Impedance (Ω)			50 (Nominal)	

· Ta: +25±5°C

MIDDLE-BAND

Item	Frequency Range (MHz)	Min.	Typ.	Max.
Insertion Loss (dB)	1710 to 2690	—	0.58	0.75
	1710 to 2690	—	—	0.90 (−40 to +85°C)
Return Loss (dB) (Middle-Band Port)	1710 to 2690	11.73	16.5	—
	450 to 960	15	18	—
Attenuation (dB)	3400 to 3800	13	16	—
	5150 to 5850	13	17	—
Characteristic Impedance (Ω)			50 (Nominal)	

· Ta: +25±5°C

HIGH-BAND

Item	Frequency Range (MHz)	Min.	Typ.	Max.
Insertion Loss (dB)	3400 to 3800	—	0.73	0.90
	5150 to 5850	—	0.35	0.65
	3400 to 3800	—	—	1.10 (−40 to +85°C)
	5150 to 5850	—	—	0.80 (−40 to +85°C)
Return Loss (dB) (High-Band Port)	3400 to 3800	9.54	15.9	—
	5150 to 5850	9.54	21.7	—
Attenuation (dB)	450 to 960	17	21	—
	1710 to 2690	15	18	—
Characteristic Impedance (Ω)			50 (Nominal)	

· Ta: +25±5°C

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ELECTRICAL CHARACTERISTICS

COMMON

Item	Frequency Range (MHz)	Min.	Typ.	Max.	
Isolation (dB)	Middle to High	1710 to 2690	15	18	—
		3400 to 3800	13	18	—
		5150 to 5850	13	19	—
	Middle to Low	450 to 960	15	19	—
		1710 to 2690	15	18	—
		450 to 703	20	24	—
	High to Low	703 to 803	20	23	—
		803 to 960	17	21	—
		3400 to 3800	20	29	—
		5150 to 5850	13	17	—
Return Loss (dB) (Common Port)	450 to 960	11.73	21.2	—	
	1710 to 2690	11.73	16.5	—	
	3400 to 3800	9.54	17.2	—	
	5150 to 5850	9.54	24.3	—	
Power Handling (W)	Low-Band	450 to 960	—	—	4 CW (Duty 50%)
	Middle-Band	1710 to 2690	—	—	1 CW
	High-Band	3400 to 5850	—	—	1 CW
Characteristic Impedance (Ω)			50 (Nominal)		

· Ta: +25±5°C

TEMPERATURE RANGE

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

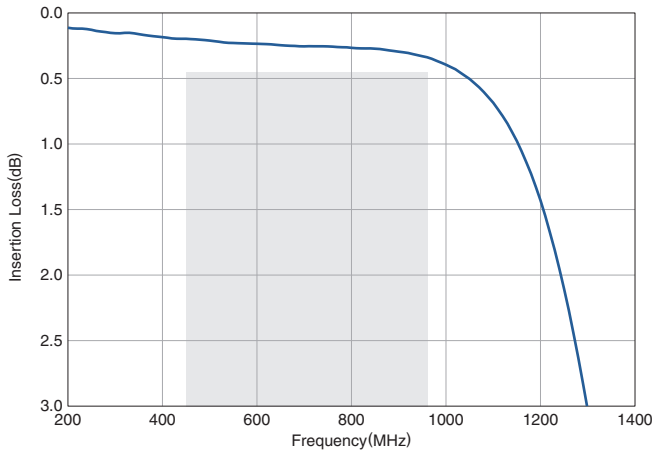
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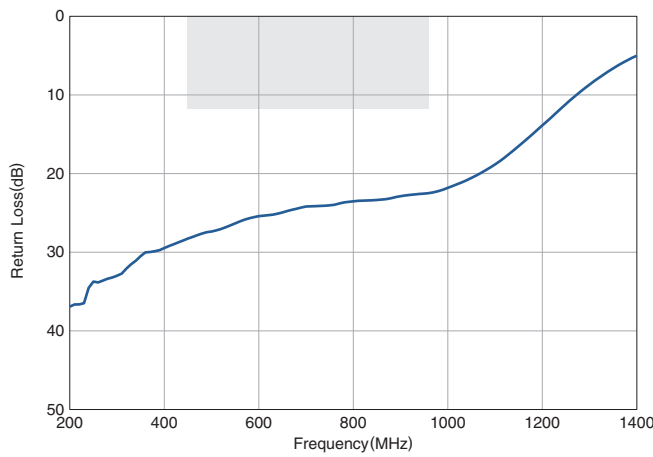
FREQUENCY CHARACTERISTICS

LOW-BAND

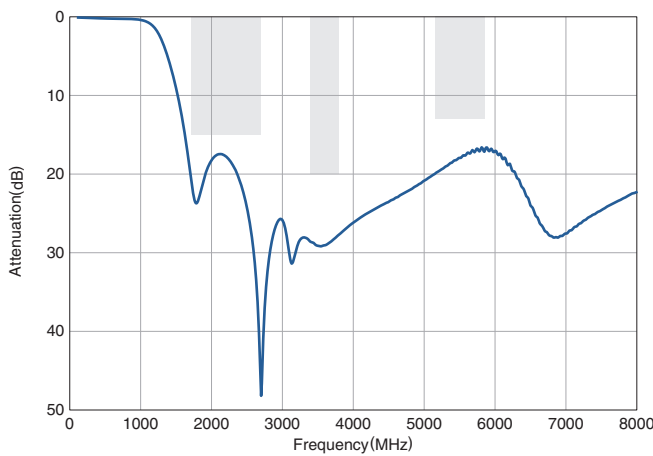
Insertion Loss



Return Loss

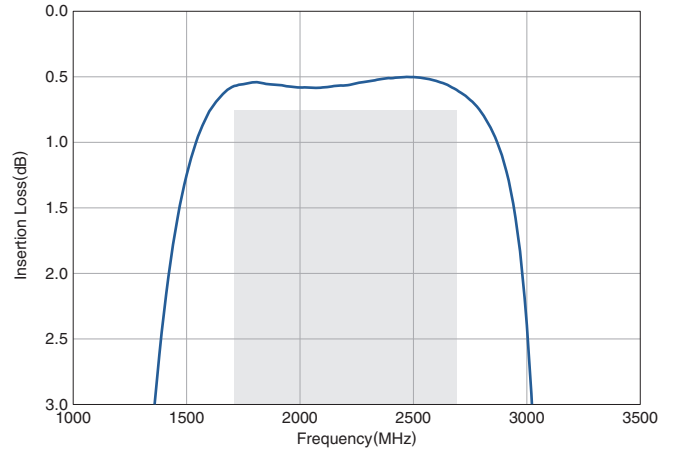


Attenuation

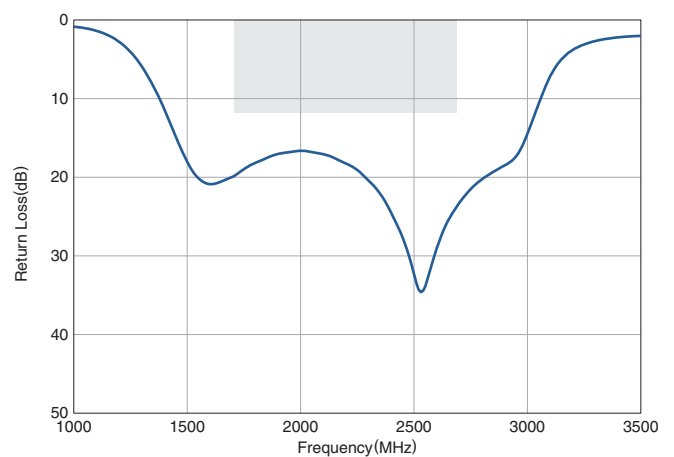


MIDDLE-BAND

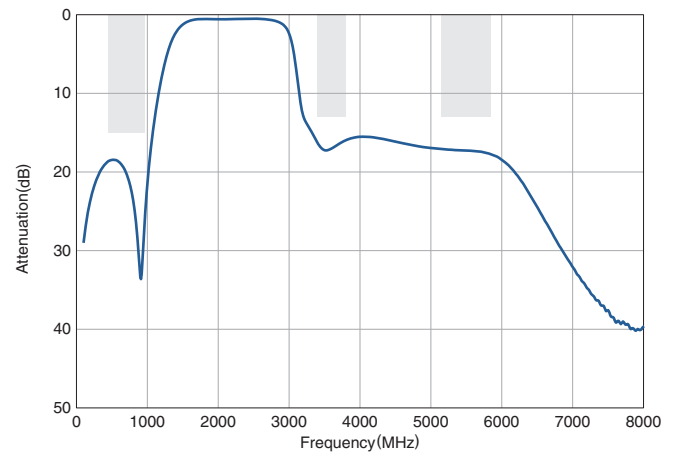
Insertion Loss



Return Loss



Attenuation



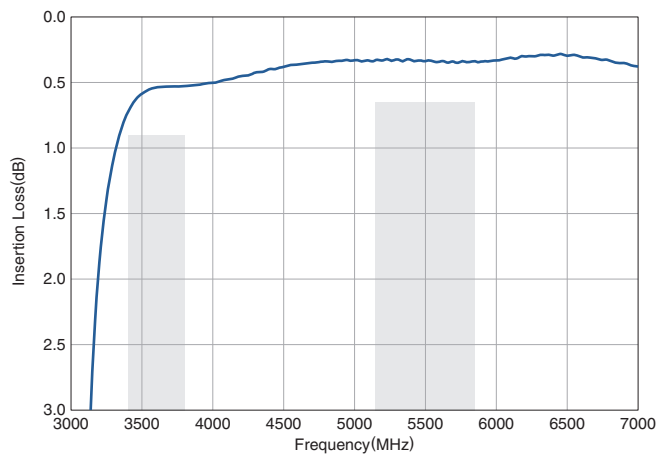
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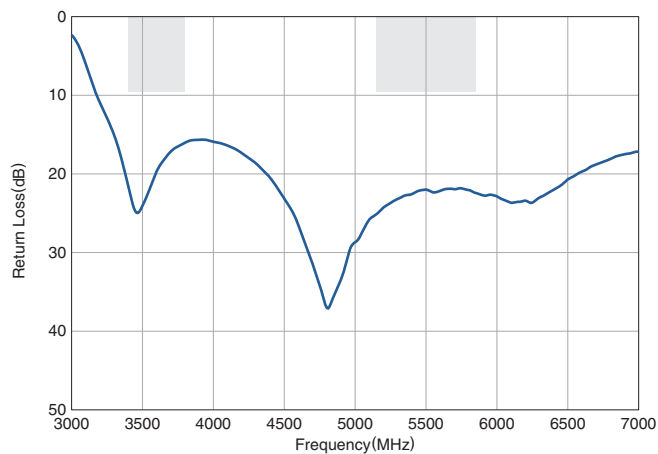
FREQUENCY CHARACTERISTICS

HIGH-BAND

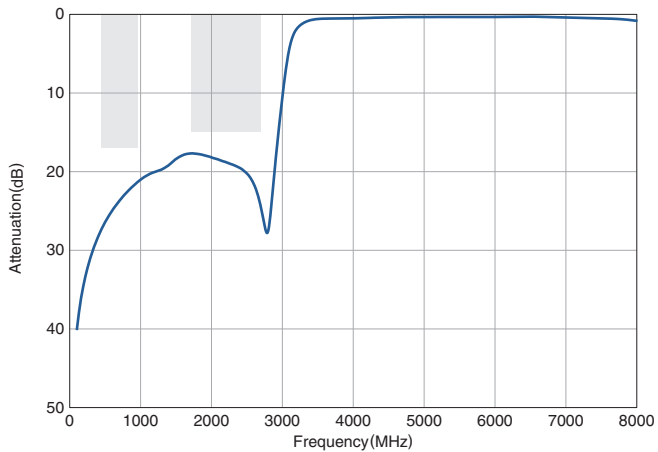
Insertion Loss



Return Loss



Attenuation



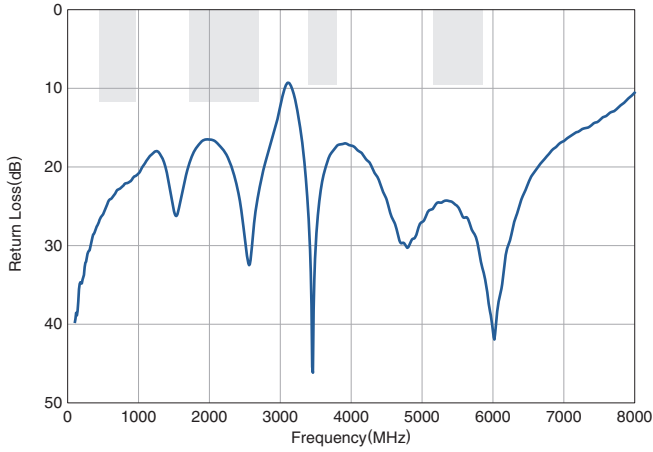
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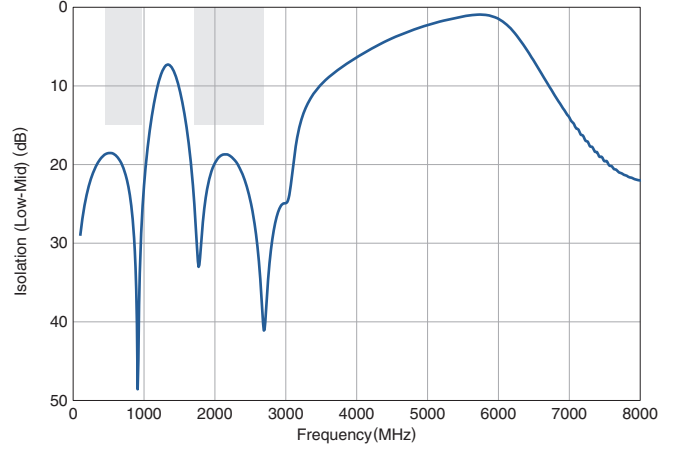
FREQUENCY CHARACTERISTICS

COMMON

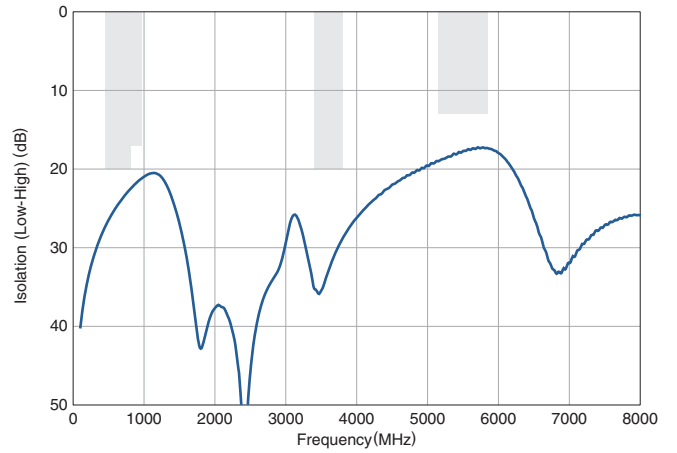
Return Loss



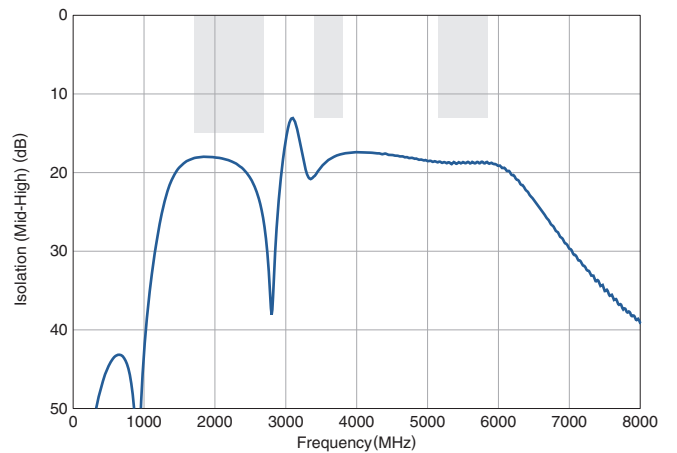
Isolation (Low-Mid)



Isolation (Low-High)



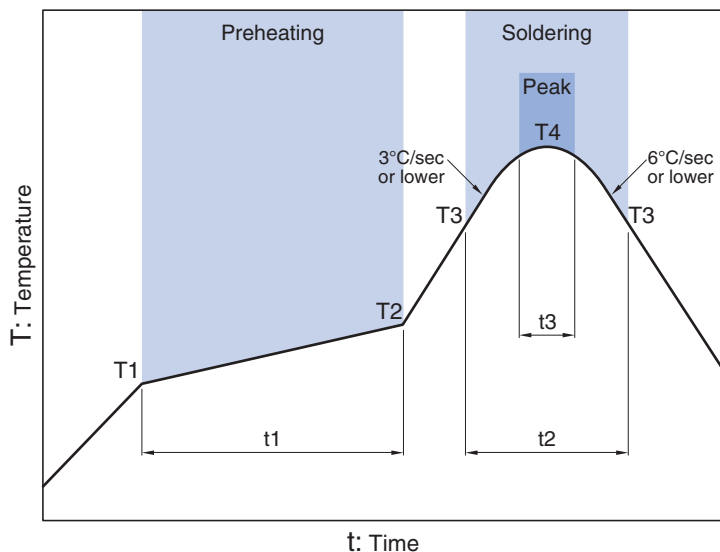
Isolation (Mid-High)



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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.

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

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.