



# Multilayer Triplexer

For 1447-2500MHz / 3400-3800MHz / 5150-5850MHz

# TPX255850MT-7025A1

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**2.5x2.0mm [EIA 1008]\***

\* Dimensions Code JIS[EIA]

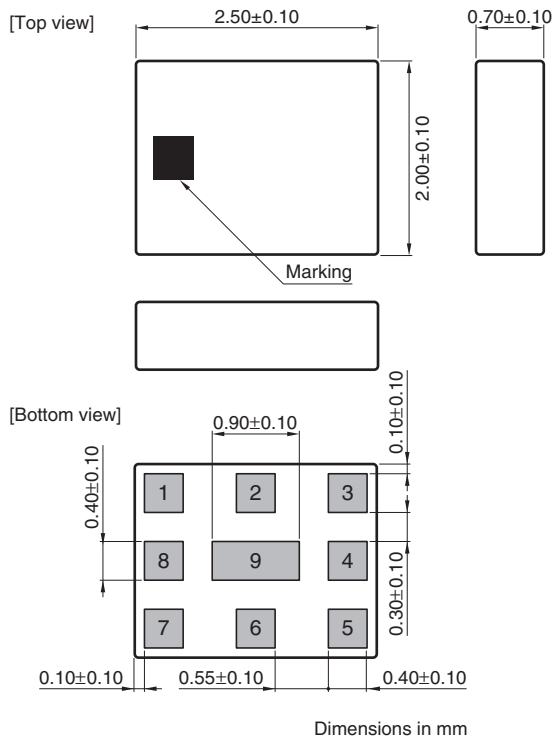
# Multilayer Triplexer

Conformity to RoHS Directive

For 1447-2500MHz / 3400-3800MHz / 5150-5850MHz

## TPX255850MT-7025A1

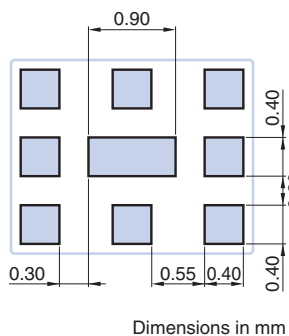
### SHAPES AND DIMENSIONS



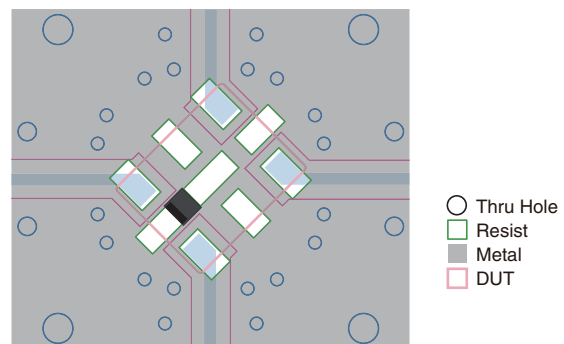
#### Terminal functions

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



Material, Layer	Thickness
Top resist	Resist
Copper Surface Pattern	0.035mm
FR-4	0.100mm
Copper Inner GND	0.018mm
FR-4	0.300mm
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)	1447 to 1511	—	0.27	0.50
	2400 to 2500	—	0.65	0.80
	1447 to 1511	—	0.33	0.60 (−40 to +85°C)
	2400 to 2500	—	0.82	1.00 (−40 to +85°C)
Return Loss (dB)	1447 to 1511	10.03	20.1	—
	2400 to 2500	10.03	16.1	—
Attenuation (dB)	3400 to 3600	20	26.7	—
	3600 to 3800	25	30.9	—
	5150 to 5850	30	33.6	—
Characteristic Impedance (Ω)			50 (Nominal)	

· Ta: +25±5°C

### MIDDLE-BAND

Item	Frequency Range (MHz)	Min.	Typ.	Max.
Insertion Loss (dB)	3400 to 3600	—	0.73	1.00
	3600 to 3800	—	0.59	1.00
	3400 to 3600	—	0.85	1.10 (−40 to +85°C)
	3600 to 3800	—	0.95	1.30 (−40 to +85°C)
Return Loss (dB)	3400 to 3600	10.03	17.0	—
	3600 to 3800	10.03	20.1	—
Attenuation (dB)	1447 to 1511	14	16.8	—
	2400 to 2500	13	16.2	—
	5150 to 5850	10	14.3	—
Characteristic Impedance (Ω)			50 (Nominal)	

· Ta: +25±5°C

### HIGH-BAND

Item	Frequency Range (MHz)	Min.	Typ.	Max.
Insertion Loss (dB)	5150 to 5850	—	1.02	1.50
	5150 to 5850	—	1.30	1.80 (−40 to +85°C)
Return Loss (dB)	5150 to 5850	8.01	13.2	—
Attenuation (dB)	1447 to 1511	20	23.8	—
	2400 to 2500	17	19.7	—
	3400 to 3600	17	19.7	—
	3600 to 3800	17	21.3	—
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)	Low to Middle	1447 to 1511	13	16.9	—	
		2400 to 2500	13	16.9	—	
		3400 to 3600	20	29.3	—	
		3600 to 3800	20	30.3	—	
	Low to High	1447 to 1511	15	23.2	—	
		2400 to 2500	15	20.6	—	
		5150 to 5850	20	31.5	—	
		Middle to High	3400 to 3600	15	21.0	—
			3600 to 3800	15	20.6	—
			5150 to 5850	10	12.3	—
Power Handling (W)		—	—	2.0		
Characteristic Impedance ( $\Omega$ )			50 (Nominal)			

• Ta: +25±5°C

## TEMPERATURE RANGE

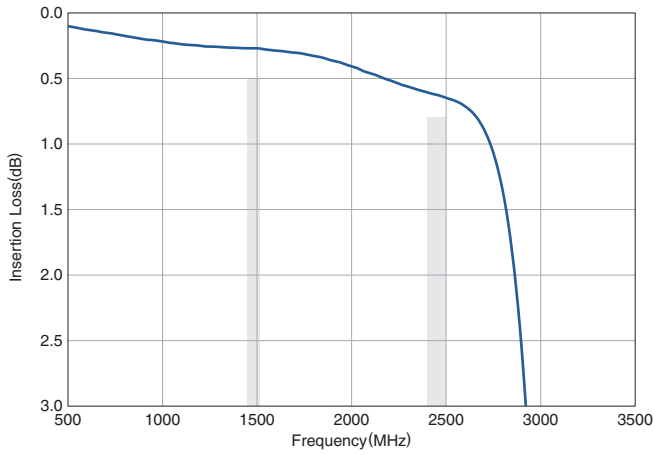
Operating temperature (°C)	Storage temperature (°C)
-40 to +85	-40 to +85

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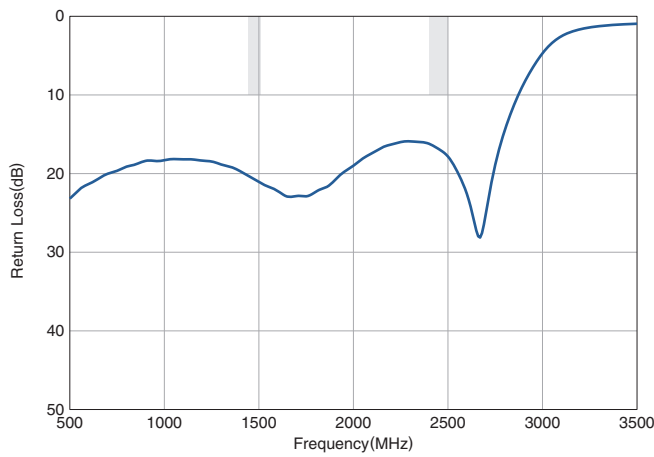
## FREQUENCY CHARACTERISTICS

### LOW-BAND

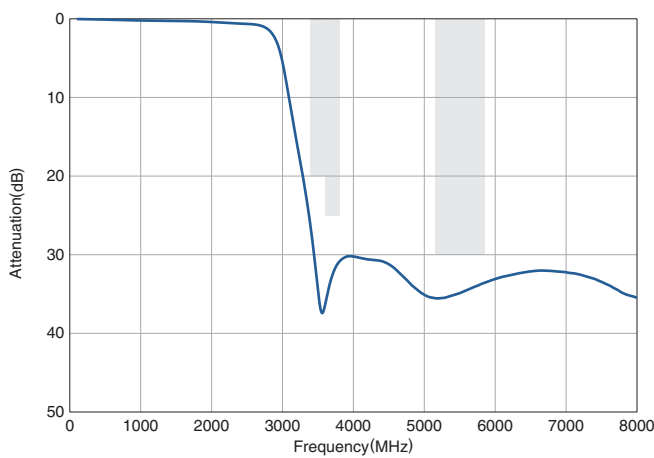
#### Insertion Loss



#### Return Loss

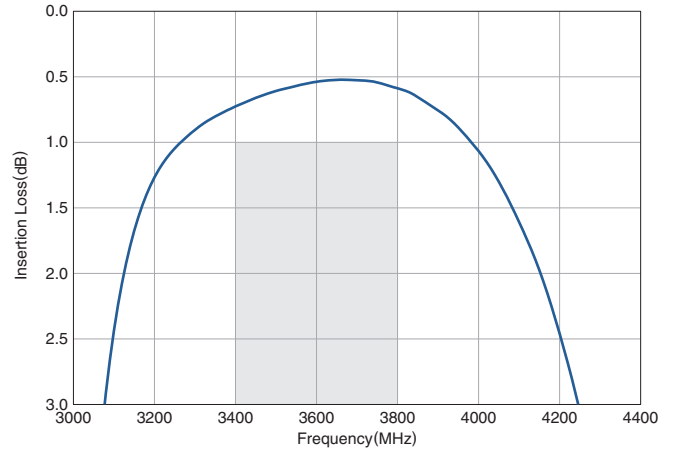


#### Attenuation

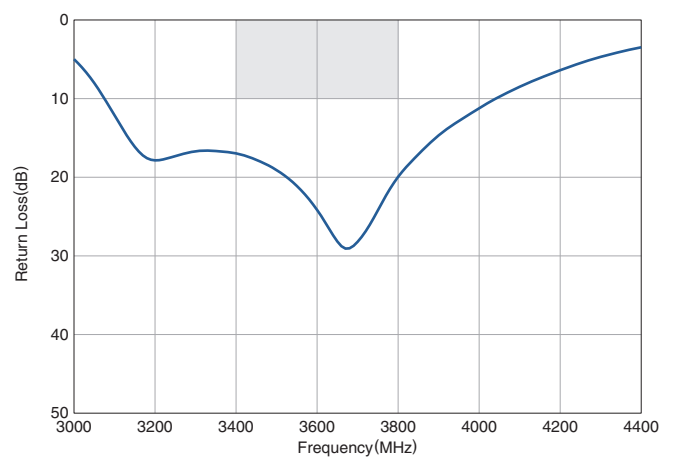


### MIDDLE-BAND

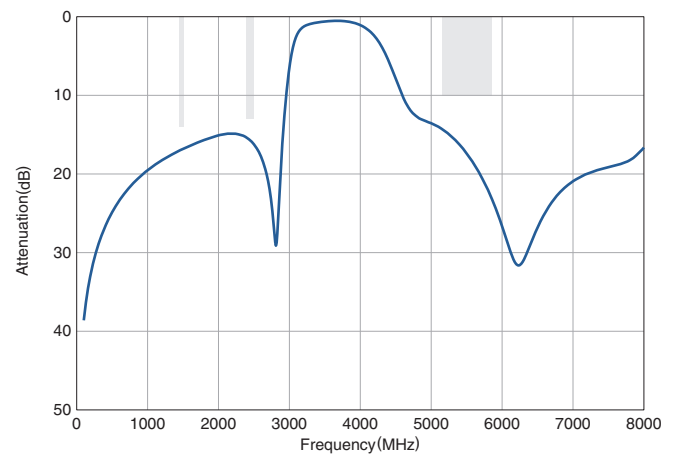
#### Insertion Loss



#### Return Loss



#### Attenuation



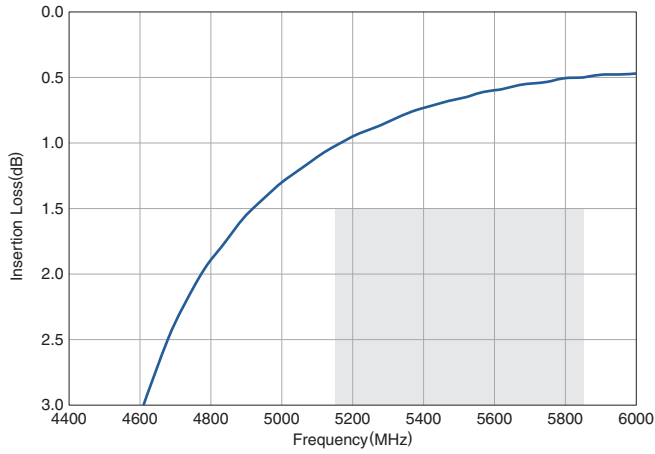
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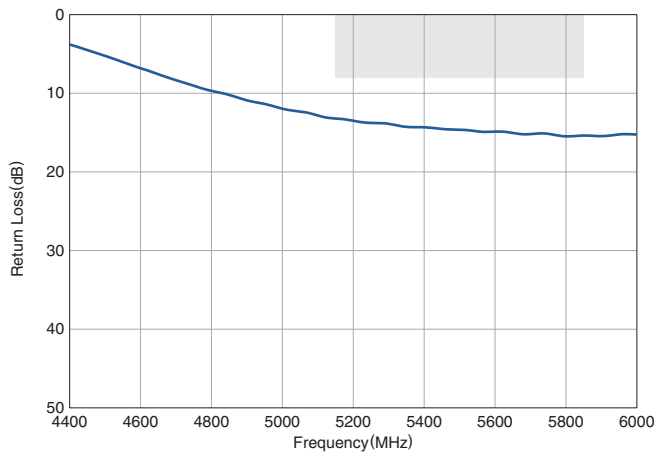
## FREQUENCY CHARACTERISTICS

### HIGH-BAND

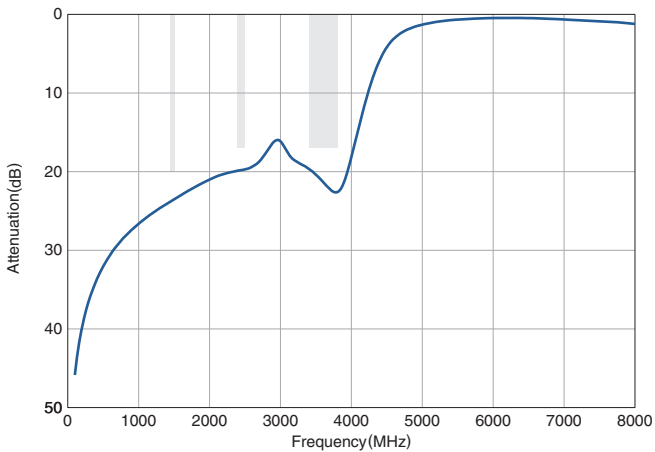
#### Insertion Loss



#### Return Loss



#### Attenuation



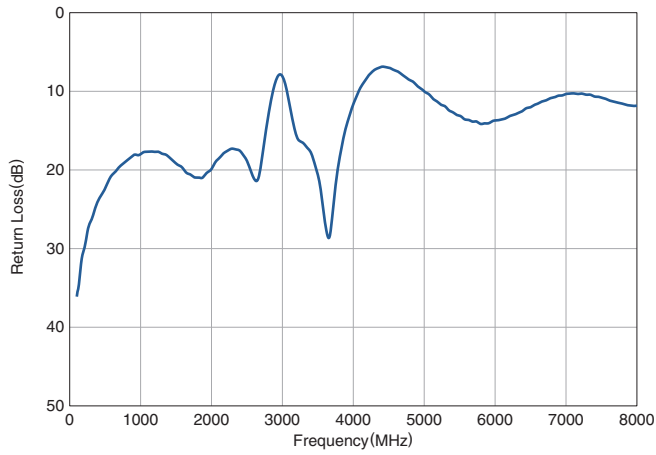
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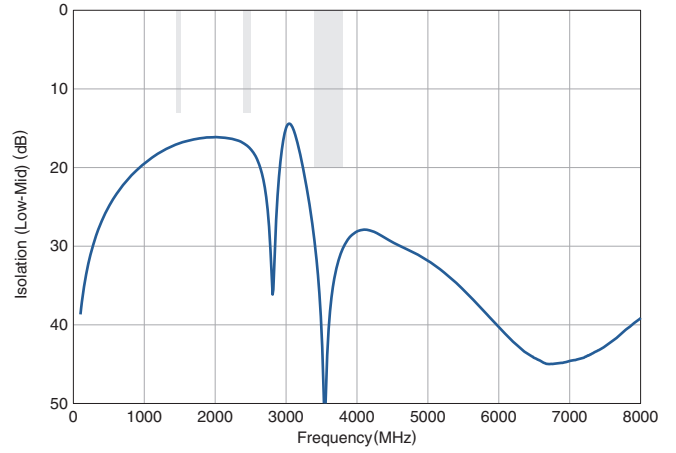
## FREQUENCY CHARACTERISTICS

### COMMON

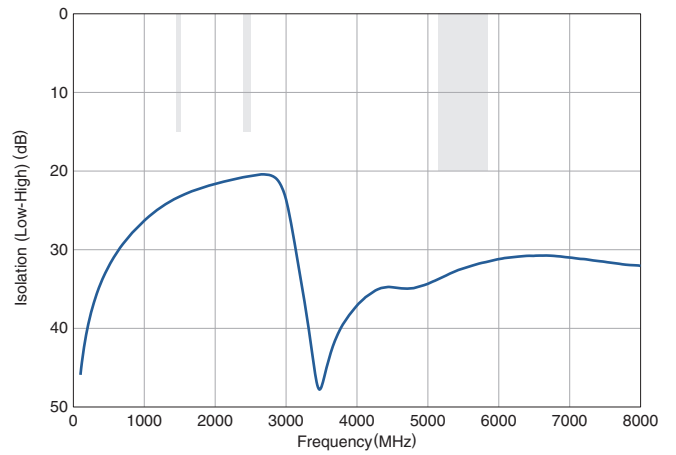
#### Return Loss



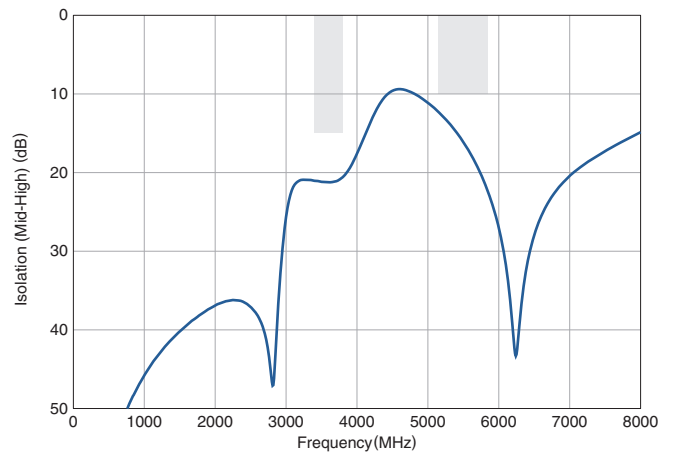
#### Isolation (Low-Mid)



#### Isolation (Low-High)



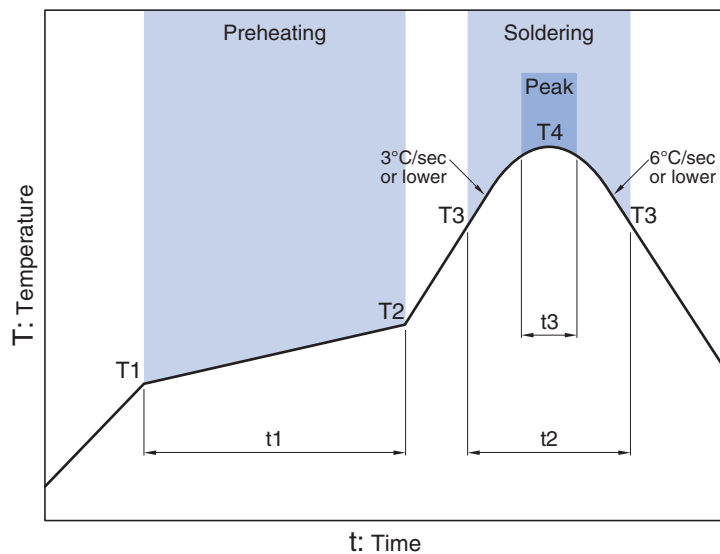
#### Isolation (Mid-High)



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## RECOMMENDED REFLOW PROFILE



Preheating			Soldering			
			Critical zone (T3 to T4)		Peak	
Temp.	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.