

TP 2012 Series

Multilayer Chip Triplexers

Features

- ❖ Monolithic structure including one low-pass and two band-pass filters with loss pole at adjacent passband
- ❖ HF & RoHS Compliant



Applications

- ❖ Triple-band for GPS and 2.4GHz/5GHz WLAN

Specifications

Part Number	Passband (MHz)	Insertion Loss (dB)	Return Loss (dB)	Attenuation (dB)	Isolation (dB)
TP2012-A1255DA_	1560 ~ 1610	0.6 max. @25°C 0.7 max. @-40~85°C	10 min.	14 min. @ 2400 ~ 2500 MHz 15 min. @ 4800 ~ 6000 MHz	Low to Middle band 20 min. @ 1559~1606
	2400 ~ 2500	0.73 max. @25°C 0.81 max. @-40~85°C	10 min.	10 min. @ 3600 ~ 3750 MHz 20 min. @ 4800 ~ 5000 MHz 10 min. @ 7200 ~7500 MHz 10 min. @ 9600 ~10000 MHz	Middle to High band 20 min. @ 4800~5000
	4900 ~ 5950	0.8 max @25°C 0.92 max @-40~85°C	10 min.	24 min. @ 860 ~ 960 MHz 24 min. @ 1545 ~ 1605 MHz 25 min. @ 1710 ~ 1990 MH 30 min. @ 2170 MHz 10 min. @ 8100 ~ 8800 MHz 15 min. @ 8820 ~ 9800 MHz 25 min. @ 9800 ~ 11800 MHz 3 min. @ 14700 ~ 17850 MHz	Low to High band 25 min. @ 1559~1606

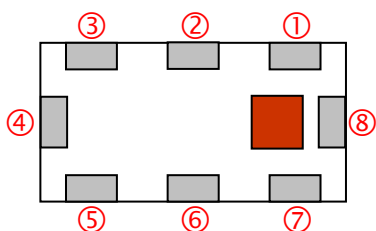
Q'ty/Reel (pcs) : 4,000
 Operating Temperature Range : -40 ~ +85 °C
 Storage Temperature Range : -40 ~ +85 °C
 Storage Period : 12 months max.
 Power Capacity : 2W max.

Part Number

TP **2012** **-** **A** **1255** **DA** **□** **/LF**
① ② ③ ④ ⑤ ⑥ ⑦

① Type	TP : Triplexer	② Dimensions (L × W)	2.0 × 1.2 mm
③ Material Code	A	④ Frequency Range	1255=1610MHz /2450MHz /5500MHz
⑤ Specification Code	DA	⑥ Packaging	T: Tape & Reel B: Bulk
⑦ Soldering	/LF=lead-free		

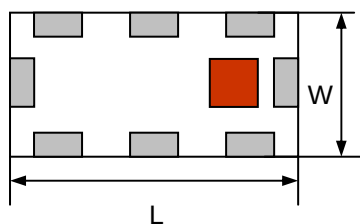
Terminal Configuration



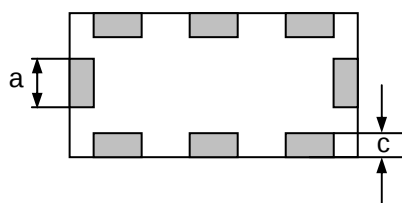
No.	Terminal Name	No.	Terminal Name
①	GND	⑤	GND
②	Common Port	⑥	High-Band Port (5G)
③	GND	⑦	GND
④	Low-Band Port (1.5G)	⑧	Middle-Band Port (2.4G)

Dimensions and Recommended PC Board Pattern

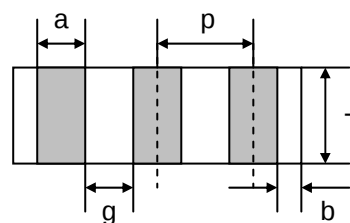
Unit : mm



< Top View >

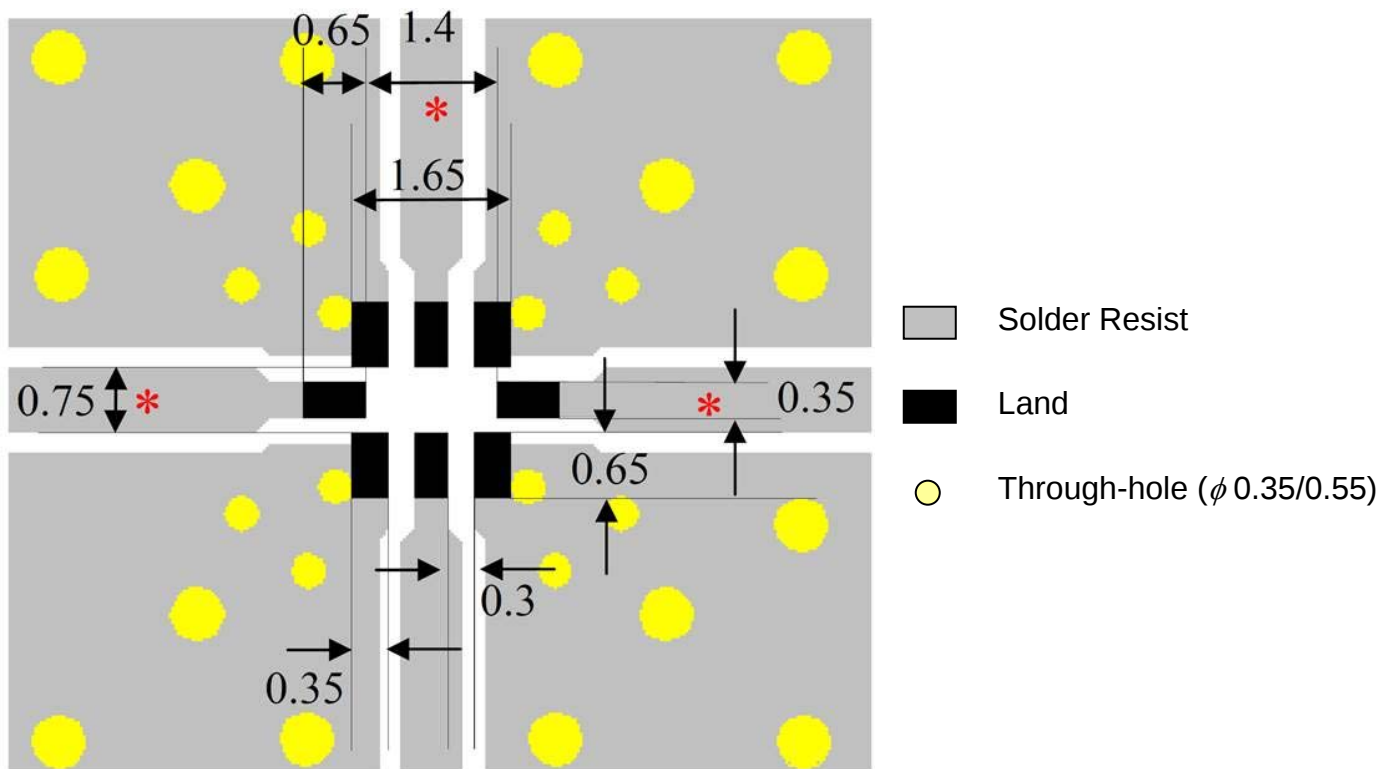


< Bottom View >



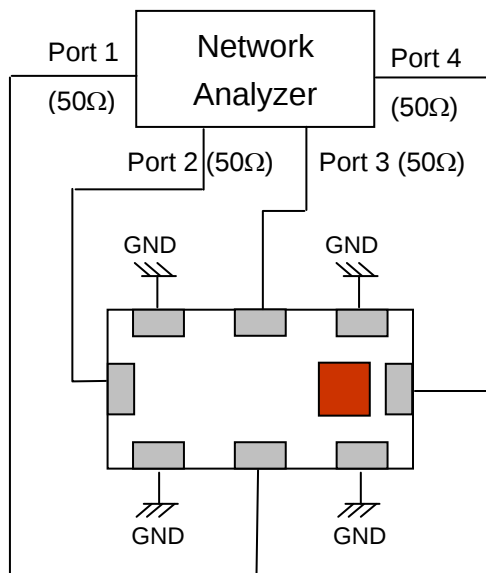
< Side View >

Mark	L	W	T	a	b	c	g	p
Dimensions	2.0±0.1	1.25±0.1	0.95±0.1	0.3±0.1	0.2±0.1	0.3±0.1 /-0.2	0.35±0.1	0.65±0.05



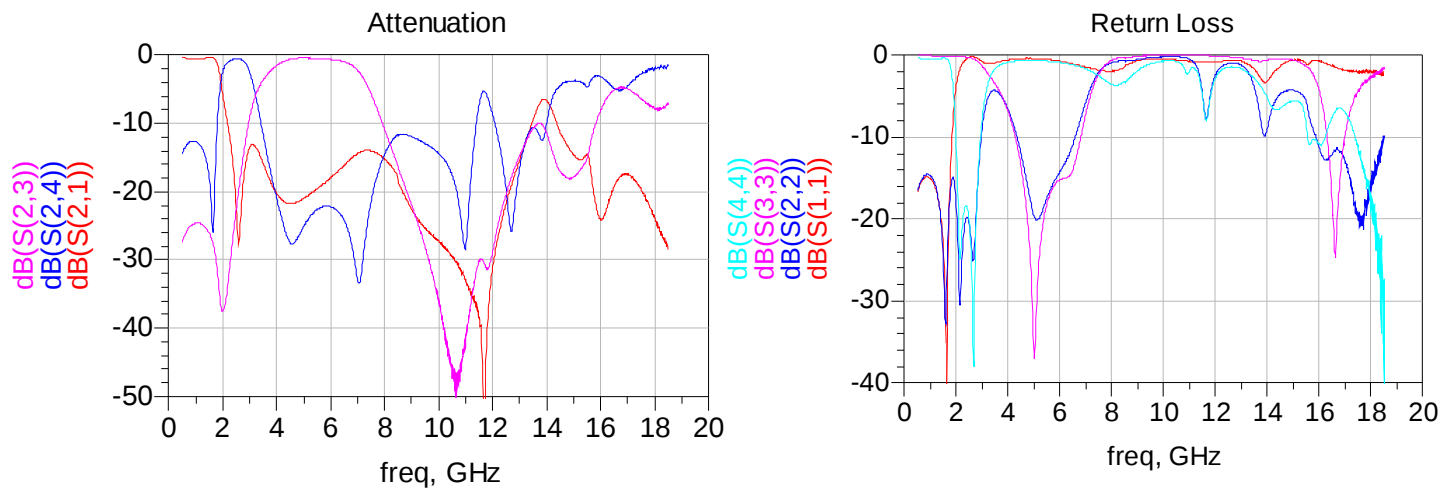
* Line width should be designed to match 50 Ω characteristic impedance, depending on PCB material and thickness.

Measuring Diagram



*In Application, It is not necessary to add the DC blocking capacitors at all ports when DC voltages are present at these RF ports.

Typical Electrical Characteristics (T=25°C)

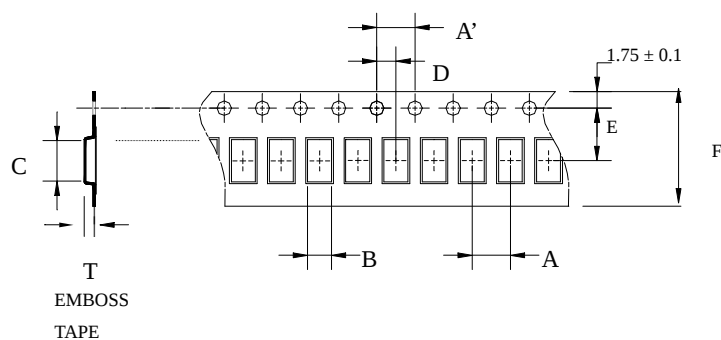


Notes

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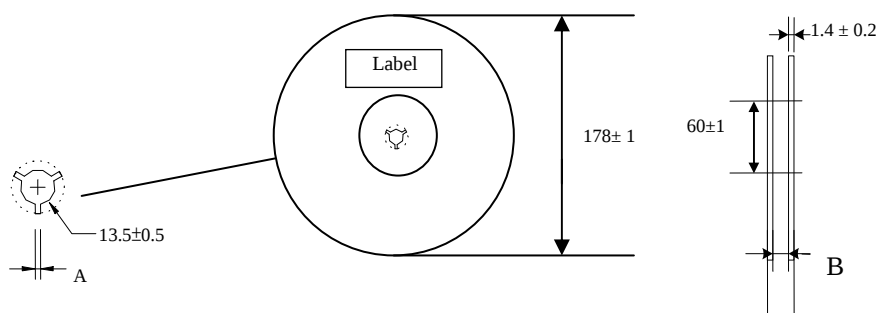
Taping Specifications

❖Tape Dimensions (Unit: mm) & Quantity



Type	A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
2012	4.0±	4.0±	1.35±	2.15±	2.0±	3.5±	8.0±	1.08±	4,000pcs	Plastic (Embossed)
	0.1	0.1	0.05	0.05	0.05	0.1	0.1	0.05		

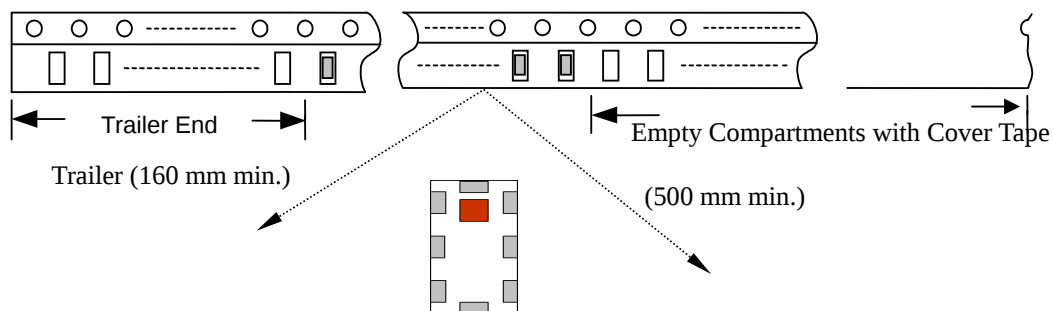
❖Reel Dimensions (Unit: mm)

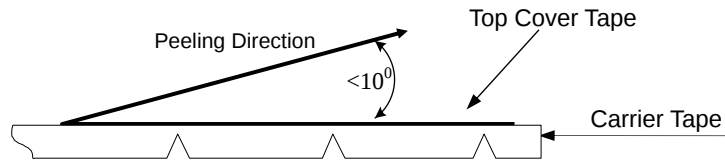


Label: Customer's Name,
ACX P/N, Q'ty, Date,
ACX Corp.

Type	A	B
2012	2.3±0.5	9.0±0.3

❖Leader and Trailer Tape



❖Peel-off Force

Peel-off force should be in the range of 0.1 – 0.6 N at a peel-off speed of 300 ± 10 mm/min .

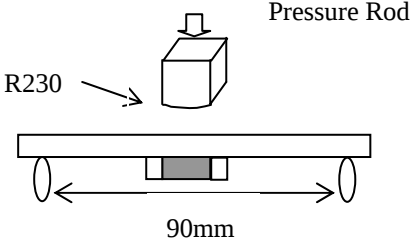
❖Storage Conditions

- (1) Temperature: $+5 \sim +35^{\circ}\text{C}$, relative humidity (RH): 45~75%.
- (2) Non-corrosive environment.

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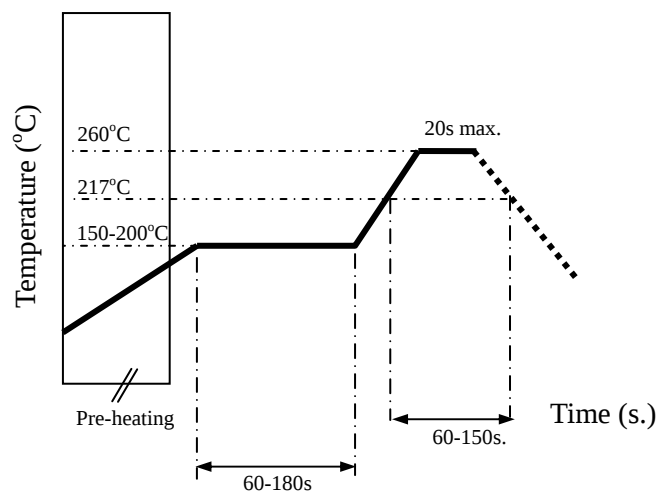
Mechanical & Environmental Characteristics

Item	Requirements	Procedure
Solderability	- No apparent damage - More than 95% of the terminal electrode shall be covered with new solder	- Preheat: $120 \pm 5^{\circ}\text{C}$ - Solder: $245 \pm 5^{\circ}\text{C}$ for 5 ± 1 sec
Soldering strength (Termination Adhesion)	10N minimum	- Solder specimen onto test jig. - Apply push force at 0.5mm/s until electrode pads are peeled off or ceramic are broken. Pushing force is applied to longitude direction
Deflection (Substrate Bending)	No apparent damage	- Solder specimen onto test jig (FR4, 1.6mm) using the recommend soldering profile. - Apply a bending force of 2mm deflection 
Heat/Humidity Resistance	- No apparent damage - Fulfill the electrical specification after test	- Temperature: $85 \pm 2^{\circ}\text{C}$ - Humidity: 90% ~ 95% RH - Duration: 1000 ± 48hrs - Recovery: 1-2hrs
Thermal shock (Temperature Cycle)	- No apparent damage - Fulfill the electrical specification after test	- One cycle/step 1 : $125 \pm 5^{\circ}\text{C}$ for 30 min step 2 : $-40 \pm 5^{\circ}\text{C}$ for 30 min - No of cycles : 100 - Recovery: 1-2 hrs
Low Temperature Resistance	- No apparent damage - Fulfill the electrical specification after test	- Temperature: $-40 \pm 5^{\circ}\text{C}$ - Duration: 500 ± 24hrs - Recovery: 1-2hrs

Soldering Conditions

❖ Typical Soldering Profile for Lead-free Process

Reflow Soldering :



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