

DP 2012 Series

Multilayer Chip Diplexers

Features

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

Applications

- ❖ Dual-band / dual-mode 2.4GHz/5GHz WLAN



Specifications

Part Number	Passband (MHz)	Insertion Loss (dB)	Return Loss (dB)	Attenuation (dB)	Isolation (dB)
DP2012-A2455NT	2400~2500	0.25 typ. / 0.50 max. @ 25°C 0.65 typ. / 0.70 max. @ -40~ 105°C	20 typ. 10 min.	27 typ. / 20 min. @ 4800 ~ 6000 MHz 30 typ. / 20 min. @ 7200 ~ 7500 MHz	22 typ. / 20 min. @ DC ~ 2500 MHz
	4900~5950	0.35 typ. / 0.65 max. @ 25°C 0.85 typ. / 0.90 max. @ 40~105°C	15 typ. 10 min.	23 typ. / 20 min. @ 800 ~ 2500 MHz 18 typ. / 15 min. @ 9800 ~11900 MHz	27 typ. / 20 min. @ 4900 ~ 5950 MHz

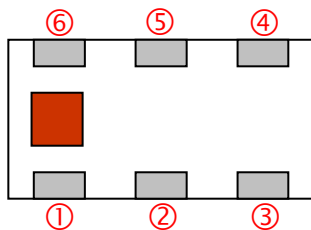
Q'ty/Reel (pcs) : 4,000
 Operating Temperature Range : -40 ~ +105 °C
 Storage Temperature Range : -40 ~ +105 °C
 Storage Period : 12 months max.
 Power Capacity : 2W max.

Part Number

DP 2012 - A 2455 NT □ /LF
 ① ② ③ ④ ⑤ ⑥ ⑦

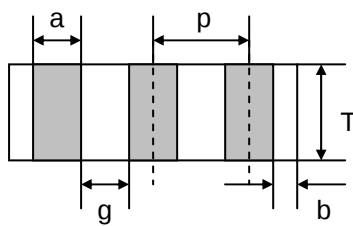
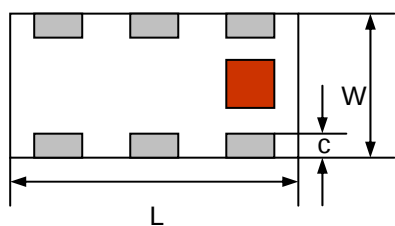
① Type	DP : Diplexer	② Dimensions (L × W)	2.0 × 1.2 mm
③ Material Code	A	④ Frequency Range	2455=2400MHz /5500MHz
⑤ Specification Code	NT	⑥ Packaging	T: Tape & Reel B: Bulk
⑦ Soldering	/LF=lead-free		

Terminal Configuration



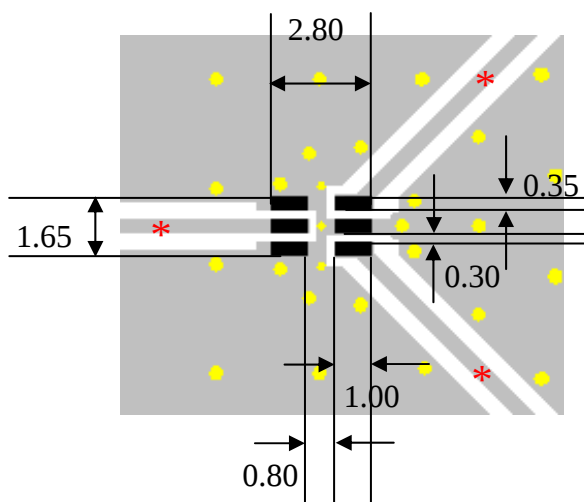
No.	Terminal Name	No.	Terminal Name
①	GND	④	Lower Freq. Port
②	Common Port	⑤	GND
③	GND	⑥	Higher Freq. Port

Dimensions and Recommended PC Board Pattern



Unit : mm

Mark	L	W	T	a	b	c	g	p
Dimensions	2.0 ± 0.1	1.25 ± 0.1	0.5 ± 0.1	0.3 ± 0.1	0.2 ± 0.1	$0.3+0.1 / -0.2$	0.35 ± 0.1	0.65 ± 0.05



Solder Resist



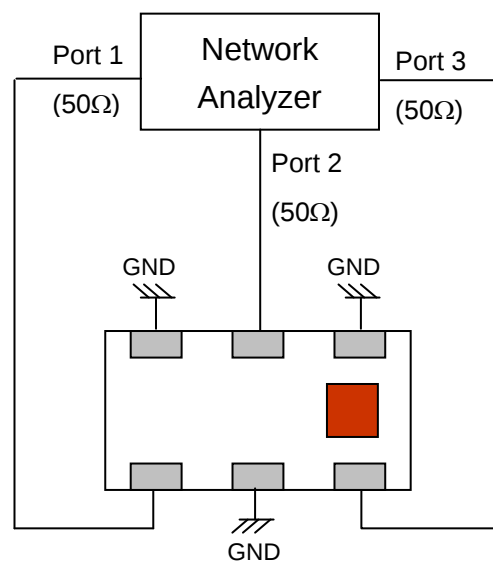
Land



Through-hole (ϕ 0.35 / 0.20)

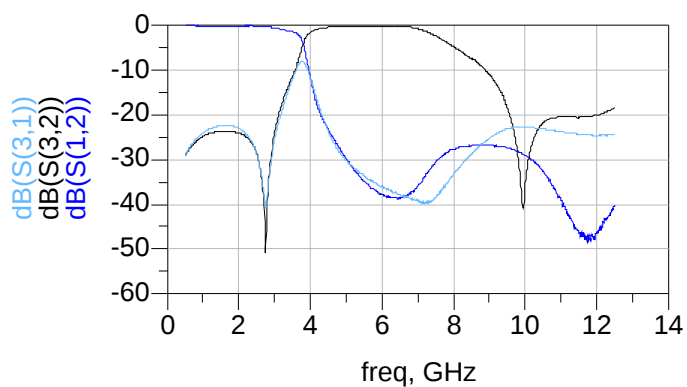
* Line width should be designed to match 50 Ω characteristic impedance, depending on PCB material and thickness.

Measuring Diagram

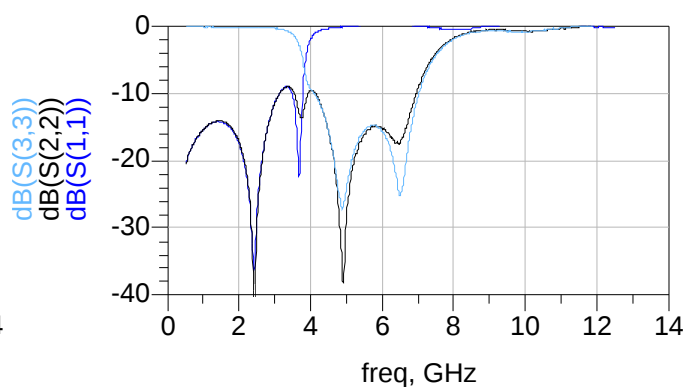


Typical Electrical Characteristics (T=25°C)

Attenuation (S12, S32) / Isolation (S31)



Return Loss

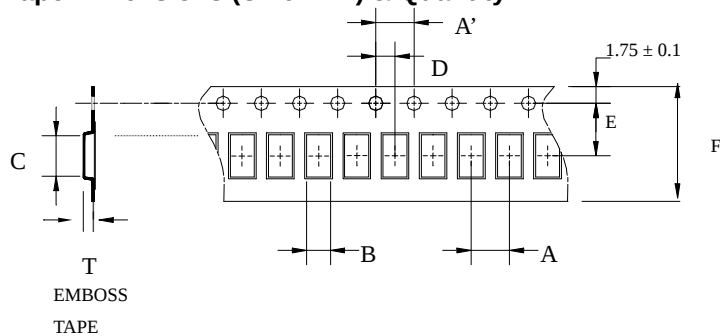


Notes

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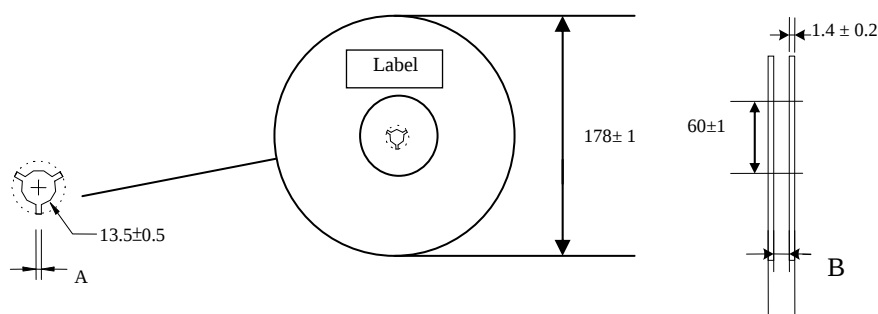
Taping Specifications

❖ Tape Dimensions (Unit: mm) & Quantity



Type	A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
2012	4.0± 0.1	4.0± 0.1	1.35± 0.05	2.15± 0.05	2.0± 0.05	3.5± 0.1	8.0± 0.1	0.65± 0.05	4,000pcs	Plastic (Embossed)

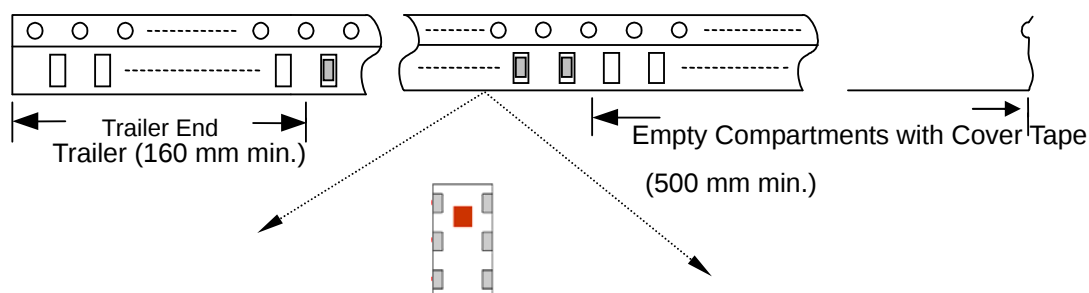
❖ Reel Dimensions (Unit: mm)



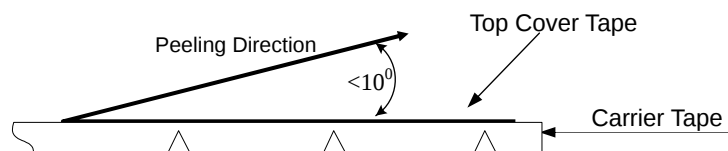
Label: Customer's Name,
ACX P/N, Q'ty, Date,
ACX Corp.

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 .

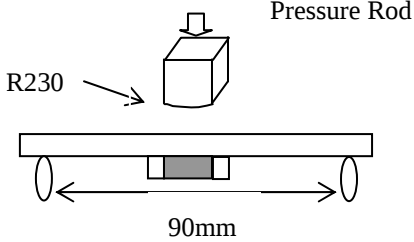
❖ **Storage Conditions**

- (1) Temperature: +5 ~35°C, relative humidity (RH): 45~75%.
- (2) Non-corrosive environment.

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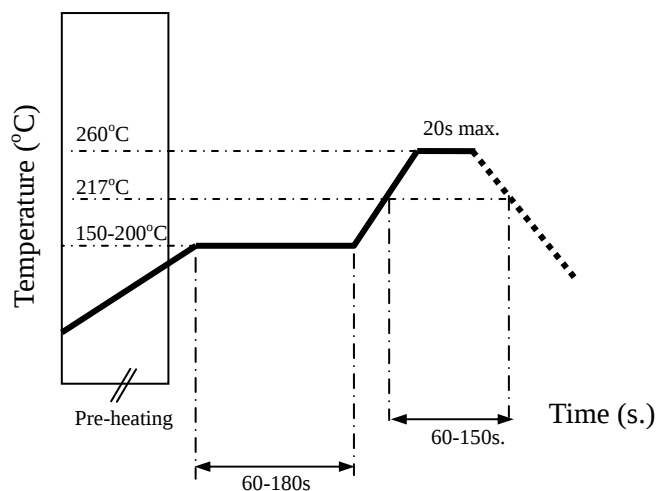
Mechanical & Environmental Characteristics

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)	1kg 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, 0.8mm) 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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Advanced Ceramic X Corp.

16 Tzu Chiang Road, Hsinchu Industrial District Hsinchu Hsien 303, Taiwan

TEL:886-3-5987008 FAX:886-3-5987001

E-mail: acx@acxc.com.tw <http://www.acxc.com.tw>