

DP 2012 Series

Multilayer Chip Diplexers

Features

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

Applications

- ❖ Wireless communication Dual-band / dual-mode



Specifications

Part Number	Passband (MHz)	Insertion Loss (dB)	VSWR	Attenuation (dB)
DP2012-A0822NB	617-746	0.4 max	2.0 max.	30 min. @ 1710-2170 MHz
	746-960	0.5 max		30 min. @ 2170-2400 MHz 35 min. @ 2400-2700 MHz
	1710-2700	0.5 max.	2.0 max.	25 min. @ 698-960 MHz

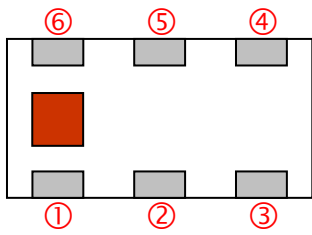
Q'ty/Reel (pcs) : 4,000
 Operating Temperature Range : -40 ~ +85 °C
 Storage Temperature Range : -40 ~ +85 °C
 Storage Period : 12 months max.
 Power Capacity : 3W max.

Part Number

DP 2012 - A 0822 NB □ /LF
 ① ② ③ ④ ⑤ ⑥ ⑦

① Type	DP : Diplexer	② Dimensions (L x W)	2.0 x 1.2 mm
③ Material Code	A	④ Frequency Range	0822=800MHz /2200MHz
⑤ Specification Code	NB	⑥ Packaging	T: Tape & Reel B: Bulk
⑦ Soldering	/LF=lead-free		

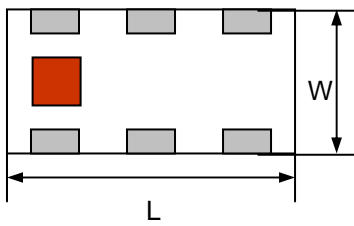
Terminal Configuration



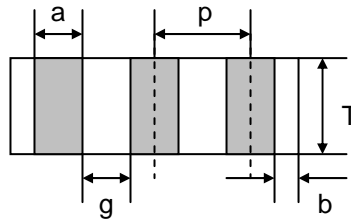
No.	Terminal Name	No.	Terminal Name
①	GND	④	Lower Freq. Port
②	Common Port	⑤	GND
③	GND	⑥	Higher Freq. Port

Dimensions and Recommended PC Board Pattern

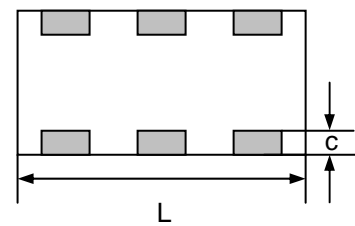
Unit : mm



< Top View >

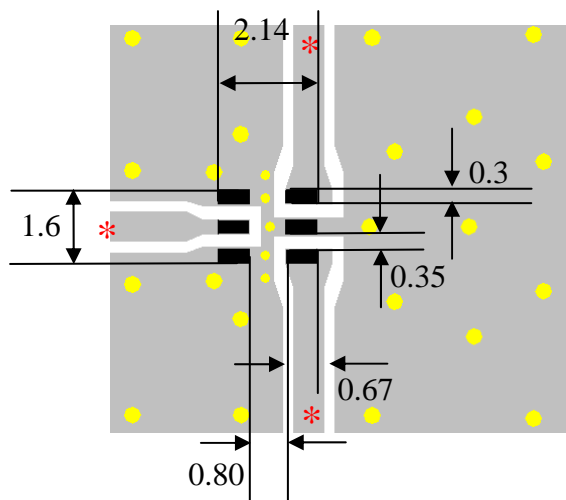


< Side View >



< Bottom View >

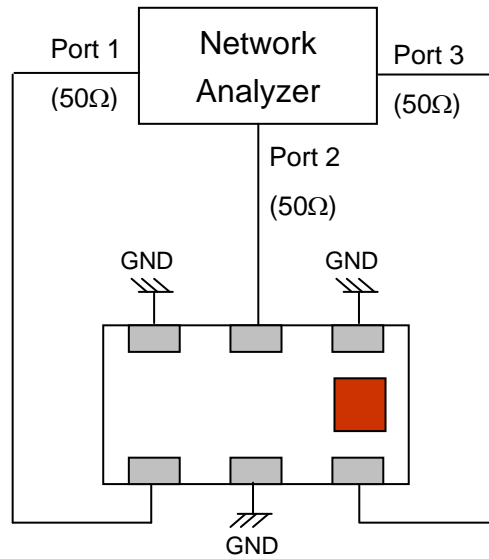
Mark	L	W	T	a	b	c	g	p
Dimensions	2.0 ± 0.1	1.25 ± 0.1	0.9 ± 0.1	0.3 ± 0.1	0.2 ± 0.1	0.3+0.1 /-0.2	0.35 ± 0.1	0.65 ± 0.05



- Solder Resist
- Land
- Through-hole (ϕ 0.35 / 0.20)

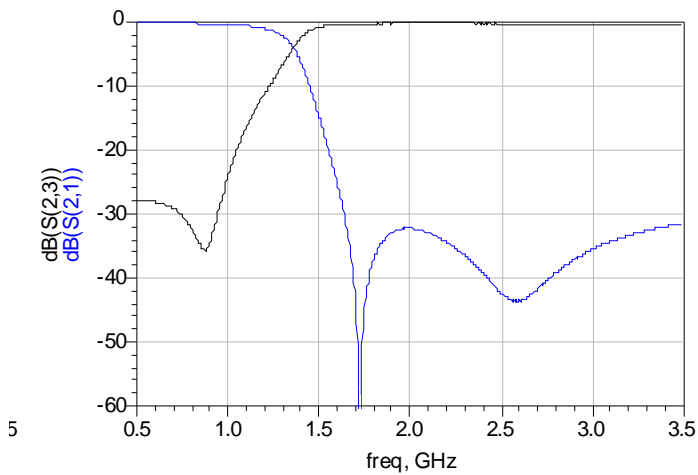
* Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

Measuring Diagram

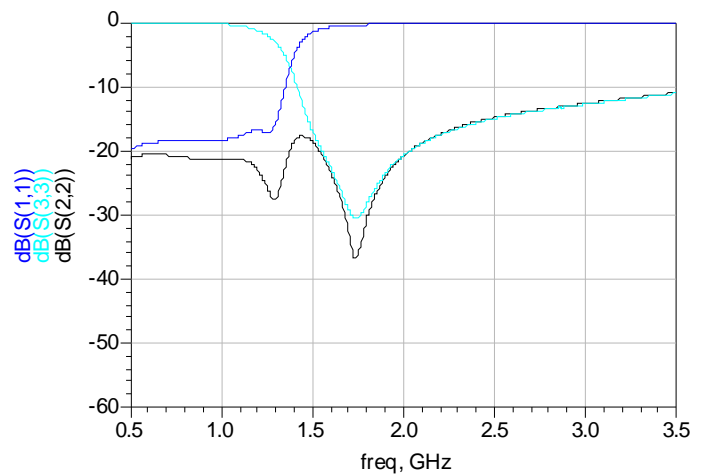


Typical Electrical Characteristics (T=25°C)

Attenuation



Return Loss

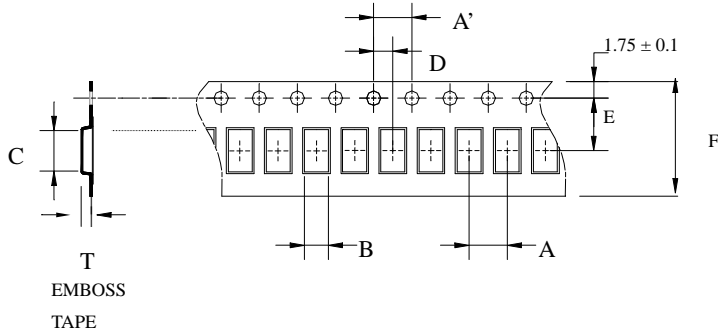


Notes

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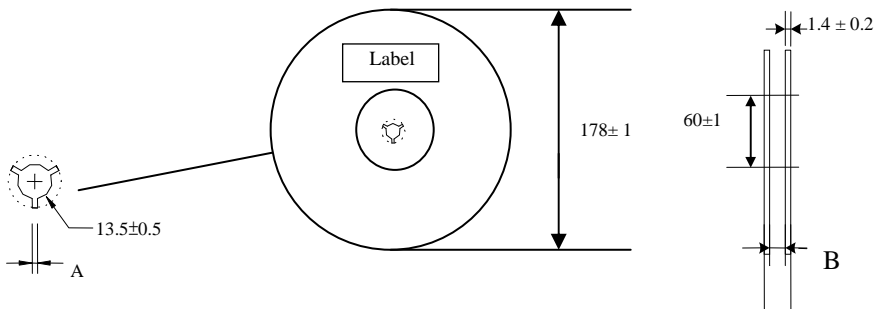
Taping Specifications

❖Tape Dimensions (Unit: mm) & Quantity



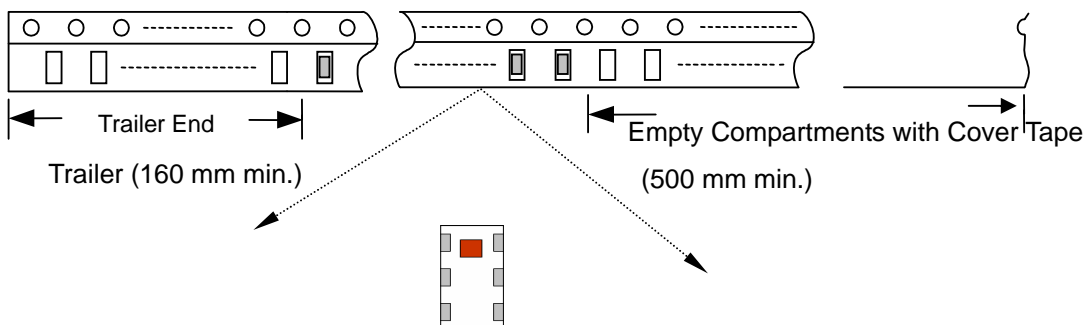
Type	A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
2012	4.0±	4.0±	1.35±	2.15±	2.0±	3.5±	8.0±	1.08±	4,000pcs	Plastic (Embossed)
	0.1	0.1	0.05	0.05	0.05	0.1	0.1	0.05		

❖Reel Dimensions (Unit: mm)

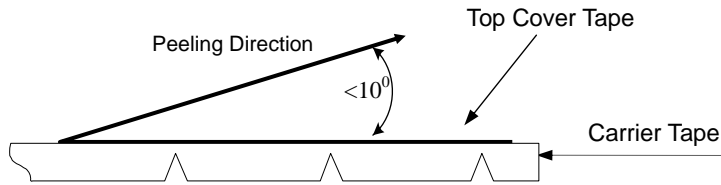


Type	A	B
2012	2.3±0.5	9.0±0.3

❖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 .

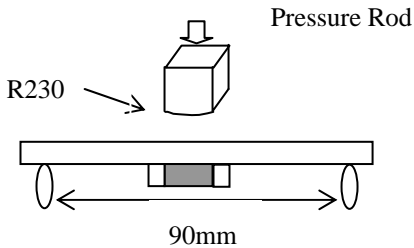
❖ **Storage Conditions**

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

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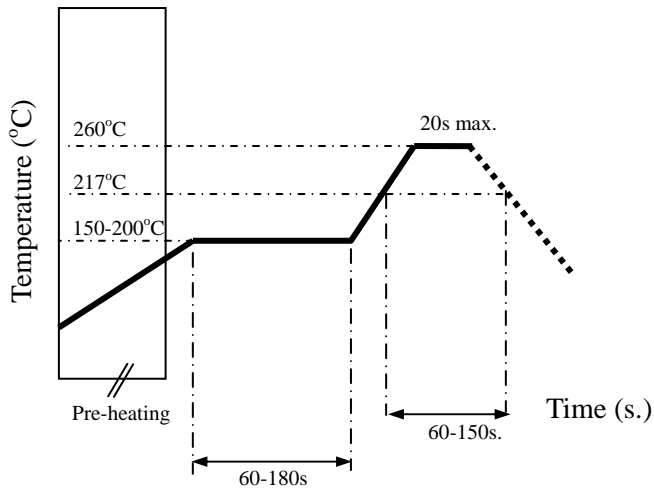
Mechanical & Environmental Characteristics

Item	Requirements	Procedure
Solderability	<ol style="list-style-type: none"> No apparent damage More than 95% of the terminal electrode shall be covered with new solder 	<ol style="list-style-type: none"> Preheat: $120 \pm 5^\circ\text{C}$ Solder: $245 \pm 5^\circ\text{C}$ for 5 ± 1 sec
Soldering strength (Termination Adhesion)	<ol style="list-style-type: none"> 1kg minimum 	<ol style="list-style-type: none"> 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)	<ol style="list-style-type: none"> No apparent damage 	<ol style="list-style-type: none"> Solder specimen onto test jig (FR4, 0.8mm) using the recommend soldering profile. Apply a bending force of 2mm deflection 
Heat/Humidity Resistance	<ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test 	<ol style="list-style-type: none"> Temperature: $85 \pm 2^\circ\text{C}$ Humidity: 90% ~ 95% RH Duration: 1000 ± 48hrs Recovery: 1-2hrs
Thermal shock (Temperature Cycle)	<ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test 	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test 	<ol style="list-style-type: none"> 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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