

# 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

- ❖ Dual-band / dual-mode for LTE Mobile Communication.



## Target Specifications

Part Number	Passband (MHz)	Insertion Loss (dB)	Return Loss (dB)	Attenuation (dB)
DP2012-A1926NA_	698~1710	0.8 max.	10 min.	15 min. @2500~2690MHz
	1710~1980	0.8 max.	10 min.	
	2110~2170	1.2 max.	10 min.	
	2500~2690	1.2 max.	10 min.	15 min. @1710~1980MHz 15 min. @2110~2170MHz

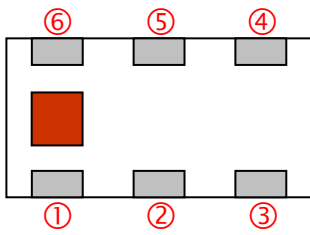
Q'ty/Reel (pcs) : 4,000  
 Operating Temperature Range : -40 ~ +85 °C  
 Storage Temperature Range : -40 ~ +85 °C  
 Storage Period : 12 months max.  
 Power Capacity : 3W max.

## Part Number

DP   2012   -   A   1926   NA   □   /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	1926=1900MHz/2600MHz
⑤ Specification Code	NA	⑥ Packaging	T: Tape & Reel B: Bulk
⑦ Soldering	/LF=lead-free		

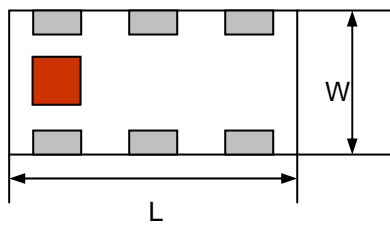
## Terminal Configuration



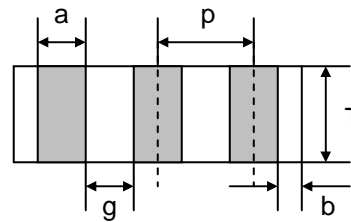
No.	Terminal Name	No.	Terminal Name
①	GND	④	Lower Freq. Port
②	Common Port	⑤	GND
③	GND	⑥	Higher Freq. Port

## Dimensions and Recommended PC Board Pattern

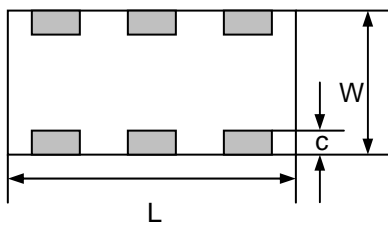
Unit : mm



<Top View>

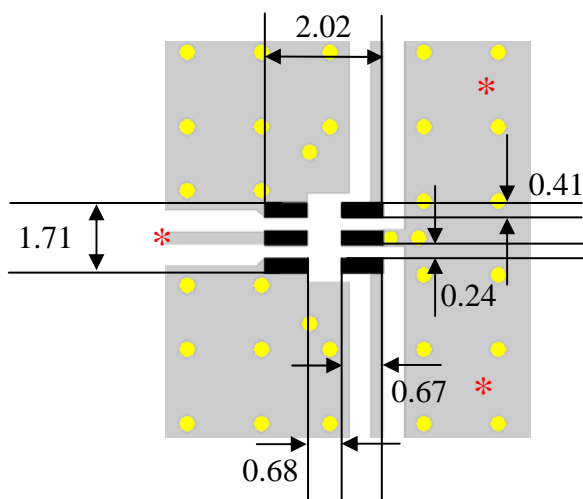


<Side View>



<Bottom View>

Mark	L	W	T	a	b	c	g	p
Dimensions	2.0 ±	1.2 ±	0.9 ±	0.3 ±	0.2 ±	0.3 ±	0.35 ±	0.65 ±
	0.15	0.15	0.10	0.15	0.15	0.15	0.15	0.15

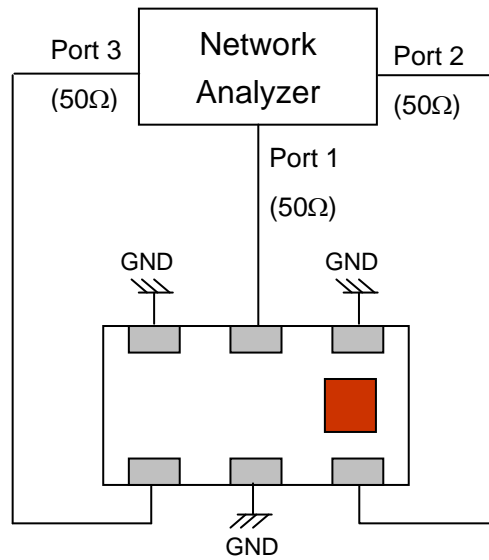


- Solder Resist
- Land
- Through-hole ( $\phi$  0.35)

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

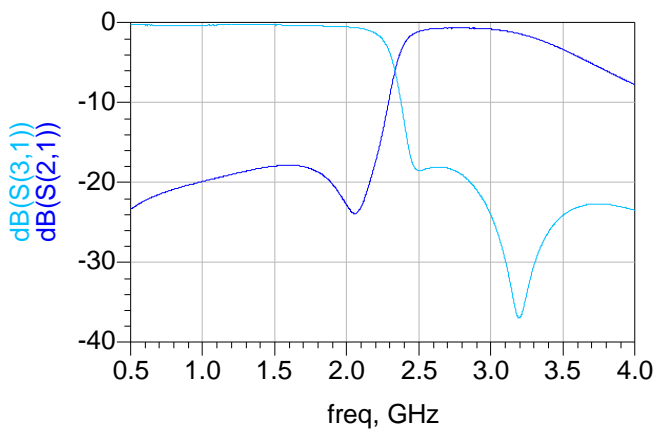
**Measuring Diagram**

Unit : mm

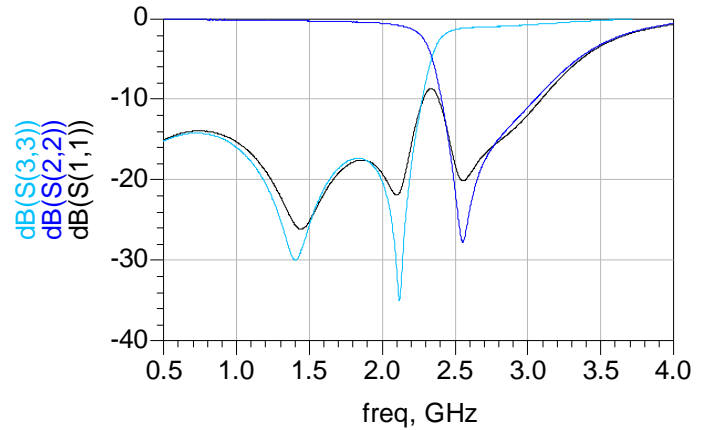


**Typical Electrical Characteristics (T=25°C)**

**Attenuation**



**Return Loss**

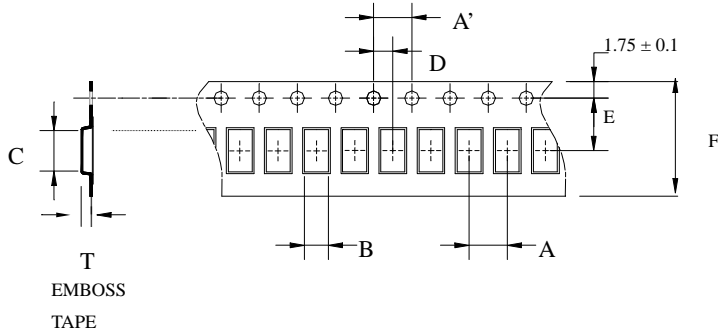


**Notes**

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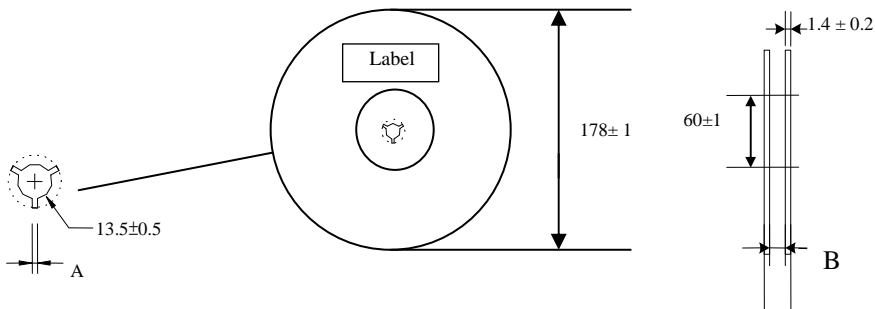
## Taping Specifications

### ❖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		

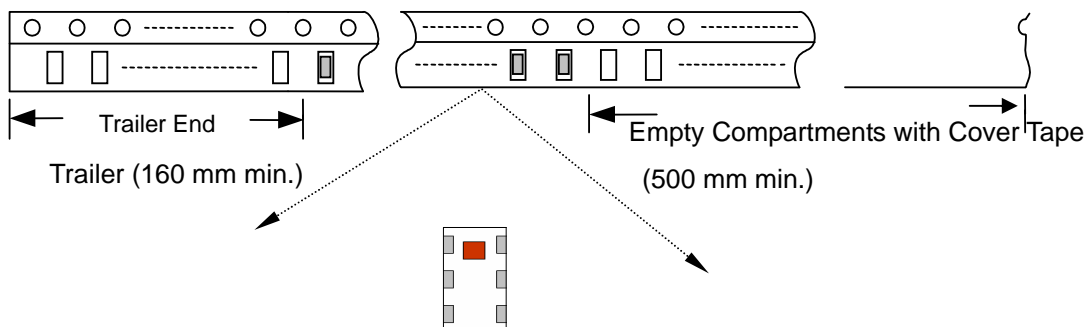
### ❖Reel Dimensions (Unit: mm)



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  $300 \pm 10$  mm/min .

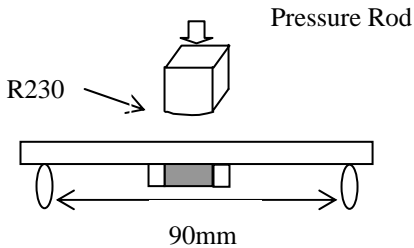
❖ **Storage Conditions**

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

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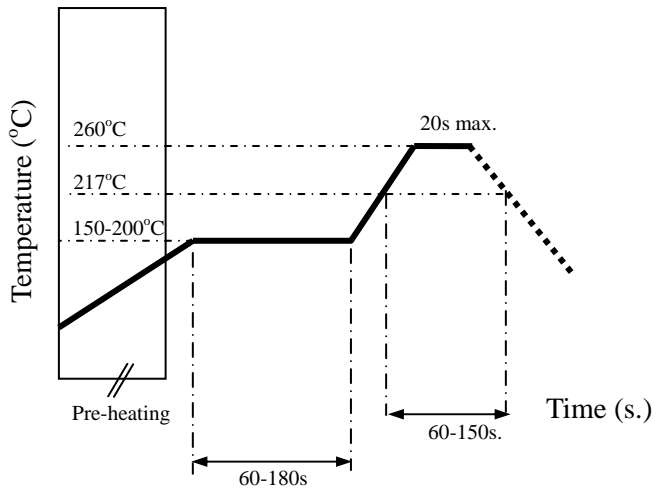
## Mechanical & Environmental Characteristics

Item	Requirements	Procedure
Solderability	<ol style="list-style-type: none"> <li>No apparent damage</li> <li>More than 95% of the terminal electrode shall be covered with new solder</li> </ol>	<ol style="list-style-type: none"> <li>Preheat: <math>120 \pm 5^\circ\text{C}</math></li> <li>Solder: <math>245 \pm 5^\circ\text{C}</math> for <math>5 \pm 1</math> sec</li> </ol>
Soldering strength (Termination Adhesion)	<ol style="list-style-type: none"> <li>1kg minimum</li> </ol>	<ol style="list-style-type: none"> <li>Solder specimen onto test jig.</li> <li>Apply push force at 0.5mm/s until electrode pads are peeled off or ceramic are broken. Pushing force is applied to longitude direction</li> </ol>
Deflection (Substrate Bending)	<ol style="list-style-type: none"> <li>No apparent damage</li> </ol>	<ol style="list-style-type: none"> <li>Solder specimen onto test jig (FR4, 0.8mm) using the recommend soldering profile.</li> <li>Apply a bending force of 2mm deflection</li> </ol> 
Heat/Humidity Resistance	<ol style="list-style-type: none"> <li>No apparent damage</li> <li>Fulfill the electrical specification after test</li> </ol>	<ol style="list-style-type: none"> <li>Temperature: <math>85 \pm 2^\circ\text{C}</math></li> <li>Humidity: 90% ~ 95% RH</li> <li>Duration: <math>1000 \pm 48</math>hrs</li> <li>Recovery: 1-2hrs</li> </ol>
Thermal shock (Temperature Cycle)	<ol style="list-style-type: none"> <li>No apparent damage</li> <li>Fulfill the electrical specification after test</li> </ol>	<ol style="list-style-type: none"> <li>One cycle/step 1 : <math>125 \pm 5^\circ\text{C}</math> for 30 min step 2 : <math>-40 \pm 5^\circ\text{C}</math> for 30 min</li> <li>No of cycles : 100</li> <li>Recovery: 1-2 hrs</li> </ol>
Low Temperature Resistance	<ol style="list-style-type: none"> <li>No apparent damage</li> <li>Fulfill the electrical specification after test</li> </ol>	<ol style="list-style-type: none"> <li>Temperature: <math>-40 \pm 5^\circ\text{C}</math></li> <li>Duration: <math>500 \pm 24</math>hrs</li> <li>Recovery: 1-2hrs</li> </ol>

## 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](mailto:acx@acxc.com.tw)

<http://www.acxc.com.tw>