

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 LTE mobile communication.

Specifications

Part Number	Passband (MHz)	Insertion Loss (dB)	Return Loss (dB)	Attenuation (dB)	Isolation (dB)
DP2012-R1746KM	617 - 960	0.35 max. / 0.13 typ.@ 25°C 0.50 max. @-40~85°C	12 min.	18 min. @3300 - 3400MHz 20 min. @3400 - 5000MHz 25 min. @5150 - 5925MHz	30 min. @617 - 960MHz
	1427 - 1511	0.4 max. / 0.24 typ.@ 25°C 0.60 max. @-40~85°C			22.5 min. @1427 - 1511MHz
	1710 - 2170	0.5 max. / 0.36 typ.@ 25°C 0.70 max. @-40~85°C			17.5 min. @1710 - 2170MHz
	2300 - 2496	0.7 max. / 0.45 typ.@ 25°C 0.90 max. @-40~85°C			17 min. @2300 - 2496MHz
	2496 - 2690	0.9 max. / 0.67 typ.@ 25°C 1.1 max. @-40~85°C			15 min. @2496 - 2690MHz
	3300 - 3400	0.8 max. / 0.57 typ.@ 25°C 1.0 max. @-40~85°C	12 min.	30 min. @617 - 960MHz 22.5 min. @1427 - 1511MHz 17.5 min. @1710 - 2170MHz 17 min. @2300 - 2496MHz 16 min. @2496 - 2690MHz 23.5 min. @10300 - 11850MHz 5 min. @15450 - 17775MHz	18 min. @3300 - 3400MHz
	3400 - 3800	0.7 max. / 0.45 typ.@ 25°C 0.9 max. @-40~85°C			20 min. @3400 - 4200MHz
	3800 - 5000	0.6 max. / 0.45 typ.@ 25°C 0.8 max. @-40~85°C			20 min. @4400 - 5000MHz
	5150 - 5925	0.6 max. / 0.23 typ.@ 25°C 0.8 max. @-40~85°C			27.5 min. @5150 - 5925MHz

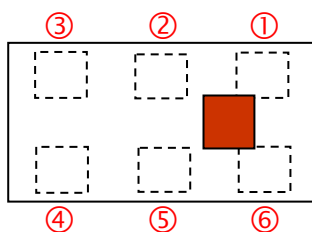
Q'ty/Reel (pcs) : 4,000
 Operating Temperature Range : -40 ~ +85°C
 Storage Temperature Range : -40 ~ +85°C
 Storage Period : 12 months max.
 Power Capacity : 3W max.

Part Number

DP 2012 - R 1746 KM □ /LF
① ② ③ ④ ⑤ ⑥ ⑦

① Type	DP : Diplexer	② Dimensions (L × W)	2.0 × 1.2 mm
③ Material Code	R	④ Frequency Range	1746=1700MHz /4600MHz
⑤ Specification Code	KM	⑥ Packaging	T: Tape & Reel B: Bulk
⑦ Soldering	/LF=lead-free		

Terminal Configuration

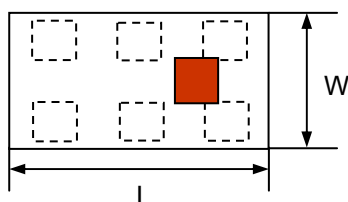


< Top view >

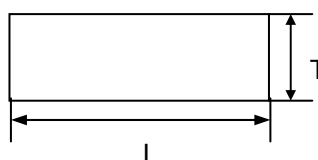
No.	Terminal Name	No.	Terminal Name
①	GND	④	Higher Freq. Port
②	Common Port	⑤	GND
③	GND	⑥	Lower Freq. Port

Dimensions and Recommended PC Board Pattern

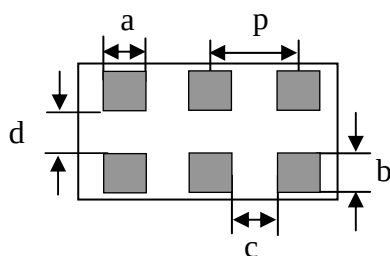
Unit : mm



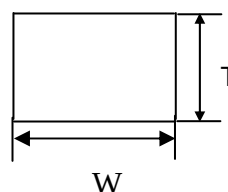
< Top view >



< Side view >

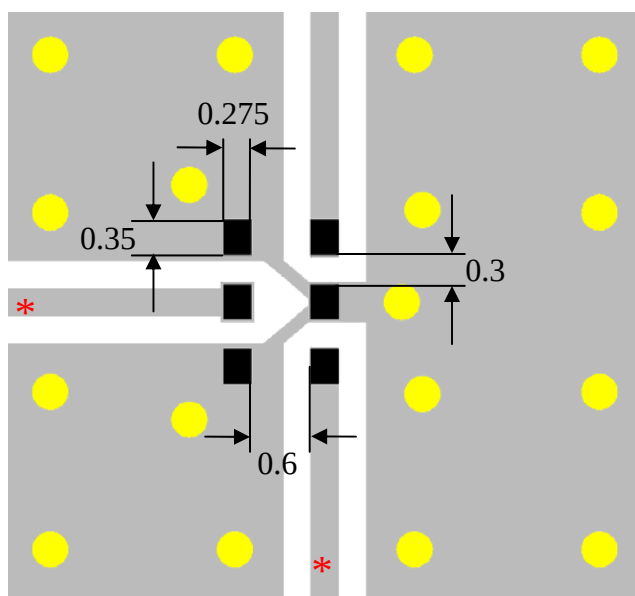


< Bottom view >



< Side view >

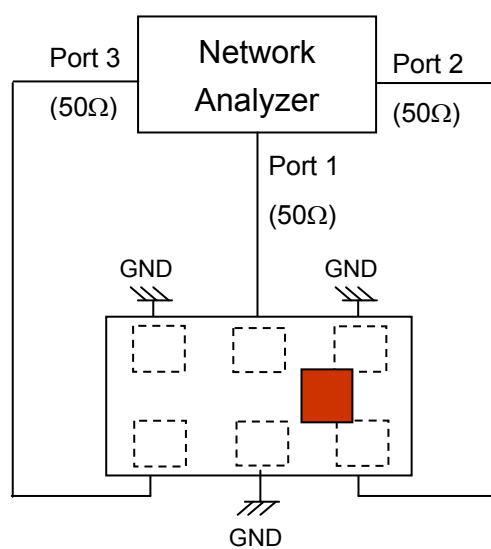
Mark	L	W	T	a	b	c	d	p
Dimensions	2.0 ±0.1	1.25 ±0.1	0.7 max.	0.35 ±0.1	0.275 ±0.1	0.3 ±0.15	0.6 ±0.1	0.65 ±0.1



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

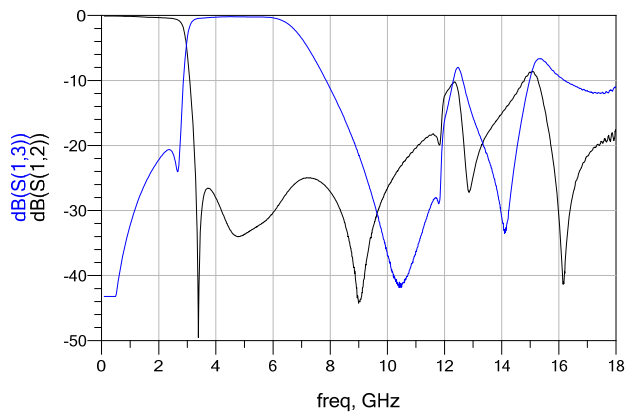
* Line width should be designed to match 50 Ω characteristic impedance, depending on PCB material and thickness.

Measuring Diagram

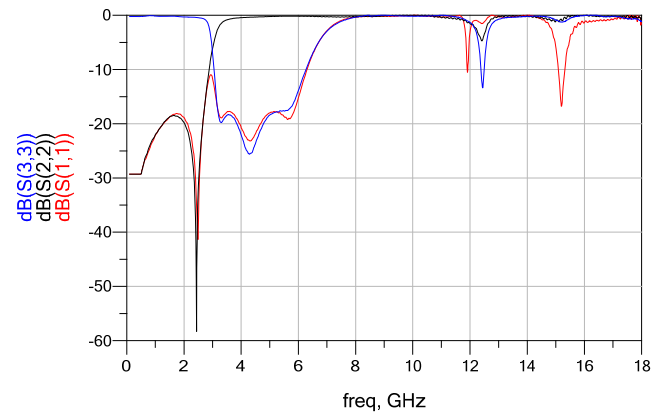


Electrical Characteristics (T=25°C)

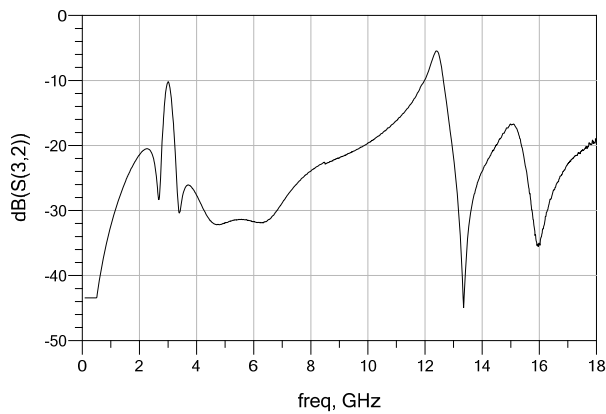
Attenuation



Return Loss



Isolation

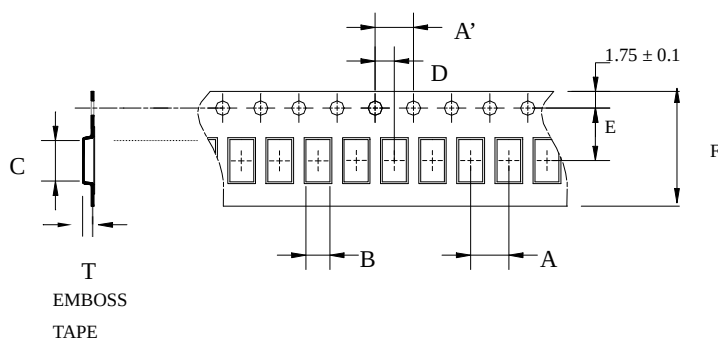


Notes

- ❖ The contents of this data sheet are subject to change without notice. Please confirm the specifications and delivery conditions when placing your order.

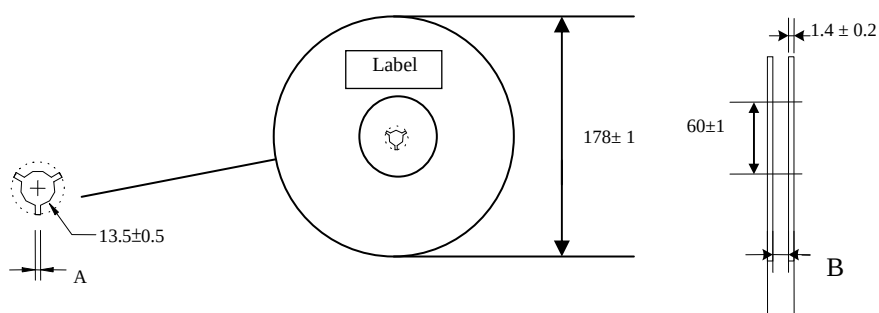
Taping Specifications

❖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±	0.65±	4,000pcs	Plastic (Embossed)
	0.1	0.1	0.05	0.05	0.05	0.1	0.1	0.05		

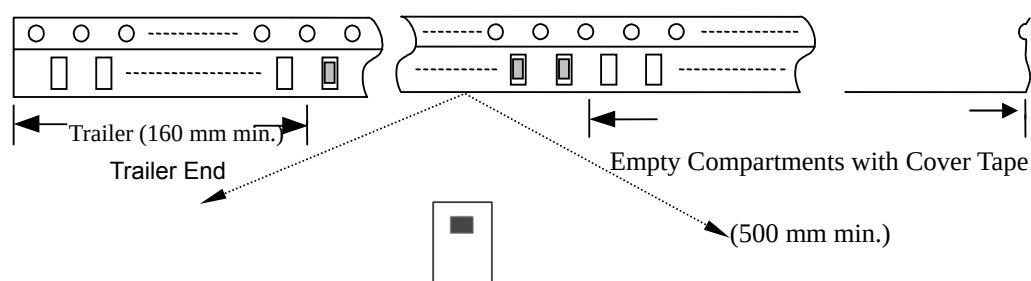
❖Reel Dimensions (Unit: mm)



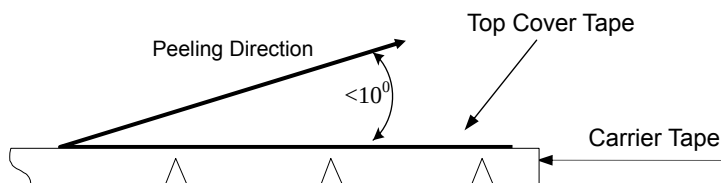
Label: Customer's Name,
ACX P/N, Q'ty, Date,
ACX Corp.

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 .

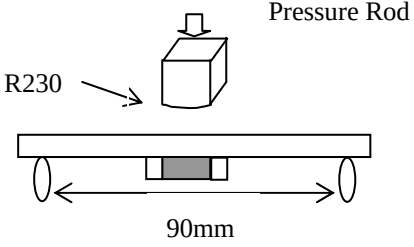
❖ **Storage Conditions**

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

Notes

- ❖ The contents of this data sheet are subject to change without notice. Please confirm the specifications and delivery conditions when placing your order.

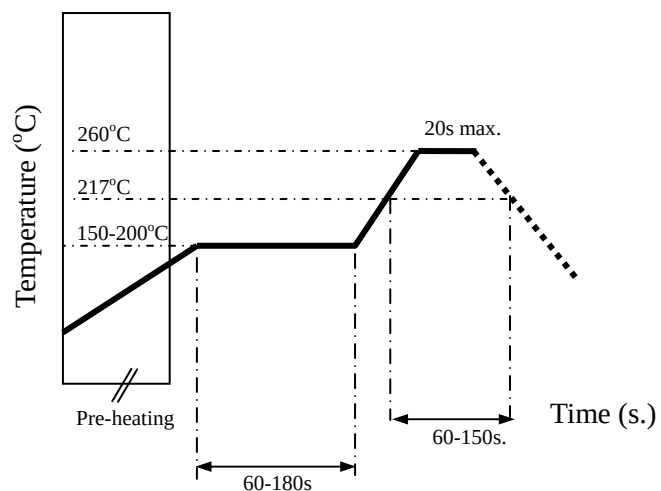
Mechanical & Environmental Characteristics

Item	Requirements	Procedure
Solderability	1. No apparent damage 2. More than 95% of the terminal electrode shall be covered with new solder	1. Preheat: $120 \pm 5^{\circ}\text{C}$ 2. Solder: $245 \pm 5^{\circ}\text{C}$ for 5 ± 1 sec
Soldering strength (Termination Adhesion)	1. 10N minimum	1. Solder specimen onto test jig. 2. 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)	1. No apparent damage	1. Solder specimen onto test jig (FR4, 1.6mm) using the recommend soldering profile. 2. Apply a bending force of 2mm deflection 
Heat/Humidity Resistance	1. No apparent damage 2. Fulfill the electrical specification after test	1. Temperature: $85 \pm 2^{\circ}\text{C}$ 2. Humidity: 90% ~ 95% RH 3. Duration: 1000 ± 48hrs 4. Recovery: 1-2hrs
Thermal shock (Temperature Cycle)	1. No apparent damage 2. Fulfill the electrical specification after test	1. One cycle/step 1 : $125 \pm 5^{\circ}\text{C}$ for 30 min step 2 : $-40 \pm 5^{\circ}\text{C}$ for 30 min 2. No of cycles : 100 3. Recovery: 1-2 hrs
Low Temperature Resistance	1. No apparent damage 2. Fulfill the electrical specification after test	1. Temperature: $-40 \pm 5^{\circ}\text{C}$ 2. Duration: 500 ± 24hrs 3. Recovery: 1-2hrs

Soldering Conditions

❖ Typical Soldering Profile for Lead-free Process

Reflow Soldering :



Notes

- ❖ The contents of this data sheet are subject to change without notice. Please confirm the specifications and delivery conditions when placing your order.

Advanced Ceramic X Corp.

No.165 Hanyang Road, Hsinchu Industrial District, Hsinchu Hsien, Taiwan, 30350

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

E-mail: acx@acxc.com.tw

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