ACX
Advanced Ceramic X

DP 1608 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

- ❖ LTE Mobile Communication.

Specifications

Part Number	Passband (MHz)	Insertion Loss (dB)	VSWR	Attenuation (dB)	Isolation (dB)
DP1608-V1746NS_	698~960	0.28 max. / 0.19 typ.	2.0 max. / 1.1 typ.	10 min. / 15 typ. @3300~3400MHz 13 min. / 16.4 typ. @3400~3800MHz 14 min. / 16.4 typ. @3800~4200MHz 15 min. / 17.9 typ. @4400~5000MHz 17 min. / 23.8 typ. @5150~5850MHz	10 min. / 14.7 typ. @3300~3400MHz 13 min. / 16.6 typ. @3400~3800MHz 14 min. / 16.6 typ. @3800~4200MHz 15 min. / 18.1 typ. @4400~5000MHz 17 min. / 23.6 typ. @5150~5850MHz
	1427~1511	0.45 max. / 0.35 typ.	2.0 max. / 1.25 typ.		
	1710~2170	0.55 max. / 0.44 typ.	2.0 max. / 1.27 typ.		
	2300~2690	1.05 max. / 0.7 typ.	2.0 max. / 1.4 typ.		
	3300~3400	1.65 max. / 1.18 typ.	2.0 max. / 1.29 typ.	17 min. / 18.7 typ. @698~960MHz 15 min. / 16.7 typ. @1427~1511MHz 15 min. / 16.6 typ. @1710~2170MHz 14 min. / 16.6 typ. @2300~2690MHz	17 min. / 18.7 typ. @698~960MHz 14 min. / 16 typ. @1427~1511MHz 14 min. / 15.8 typ. @1710~2170MHz 14 min. / 18.6 typ. @2300~2690MHz
	3400~3800	1.00 max. / 0.77 typ.	2.0 max. / 1.24 typ.		
	3800~4200	0.65 max. / 0.55 typ.	2.0 max. / 1.26 typ.		
	4400~5000	0.54 max. / 0.44 typ.	2.0 max. / 1.21 typ.		
	5150~5850	0.54 max. / 0.45 typ.	2.0 max. / 1.19 typ.		

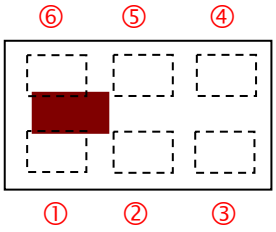
Q'ty/Reel (pcs) : 4000
Operating Temperature Range : -40 ~ +85°C
Storage Temperature Range : -40 ~ +85°C
Storage Period : 12 months max.
Power Capacity : 3W max.
MSL : Level 1
ESD HBM : ±2000V

Part Number

DP	1608	-	V	1746	NS	□	/LF
①	②		③	④	⑤	⑥	⑦

① Type	DP : Diplexer	② Dimensions (L × W)	1.6 × 0.8 mm
③ Material Code	V	④ Frequency Range	1746=1700MHz/4600MHz
⑤ Specification Code	NS	⑥ Packaging	T: Tape & Reel B: Bulk
⑦ Soldering	/LF=lead-free		

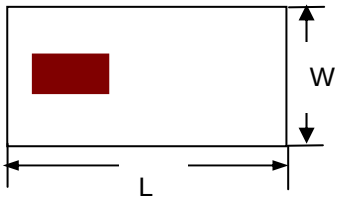
Terminal Configuration



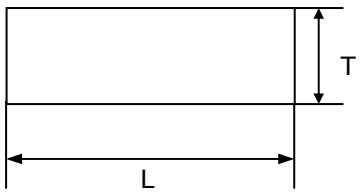
No.	Terminal Name	No.	Terminal Name
①	GND	④	Higher Freq. Port
②	Common Port	⑤	GND
③	GND	⑥	Lower Freq. Port

Dimensions and Recommended PC Board Pattern

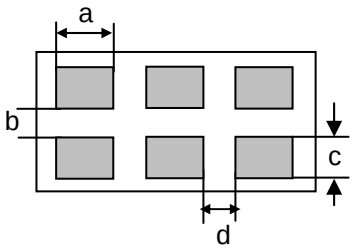
Unit:mm



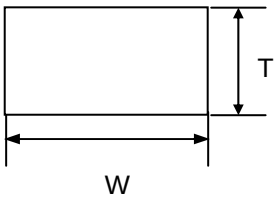
<Top View>



<Side View>

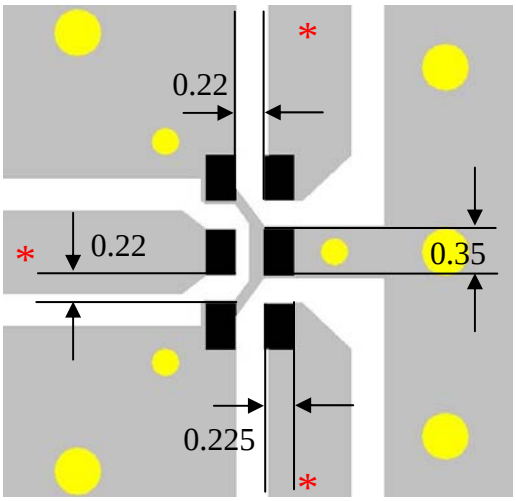


<Bottom View>



<Side View>

Mark	L	W	T	a	b	c	d
Dimensions	1.6±0.1	0.8±0.1	0.55±0.1	0.4 ±0.05	0.17 ±0.05	0.275 ±0.05	0.17 ±0.05



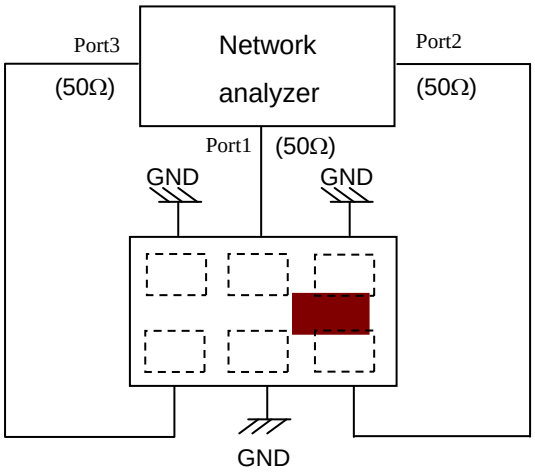
Solder Resist

Land

Through-hole (ϕ 0.35 / 0.2)

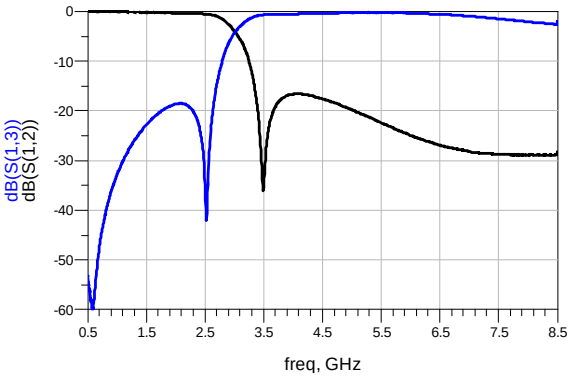
* Line width should be designed to match 50ohm characteristic impedance, depending on PCB material and thickness.

Measuring Diagram

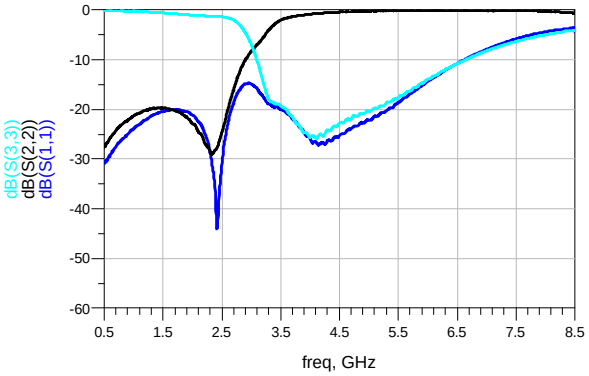


Electrical Characteristics (T=25℃)

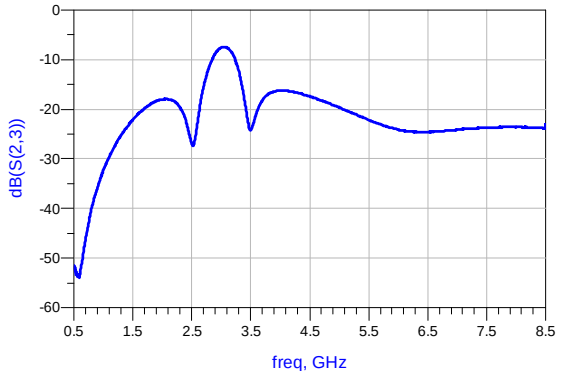
Attenuation



Return Loss



Isolation

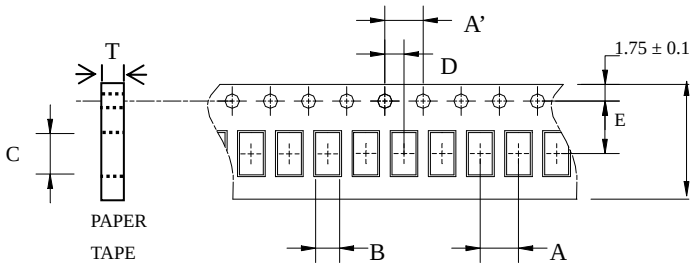


Notes

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

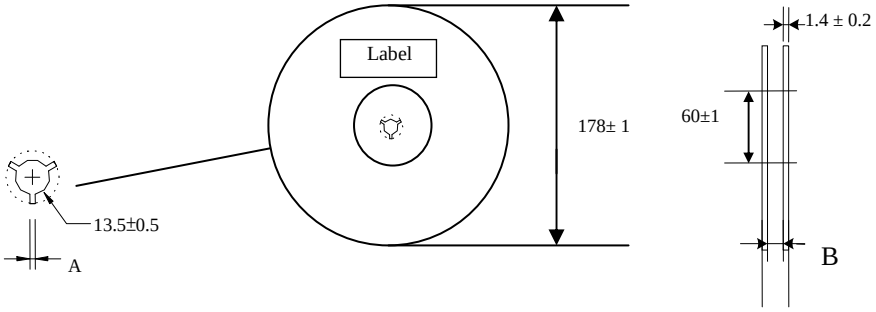
Taping Specifications

❖Tape Dimensions (Unit: mm) & Quantity



Type	A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
1608	4.0± 0.1	4.0± 0.1	1.10± 0.1	1.92± 0.1	2.0± 0.1	3.5± 0.1	8.0± 0.1	0.75± 0.05	4,000pcs	Paper

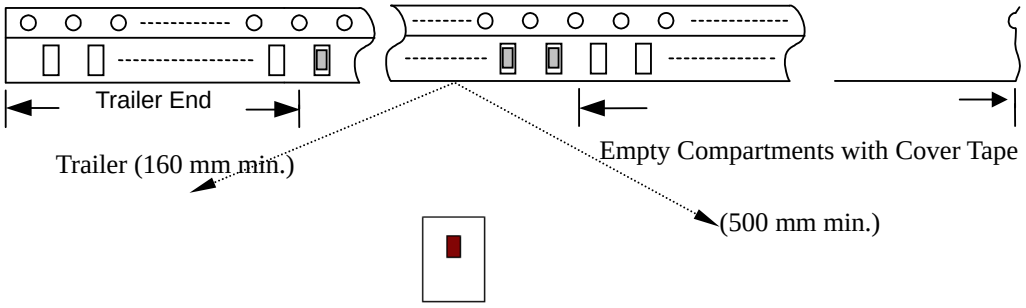
❖Reel Dimensions (Unit: mm)



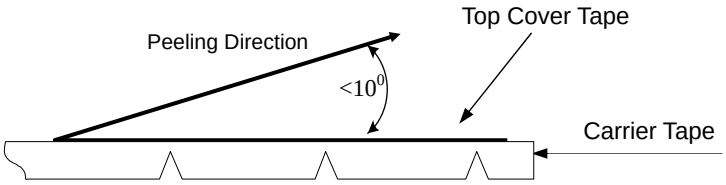
Label: Customer's Name,
ACX P/N, Q'ty, Date,
ACX Corp.

Type	A	B
1608	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 .

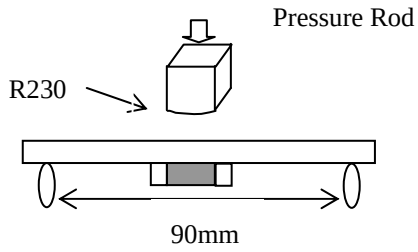
❖**Storage Conditions**

(1) Temperature: 5 ~35℃, 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.

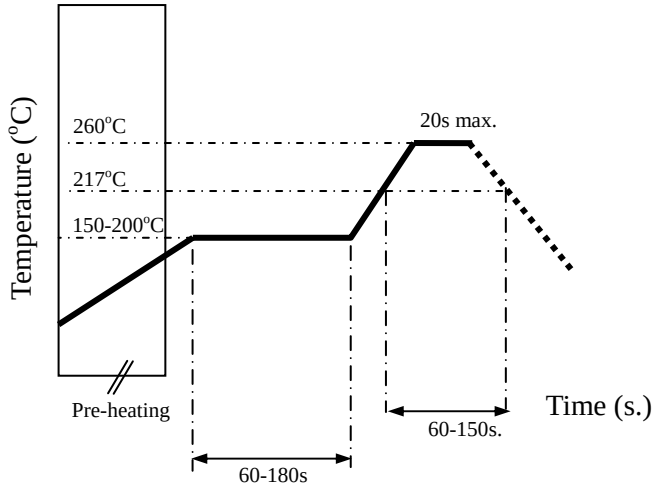
Mechanical & Environmental Characteristics

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± 5 °C 2. Solder: 245± 5°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, 1.6 mm) 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± 2°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 ± 5°C for 30 min step 2：- 40 ± 5°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± 5 °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.
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