

CP 2012 Series (Preliminary)

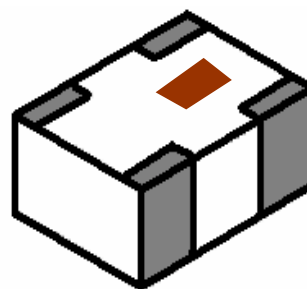
Multilayer Chip Couplers

Features

- ❖ Monolithic SMD with small, low-profiled, and light-weight type.

Applications

- ❖ 0.8 ~ 6 GHz wireless communication systems, including DECT/PACS/PHS/GSM/DCS phones, WLAN card, Bluetooth modules, etc.



Specifications

Part Number	Pass Band (dB)	Insertion Loss (dB)	Return Loss (dB)	Amplitude Balance (dB)	Phase Deviation (degree)	Isolation (dB)
CP2012-03D1575_	1560 ~ 1590	3.3 ± 0.5	10.0 min.	1.0 max.	90 ± 3	16.0 min.

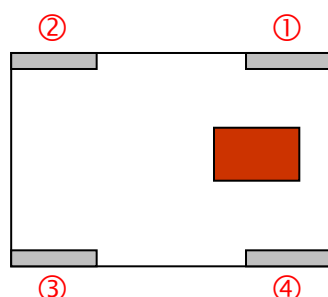
Q'ty/Reel (pcs) : 4000
 Operating Temperature Range : -40 ~ +85 °C
 Storage Temperature Range : -40 ~ +85 °C
 Storage Period : 12 months max.
 Power Capacity : 3W max.

Part Number

CP **2012** - **03** **D** **1575** **□** **/LF**
 ① ② ③ ④ ⑤ ⑥ ⑦

① Type	CP : Coupler	② Dimensions (L × W)	2.0 × 1.25 mm
③ Coupling	03 : 3dB	④ Specification Code	D
⑤ Central Frequency	1575 : 1575MHz	⑥ Packaging	T: Tape & Reel B: Bulk
⑦ Soldering	=lead-containing /LF=lead-free		

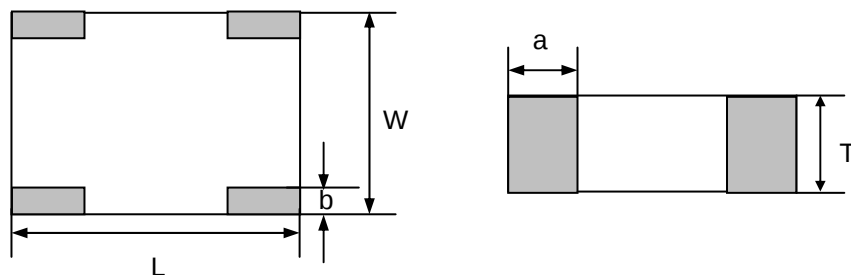
Terminal Configuration



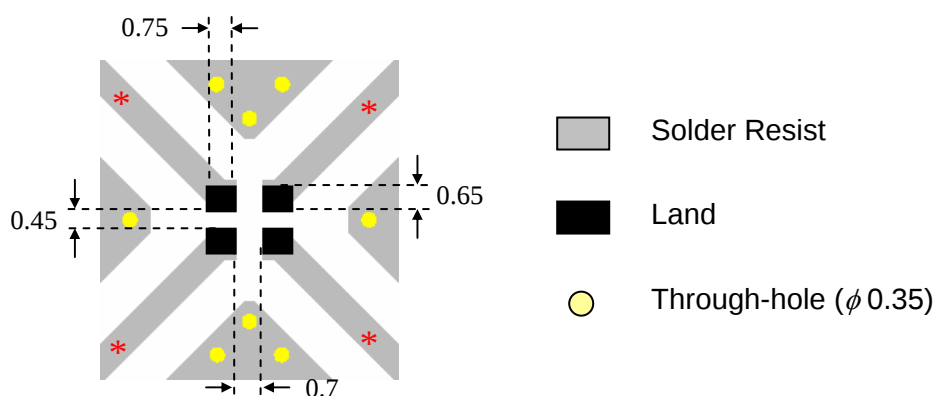
No.	Terminal Name	No.	Terminal Name
①	Termination	③	OUT2
②	IN	④	OUT1

Dimensions and Recommended PC Board Pattern

Unit : mm



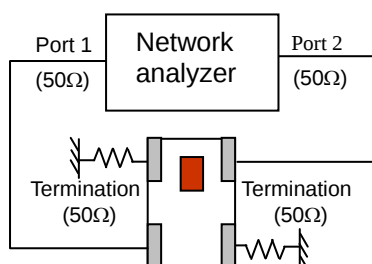
Mark	L	W	T	a	b
Dimensions	2.0 ± 0.1	1.25 ± 0.1	0.7 ± 0.1	0.56 ± 0.25	0.35 ± 0.15



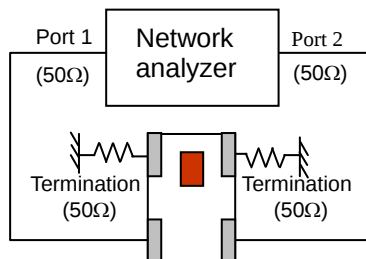
* Line width should be designed to match 50 Ω characteristic impedance, depending on PCB material and thickness.

Measuring Diagram

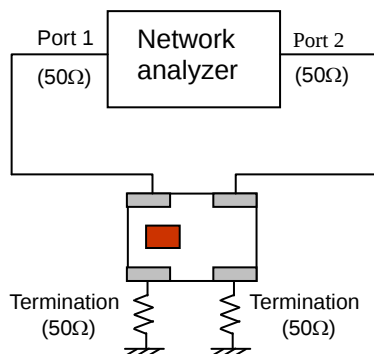
Insertion Loss 1 & Return Loss



Insertion Loss 2 & Return Loss



Isolation



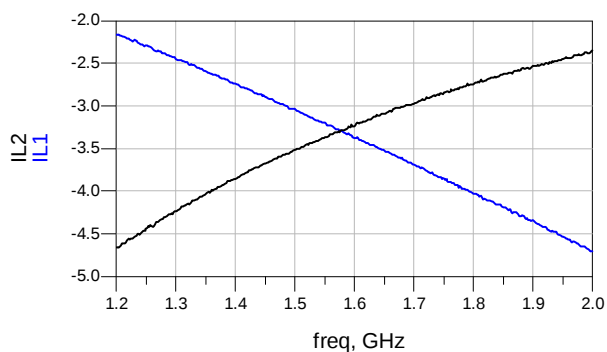
Amplitude Balance & Phase Deviation

$$\text{Amp_Balance} = \text{dB(I.L.1)} - \text{dB(I.L.2)}$$

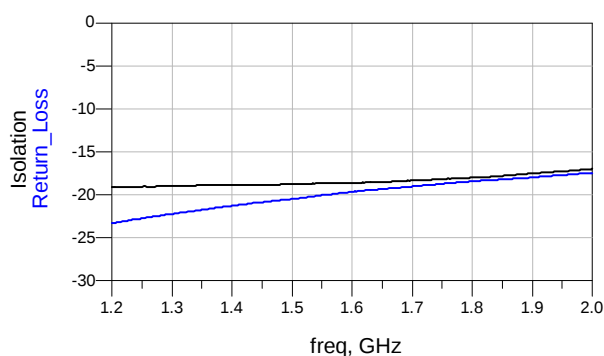
$$\text{Phase_Deviation} = \text{Phase(I.L.1)} - \text{Phase(I.L.2)}$$

Typical Electrical Characteristics (T=25°C)

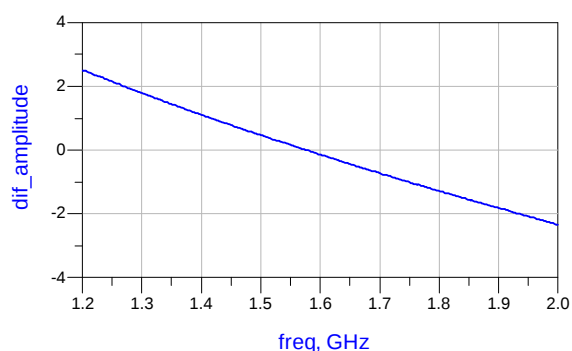
Insertion Loss 1 & 2



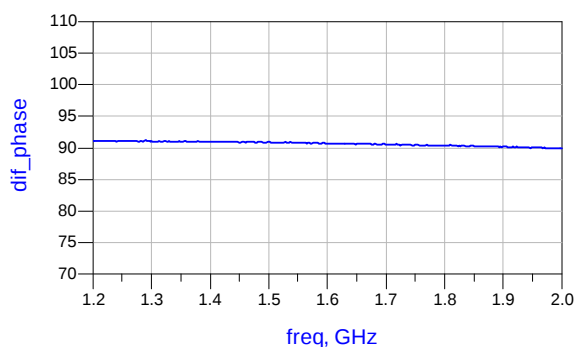
Return Loss & Isolation



Amplitude Balance



Phase Deviation

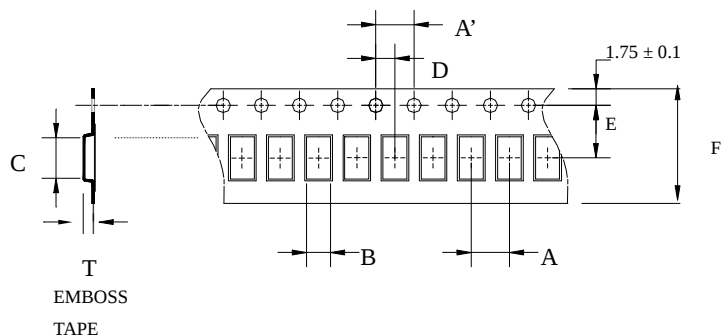


Notes

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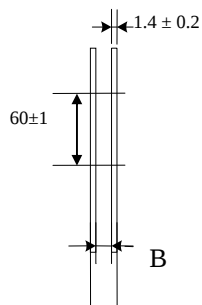
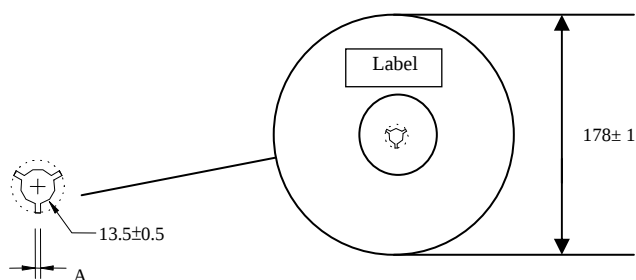
Taping Specifications

❖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	1.00± 0.05	4,000pcs	Plastic (Embossed)

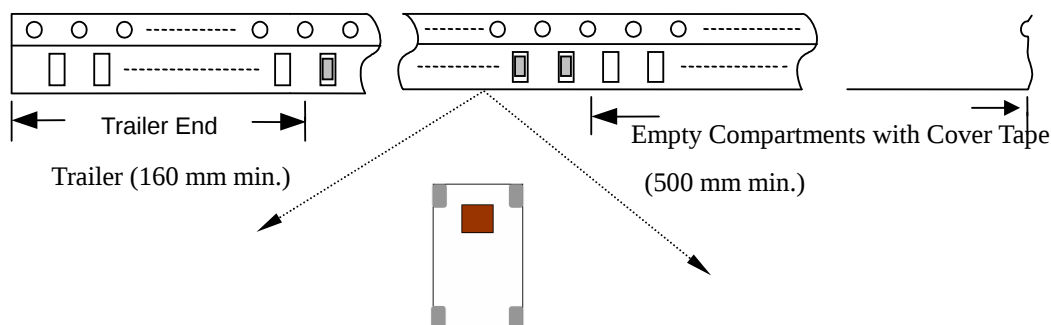
❖Reel Dimensions (Unit: mm)



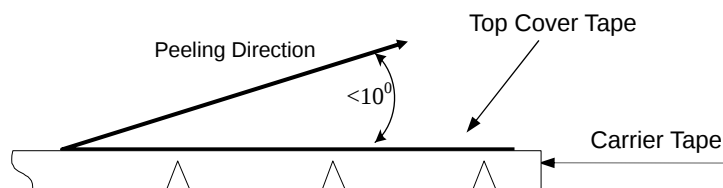
Label: Customer's Name,
ACX P/N, Q'ty, Date,
ACX Corp.

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 .

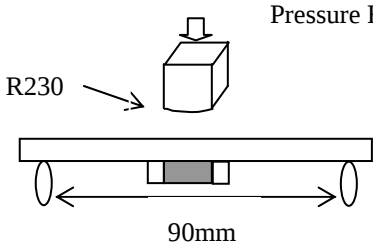
❖ Storage Conditions

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

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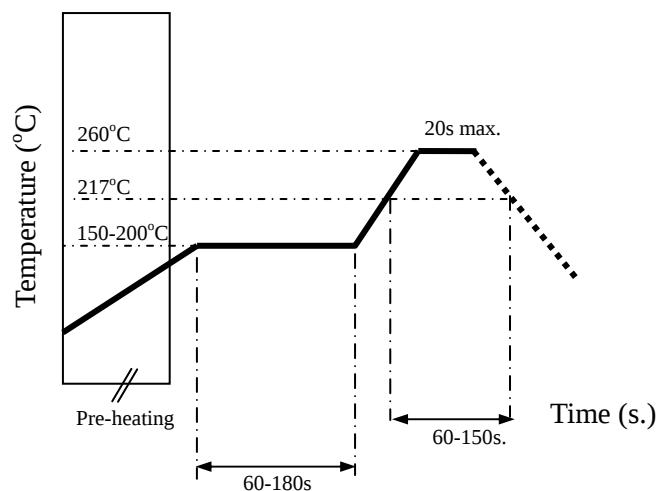
Mechanical & Environmental Characteristics

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. 1kg 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, 0.8mm) 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: $-40^{\circ} \pm 5^{\circ}\text{C}$ 2. Duration: 500 ± 24hrs 3. Recovery: 1-2hrs

Soldering Conditions

❖ Typical Soldering Profile for Lead-free Process

Reflow Soldering :



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