

CP1005 Series (Preliminary)

Multilayer Chip Couplers

Features

- ❖ Monolithic SMD with ultra-small, low-profiled, and light-weight type.
- ❖ HF & RoHS compliant

Applications

- ❖ 0.4 ~ 6 GHz wireless communication systems, including DECT/ PACS/ PHS/ GSM/ DCS phones, WLAN card, Bluetooth modules, etc.



Specifications

Part Number	Frequency Range (MHz)	Insertion Loss @ BW (dB)	V.S.W.R	Coupling (dB)	Directivity (dB)
CP1005-18C2455_	Band 1: 2400~2500	0.5 max.	1.3 max.	18.0 ± 1.5	10.0 typ.
	Band 2: 4900~5850	1.0 max.	1.8 max.	11.5 ± 1.5	10.0 typ.

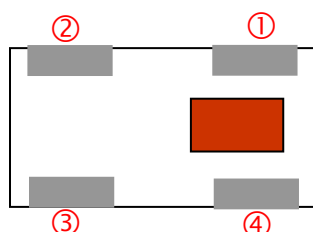
Q'ty/Reel (pcs) : 10000
 Operating Temperature Range : -40 ~ +85 °C
 Storage Temperature Range : -40 ~ +85 °C
 Storage Period : 12 months max.
 Power Capacity : 3W max.

Part Number

CP 1005 - 18 C 2455 □ /LF
 ① ② ③ ④ ⑤ ⑥ ⑦

① Type	CP : Coupler	② Dimensions (L × W)	1.0 × 0.5 mm
③ Coupling	18 : 18.0 dB	④ Specification Code	C
⑤ Frequency	2455=2450MHz/ 5500MHz	⑥ Packaging	T: Tape & Reel B: Bulk
⑦ Soldering	=lead-containing /LF=lead-free		

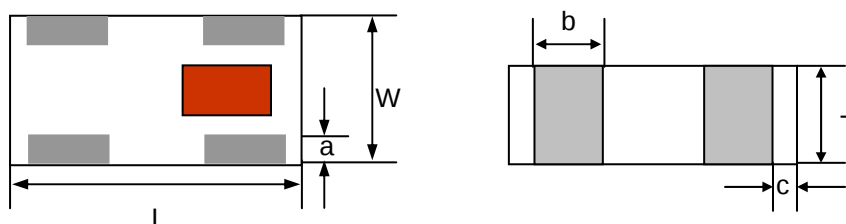
Terminal Configuration



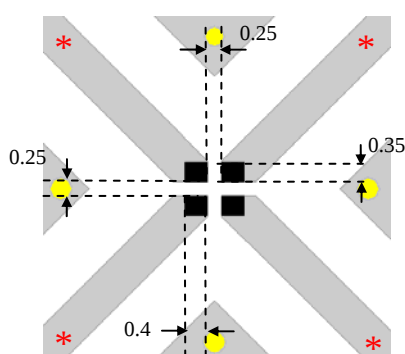
No.	Terminal Name	No.	Terminal Name
①	Out	③	Coupling
②	IN	④	Termination

Dimensions and Recommended PC Board Pattern

Unit : mm



Mark	L	W	T	a	b	c
Dimensions	1.0 ± 0.1	0.5 ± 0.1	0.37 ± 0.05	0.1 ± 0.05	0.25 ± 0.05	0.1 ± 0.05

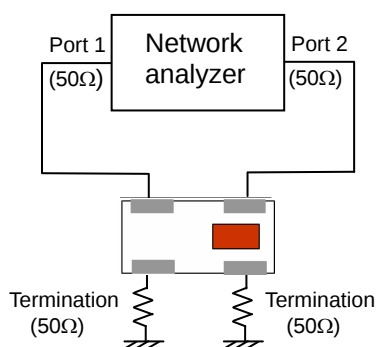


-  Solder Resist
-  Land
-  Through-hole ($\phi 0.3$)

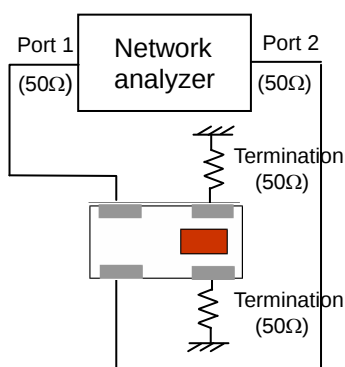
* Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

Measuring Diagram

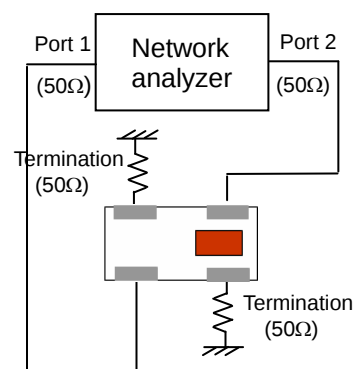
Attenuation



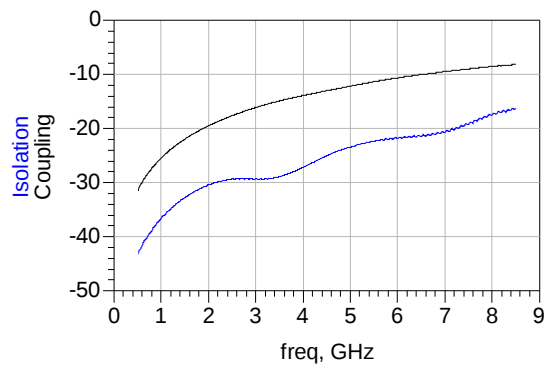
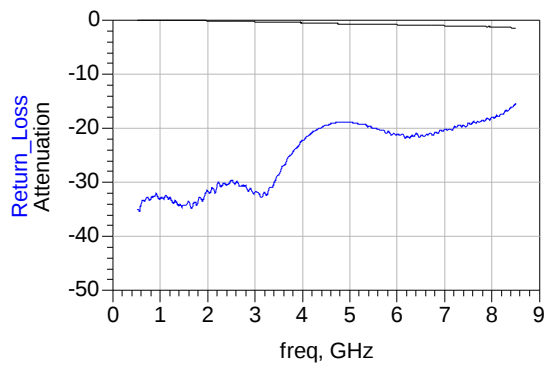
Coupling



Isolation



Typical Electrical Characteristics (T=25°C)

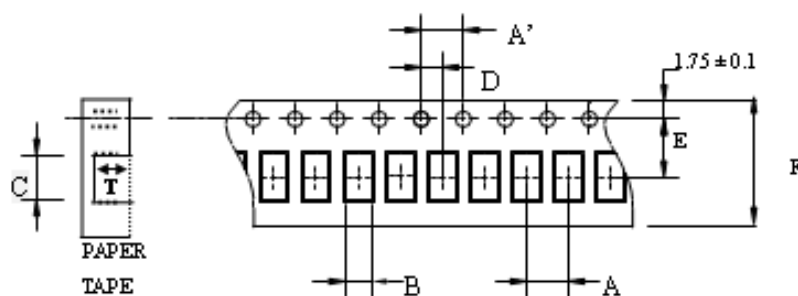


Notes

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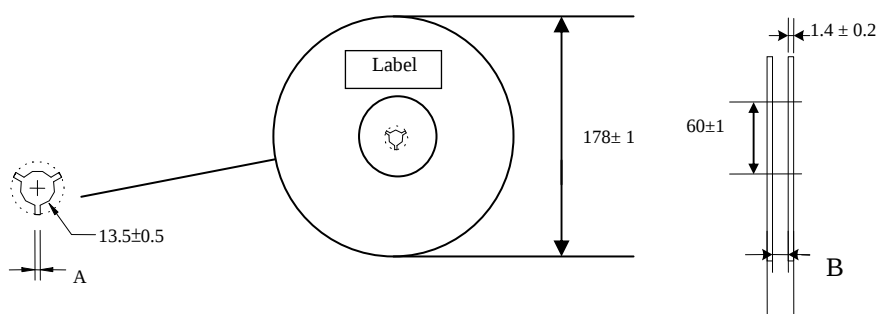
Taping Specifications

❖Tape Dimensions (Unit: mm) & Quantity



Type	A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
1005	2.0± 0.05	4.0± 0.1	0.62± 0.03	1.12± 0.03	2.0± 0.05	3.5± 0.05	8.0± 0.1	0.45± 0.03	10,000pcs	Paper

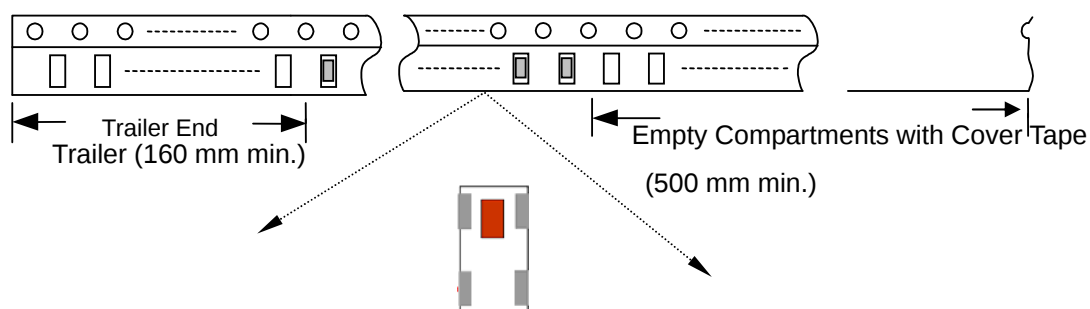
❖Reel Dimensions (Unit: mm)

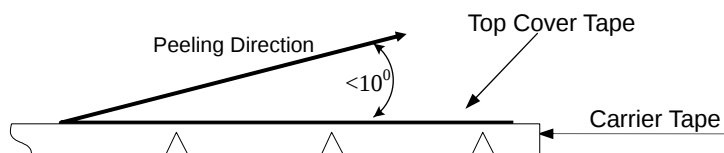


Label: Customer's Name,
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ACX Corp.

Type	A	B
1005	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 .

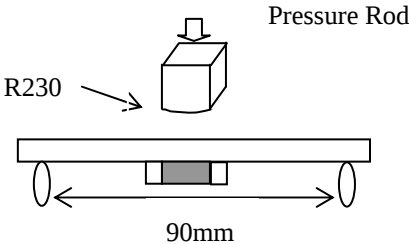
❖ Storage Conditions

- (1) Temperature: 15 ~35°C , relative humidity (RH): 45~75%.
- (2) Non-corrosive environment.

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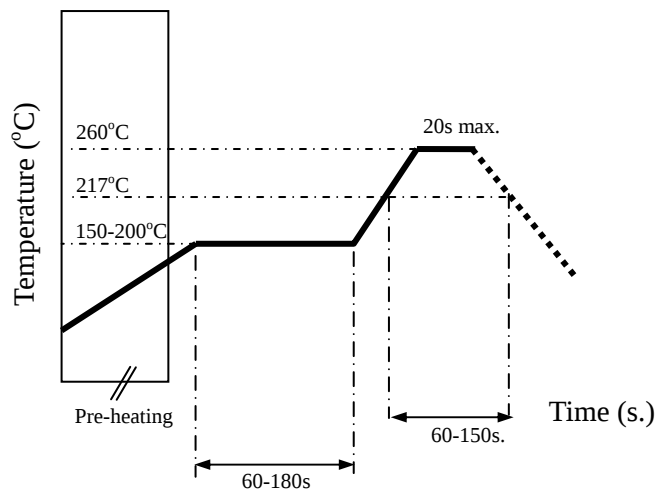
Mechanical & Environmental Characteristics

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