

BL 2012 Series(Preliminary)

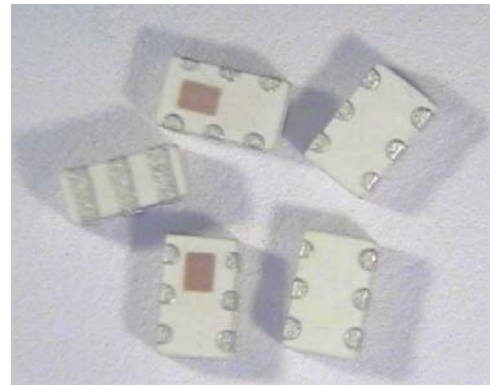
Multilayer Chip Baluns

Features

- ❖ Monolithic SMD with small, low-profile and light-weight type.
- ❖ RoHS compliant

Applications

- ❖ 950 ~ 3000MHz wireless communication systems, including Sat LNB.



Target Specifications

| Part Number | Frequency Range (MHz) | Unbalanced Impedance (ohm) | Balanced Impedance (ohm) | Insertion Loss (dB) | VSWR @BW | Phase Difference (degree) | Amplitude Difference (dB) |
|------------------------|-----------------------|----------------------------|--------------------------|---------------------|----------|---------------------------|---------------------------|
| BL2012-07M1975_ | 950 ~ 3000 | 75 | 75 | 2.5 max. | 2.0 max. | 180 ± 12 | 2.0 max. |

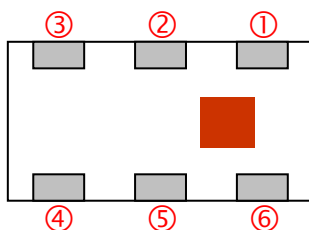
Q'ty/Reel (pcs) : 4000
 Operating Temperature Range : -40 ~ +85 °C
 Storage Temperature Range : -40 ~ +85 °C
 Storage Period : 12 months max.
 Power Capacity : 0.5W max.

Part Number

BL 2012 - 07 M 1975 □ /LF
 ① ② ③ ④ ⑤ ⑥ ⑦

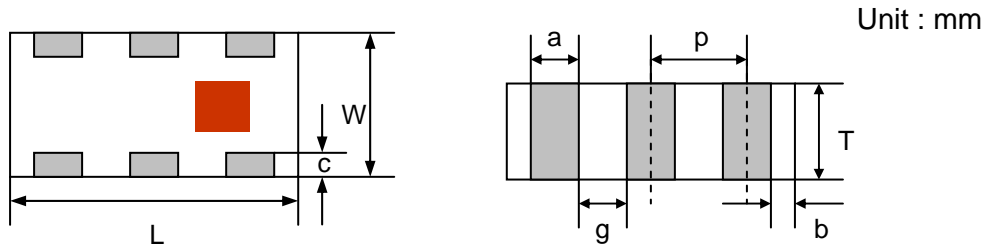
| | | | |
|----------------------|----------------|------------------------|---------------------------|
| ① Type | BL : Balun | ② Dimensions (L x W) | 2.0 x 1.25 mm |
| ③ Balanced Impedance | 07 : 75 ohm | ④ Specification Code | M |
| ⑤ Central Frequency | 1975 : 1975MHz | ⑥ Packaging | T: Tape & Reel B: Bulk |
| ⑦ Soldering | /LF=lead-free | | |

Terminal Configuration

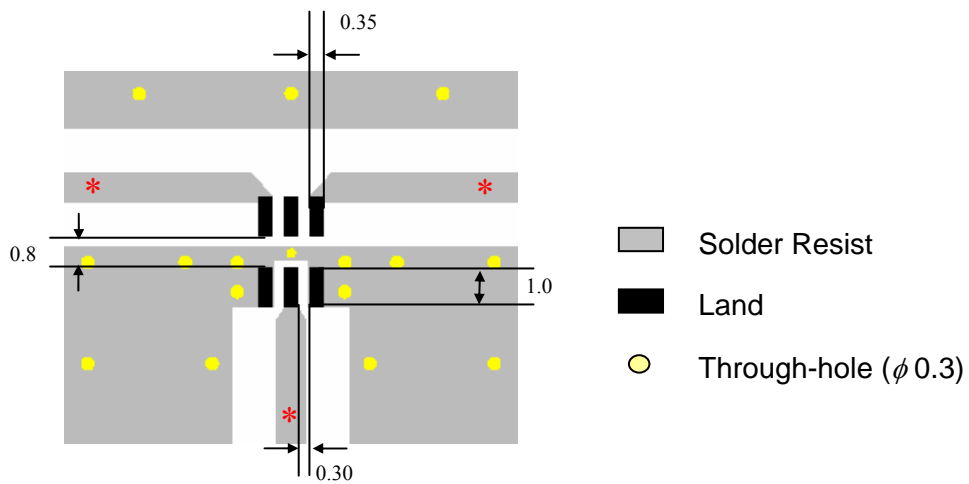


| No. | Terminal Name | No. | Terminal Name |
|-----|-----------------|-----|---------------|
| ① | GND | ④ | Balanced Port |
| ② | Unbalanced Port | ⑤ | NC |
| ③ | GND | ⑥ | Balanced Port |

Dimensions and Recommended PC Board Pattern

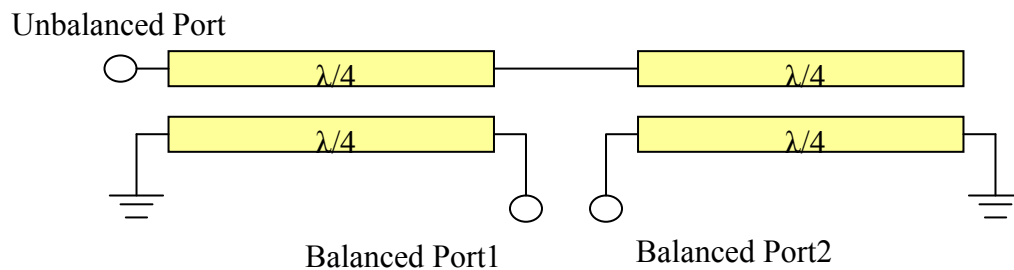


| Mark | L | W | T | a | b | c | g | p |
|------------|---------------|----------------|----------------|---------------|---------------|------------------|----------------|-----------------|
| Dimensions | 2.0 ± 0.1 | 1.25 ± 0.1 | 0.95 ± 0.1 | 0.3 ± 0.1 | 0.2 ± 0.1 | $0.3+0.1 / -0.2$ | 0.35 ± 0.1 | 0.65 ± 0.05 |

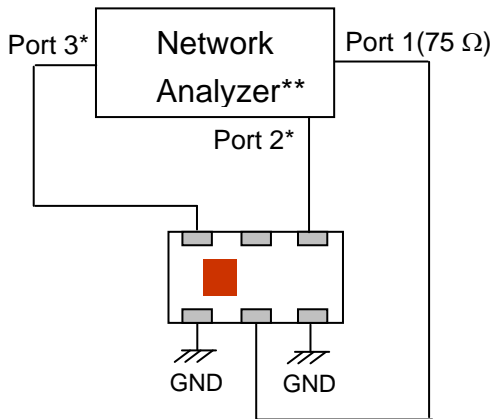


* Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

Equivalent Circuit



Measuring Diagram



Port 1: Unbalanced Port

Ports 2 and 3: Balanced Port

$$IL = S_{ds21}$$

$$RL = S_{ss11}$$

$$\text{Amp_balance} = \text{dB}(S(3,1)/S(2,1))$$

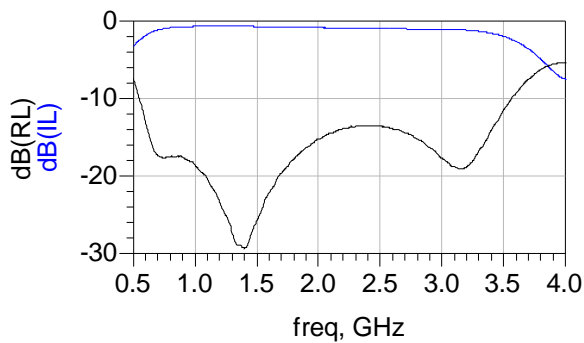
$$\text{Phase_balance} = \text{Phase}(S(3,1)/S(2,1))$$

*Impedance for ports 2 and 3 = Balanced Impedance/2

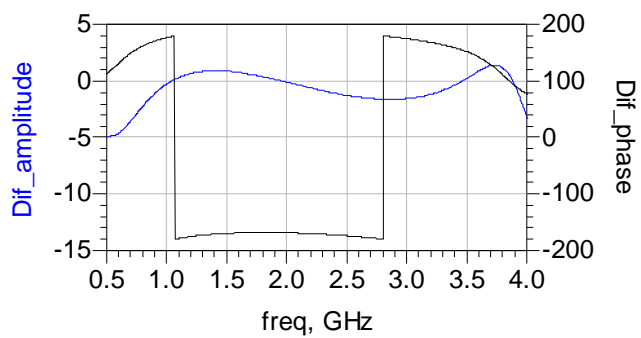
**E5071B from Agilent

Typical Electrical Characteristics (T=25°C)

Insertion and Return Loss



Amplitude and Phase Balance

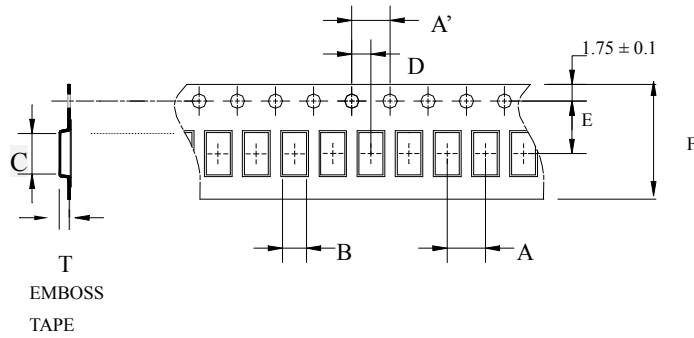


Notes

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

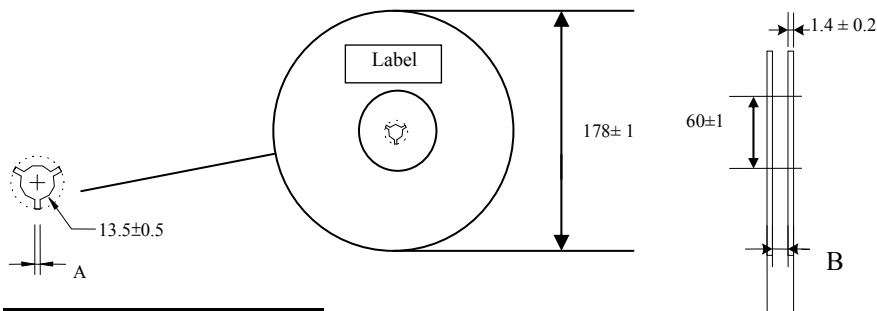
Taping Specifications

❖Tape Dimensions (Unit: mm) & Quantity



| Type | A | A' | B | C | D | E | F | T | Quantity/reel | Tape material |
|------|-------------|-------------|---------------|---------------|--------------|-------------|-------------|---------------|---------------|-----------------------|
| 2012 | 4.0± 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 | 1.08± 0.05 | 4,000pcs | Plastic (Embossed) |

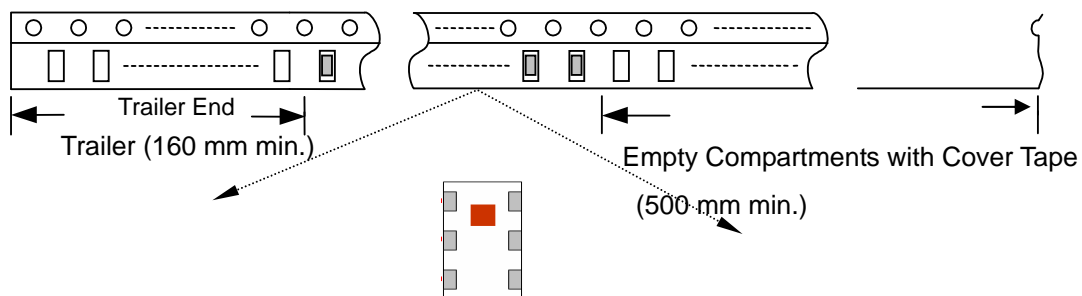
❖Reel Dimensions (Unit: mm)



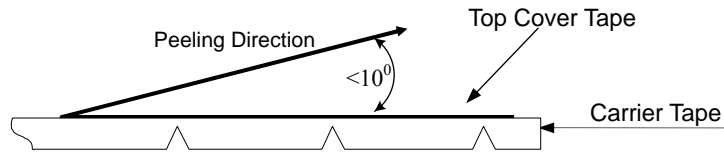
Label: Customer's Name,
ACX P/N, Q'ty, Date,
ACX Corp.

| 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 .

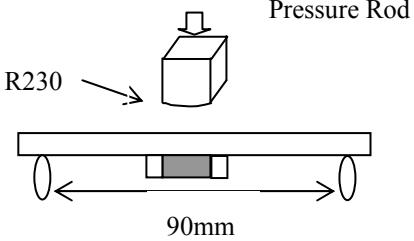
❖ **Storage Conditions**

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

Notes

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

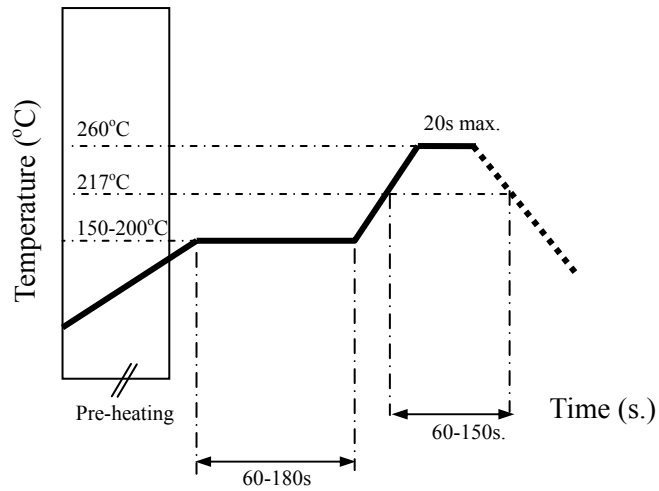
Mechanical & Environmental Characteristics

| Item | Requirements | Procedure |
|--|--|--|
| Solderability | <ol style="list-style-type: none"> No apparent damage More than 95% of the terminal electrode shall be covered with new solder | <ol style="list-style-type: none"> Preheat: $120 \pm 5^\circ\text{C}$ Solder: $245 \pm 5^\circ\text{C}$ for 5 ± 1 sec |
| Soldering strength (Termination Adhesion) | <ol style="list-style-type: none"> 1kg minimum | <ol style="list-style-type: none"> 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) | <ol style="list-style-type: none"> No apparent damage | <ol style="list-style-type: none"> Solder specimen onto test jig (FR4, 0.8mm) using the recommend soldering profile. Apply a bending force of 2mm deflection.  |
| Heat/Humidity Resistance | <ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test | <ol style="list-style-type: none"> Temperature: $85 \pm 2^\circ\text{C}$ Humidity: 90% ~ 95% RH Duration: 1000 ± 48hrs Recovery: 1-2hrs |
| Thermal shock (Temperature Cycle) | <ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test | <ol style="list-style-type: none"> 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 | <ol style="list-style-type: none"> No apparent damage Fulfill the electrical specification after test | <ol style="list-style-type: none"> Temperature: $-40 \pm 5^\circ\text{C}$ Duration: 500 ± 24hrs 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>