

BL 2012 Series

Multilayer Chip Baluns

Features

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

Applications

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



Specifications

Part Number	Frequency Range (MHz)	Unbalanced Impedance (ohm)	Balanced Impedance (ohm)	Insertion Loss (dB)	VSWR @BW	Phase Difference (degree)	Amplitude Difference (dB)
BL2012-10B5512_	5150 ~ 5875	50	100	1.0 max.	2.0 max.	180 ± 10	2 max.

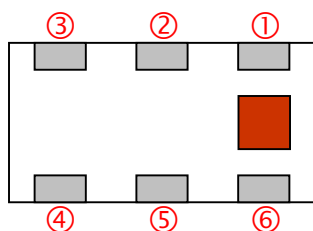
Q'ty/Reel (pcs) : 4000
 Operating Temperature Range : -40 ~ +85 °C
 Storage Temperature Range : -40 ~ +85 °C
 Power Capacity : 3W max.

Part Number

BL **2012** - **10** **B** **5512** **□** **/LF**
 ① ② ③ ④ ⑤ ⑥ ⑦

① Type	BL : Balun	② Dimensions (L × W)	2.0 × 1.25 mm
③ Balanced Impedance	10 : 100 ohm	④ Specification Code	B
⑤ Central Frequency	5512 : 5512MHz	⑥ Packaging	T: Tape & Reel B: Bulk
⑦ Soldering	lead-containing /LF=lead-free		

Terminal Configuration

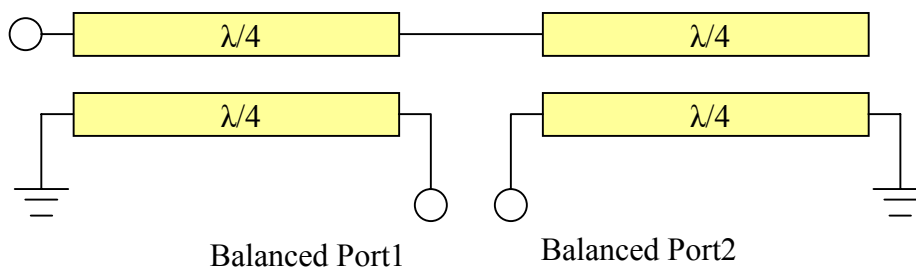


No.	Terminal Name	No.	Terminal Name
①	Unbalanced Port (IN)	④	Balanced Port (OUT2)
②	GND or DC feed	⑤	GND
③	Balanced Port (OUT1)	⑥	NC

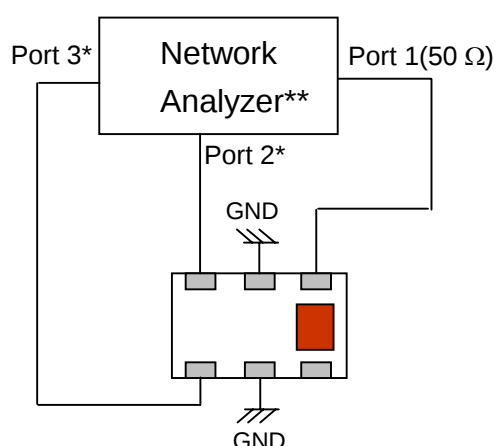
* Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

Equivalent Circuit

Unbalanced Port



Measuring Diagram



Port 1: Unbalanced Port

Ports 2 and 3: Balanced Port

$IL = S_{ds21}$

$RL = S_{ss11}$

$Amp_balance = dB(S(2,1)/S(3,1))$

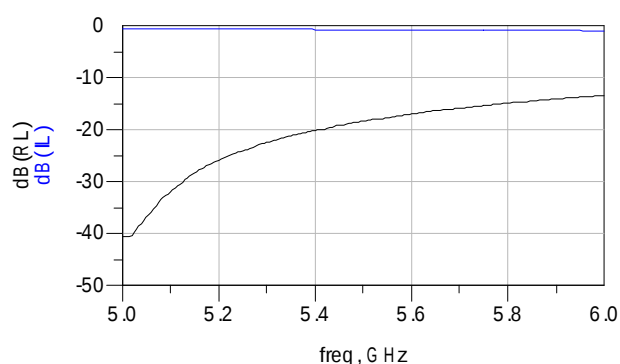
$Phase_balance = Phase(S(2,1)/S(3,1))$

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

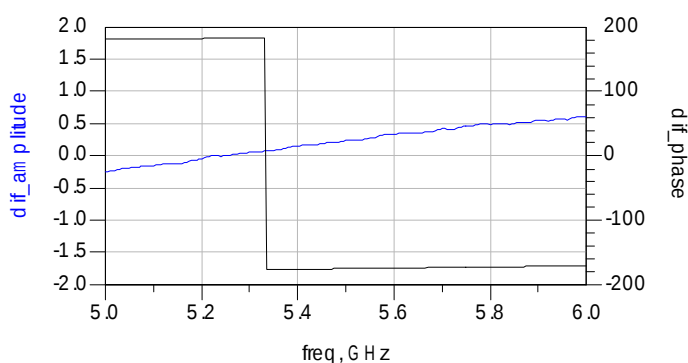
**E5071B from Agilent

Typical Electrical Characteristics (T=25°C)

Insertion and Return Loss



Amplitude and Phase Balance



Notes

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Advanced Ceramic X Corp.

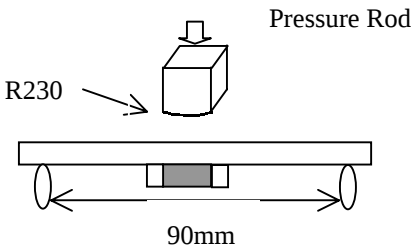
16 Tzu Chiang Road, Hsinchu Industrial District Hsinchu Hsien 303, Taiwan

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

E-mail: acx@acxc.com.tw

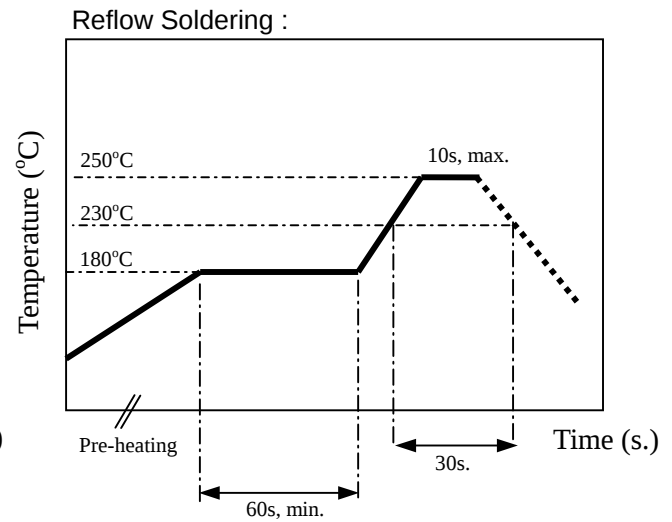
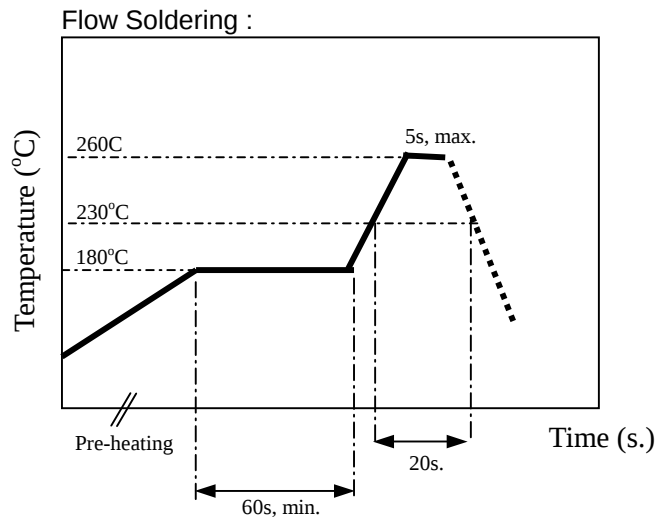
<http://www.acxc.com.tw>

Mechanical & Environmental Characteristics

	Requirements	Procedure
Solderability	- No apparent damage - More than 75% of the terminal electrode shall be covered with new solder	- Preheat: $120 \pm 5^{\circ}\text{C}$ - Solder: $230 \pm 5^{\circ}\text{C}$ for 5 ± 1 sec
Thermal shock (Temperature Cycle)	- No apparent damage - Fulfill the electrical specification after test	- One cycle/ step 1: $85 \pm 5^{\circ}\text{C}$ for 20sec step 2: $-40 \pm 3^{\circ}\text{C}$ for 20sec - Cycle time: 30min - No. of cycles: 100 - Recovery: 1-2hrs
Heat Resistance	- No apparent damage - Fulfill the electrical specification after test	- Temperature: $85 \pm 2^{\circ}\text{C}$ - Duration: 24 ± 2hrs - Recovery: 1-2hrs
Low Temperature Resistance	- No apparent damage - Fulfill the electrical specification after test	- Temperature: $-40^{\circ} \pm 5^{\circ}\text{C}$ - Duration: 24 ± 2hrs - Recovery: 1-2hrs
Humidity Resistance	- No apparent damage - Fulfill the electrical specification after test	- Temperature: $85 \pm 2^{\circ}\text{C}$ - Humidity: 80% ~ 85% RH - Duration: 1000 ± 48hrs - Recovery: 1-2hrs
Soldering strength (Push strength)	9.8N 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 (Bending)	- No apparent damage - Fulfill the electrical specification	- Solder specimen onto test jig (FR4, 0.8mm) using the recommend soldering profile. - Apply a bending force of 2mm deflection 
Drop Shock	No apparent damage	Dropped onto hard wood from height of 50 cm for 3 times ; each x,y and z direction except terminal direction

Soldering Conditions

❖ Typical Soldering Profile for Lead-free Process



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