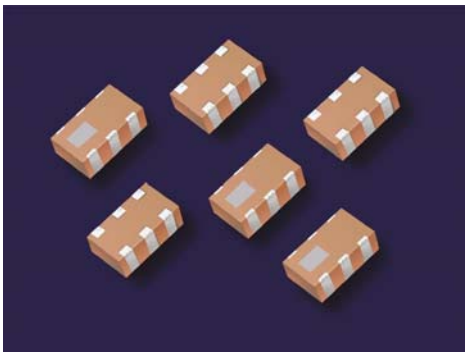
ACX
Advanced Ceramic X

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, etc.



Specifications

Part Number	Frequency Range (MHz)	Unbalanced Impedance (ohm)	Balanced Impedance (ohm)	Insertion Loss (dB)	VSWR @BW	Phase Difference (degree)	Amplitude Difference (dB)
BL2012-05B0896_	851 ~ 941	50	50	1.0 max.	2.0 max.	180 ± 10	1 max.

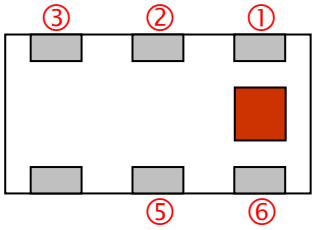
Q'ty/Reel (pcs) : 4000
Operating Temperature Range : -40 ~ +85 °C
Storage Temperature Range : -40 ~ +85 °C
Storage Period : 12 months max.*
*12 months in vacuum sealed bag and 1 week after opened. Please keep unused parts in vacuum sealed bags.
Solder Paste : SAC 305 type is recommended.
Power Capacity : 2W max.

Part Number

BL	2012	-	05	B	0896	□	/LF
①	②		③	④	⑤	⑥	⑦

① Type	BL : Balun	② Dimensions (L × W)	2.0 × 1.25 mm
③ Balanced Impedance	05 : 50 ohm	④ Specification Code	B
⑤ Central Frequency	0896 : 896MHz	⑥ Packaging	T: Tape & Reel B: Bulk
⑦ Soldering	=lead-containing /LF=lead-free		

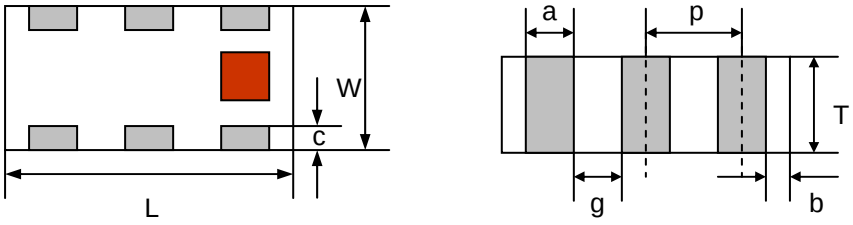
Terminal Configuration



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

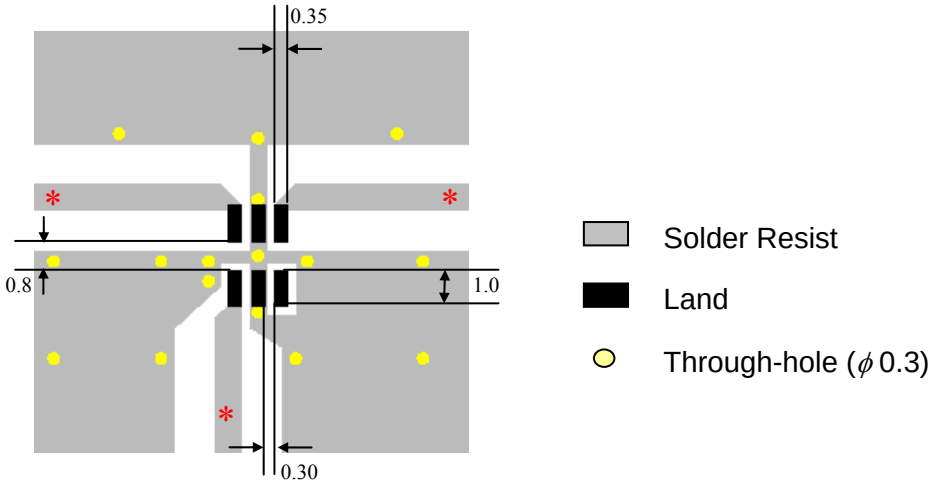
Dimensions and Recommended PC Board Pattern

Unit : mm

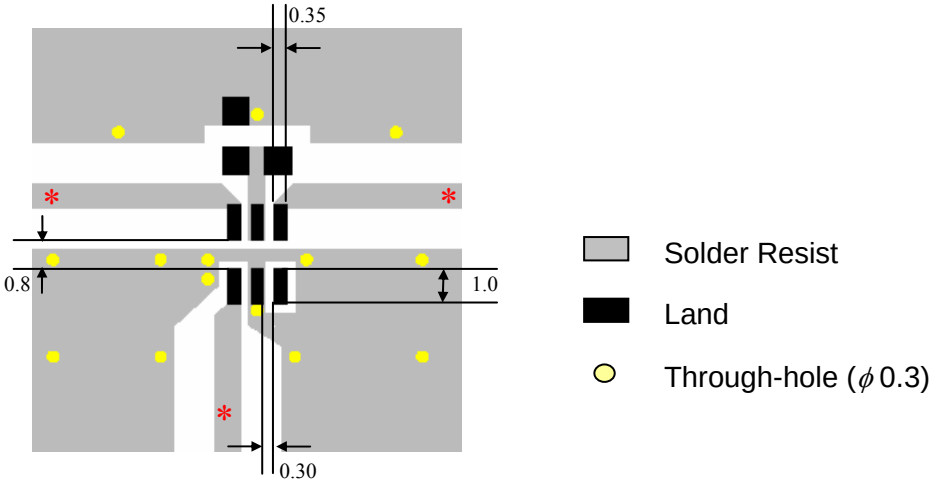


Mark	L	W	T	a	b	c	g	p
Dimensions	2.0 ± 0.1	1.25 ± 0.1	0.70 ± 0.1	0.3 ± 0.1	0.2 ± 0.1	0.3+0.1 /-0.2	0.35 ± 0.1	0.65 ± 0.05

Without DC feed



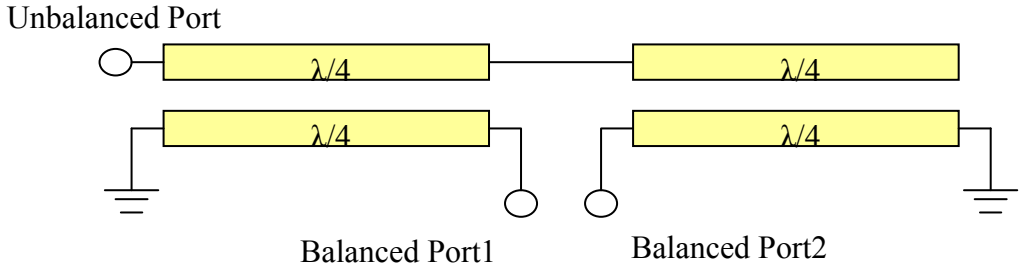
With DC feed



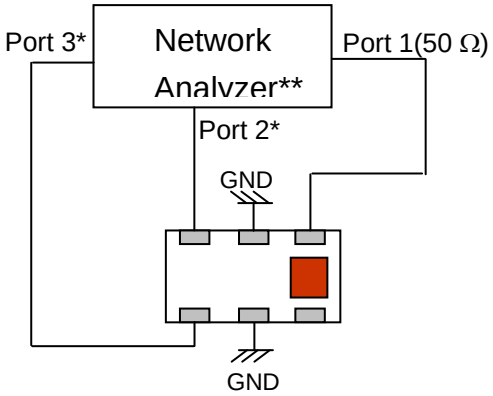
* Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

** By-pass capacitor should be connected when feeding DC power.

Equivalent Circuit



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))

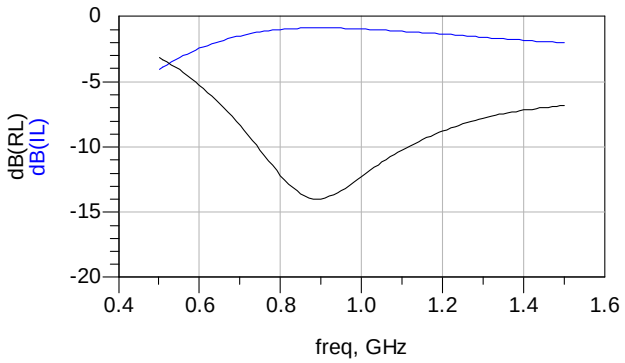
Phase_balance = Phase(S(2,1)/S(3,1))

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

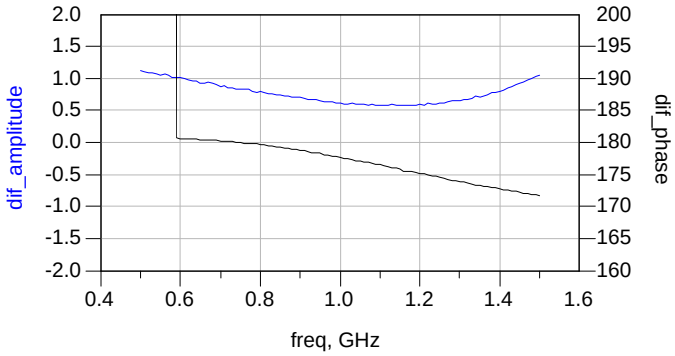
**E5071B from Agilent

Typical Electrical Characteristics (T=25°C)

Insertion and Return Loss



Amplitude and Phase Balance

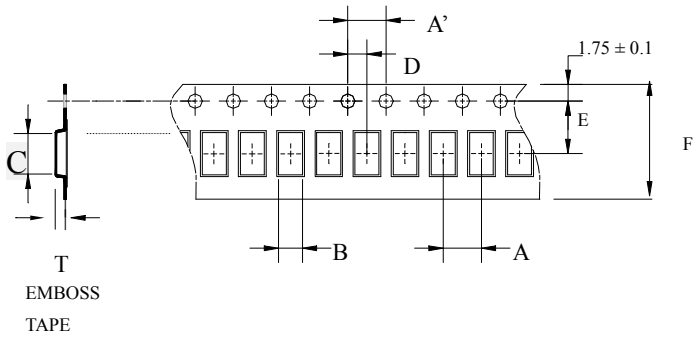


Notes

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

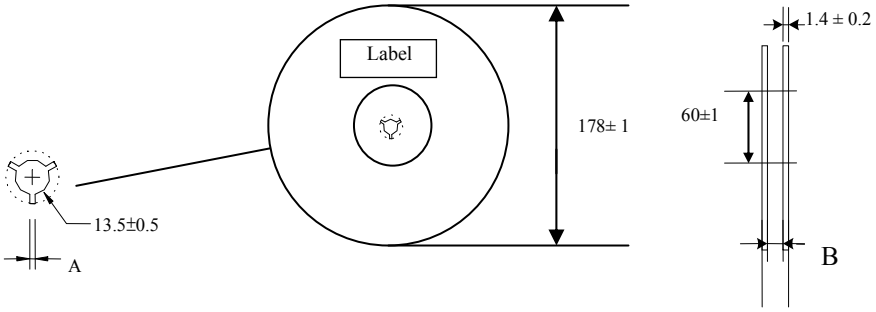
Taping Specifications

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

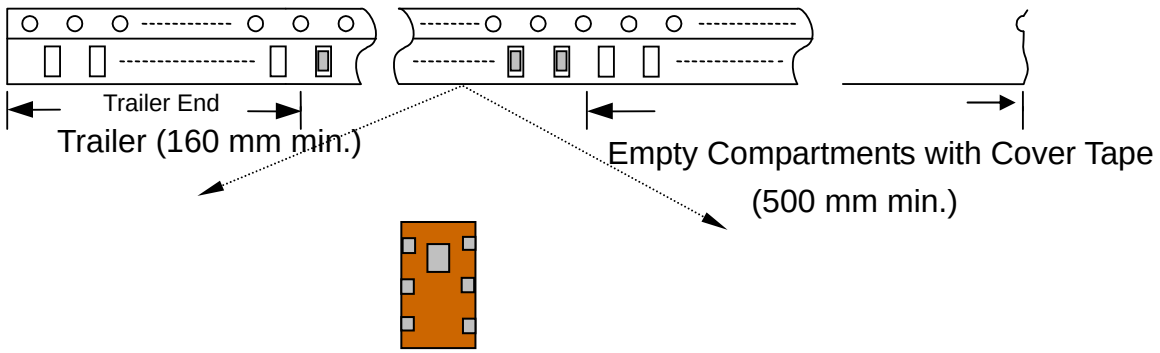
❖Reel Dimensions (Unit: mm)



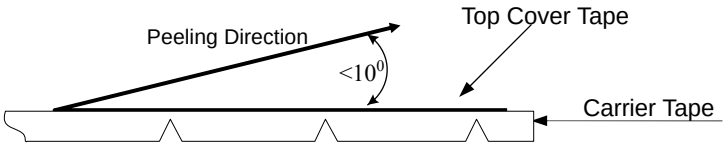
Label: Customer's Name,
ACX P/N, Q'ty, Date,
ACX Corp.

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 .

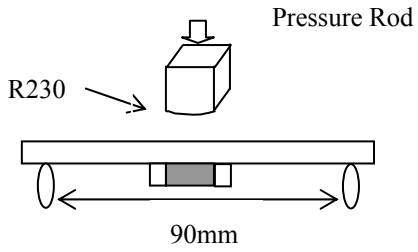
❖**Storage Conditions**

(1) Temperature: +5 ~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.

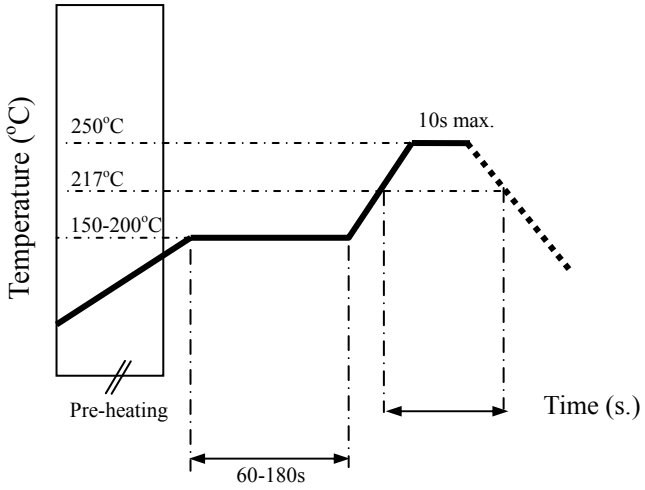
Mechanical & Environmental Characteristics

Item	Requirements	Procedure
Solderability	1. No apparent damage 2. More than 75% 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. 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 2. Fulfill the electrical specification	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± 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.