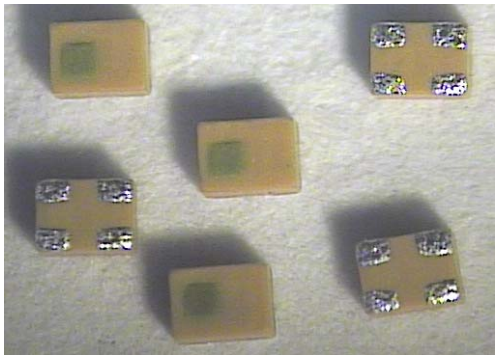
ACX
Advanced Ceramic X

BL 0605 Series

Multilayer Chip Baluns



Features

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

❖RoHS compliant

Applications

❖ 1.805 ~ 1.990 GHz wireless communication systems.

Specifications

Part Number	Frequency Range (MHz)	Unbalanced Impedance (ohm)	Balance Impedance (ohm)	Insertion Loss (dB)	VSWR @BW	Phase Difference (degree)	Amplitude Difference (dB)
BL0605-10L1900NA_	1805 ~ 1990	50	100	0.6 max.	2.0 max.	180 ± 10	1.8 max.

Q'ty/Reel (pcs) : 10,000
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.

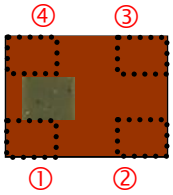
Part Number

BL	0605	-	10	L	1900	NA	□	/LF
①	②		③	④	⑤	⑥	⑦	⑧

① Type	BL : Balun	② Dimensions (L × W)	0.6 × 0.5 mm
③ Balanced Impedance	10 : 100 ohm	④ Material Code	L
⑤ Central Frequency	1900 : 1900MHz	⑥ Specification Code I	NA
⑦ Packaging	T: Tape & Reel B: Bulk	⑧ Soldering	/LF=lead-free

Terminal Configuration

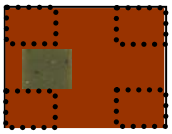
< Top View>



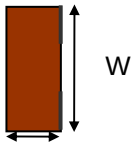
No.	Terminal Name	No.	Terminal Name
①	GND	③	Balanced Port
②	Unbalanced Port	④	Balanced Port

Dimensions and Recommended PC Board Pattern

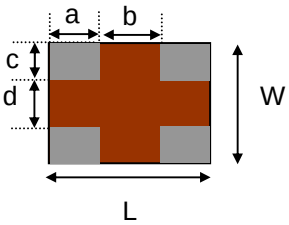
Unit : mm



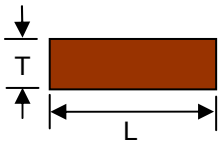
< Top View>



<Side View>

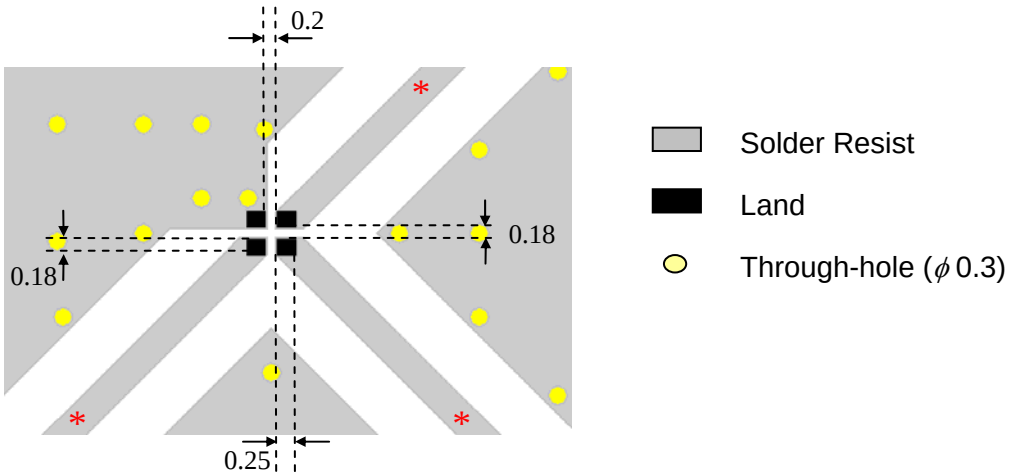


<Bottom View>



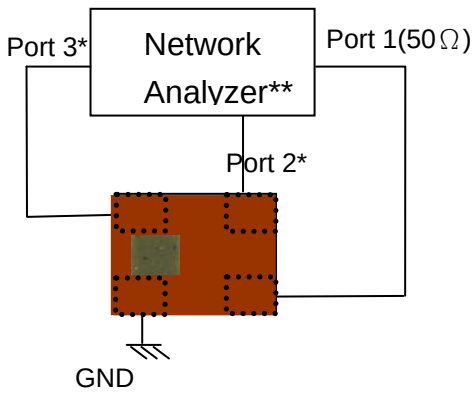
<Side View>

Mark	L	W	T	a	b	c	d
Dimensions	0.65 ± 0.05	0.5 ± 0.05	0.45 max	0.225 +0.1/-0.05	0.2 +0.1/-0.05	0.15 +0.1/-0.05	0.2 +0.1/-0.05



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

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))

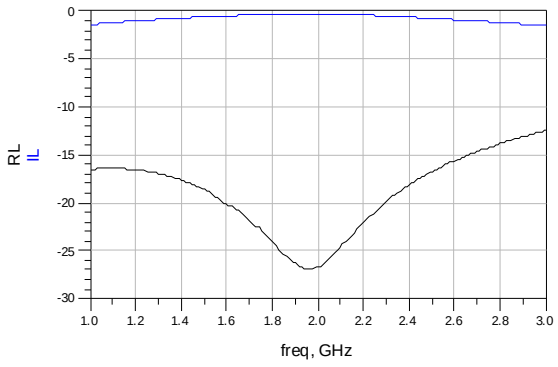
Phase_balance = Phase(S(2,1)/S(3,1))

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

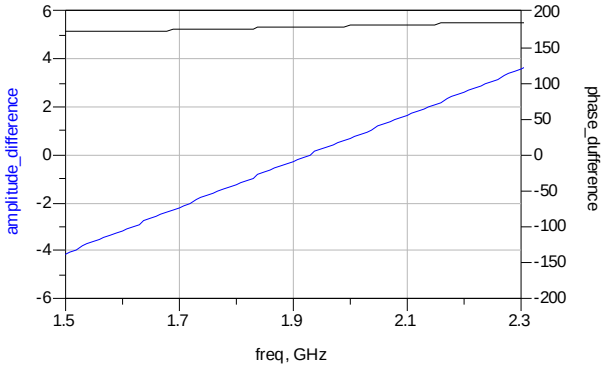
**E5071B from Agilent

Typical Electrical Characteristics (T=25°C)

Insertion and Return Loss



Amplitude and Phase Balance



Notes

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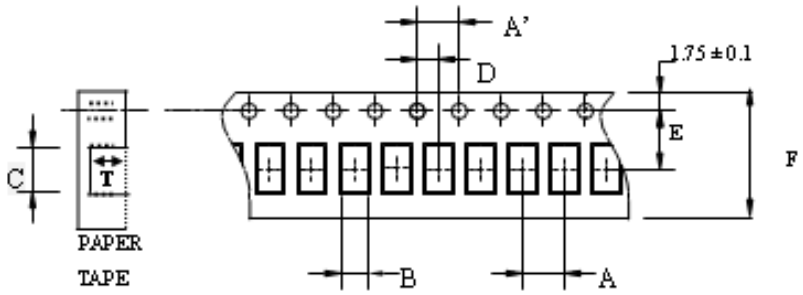
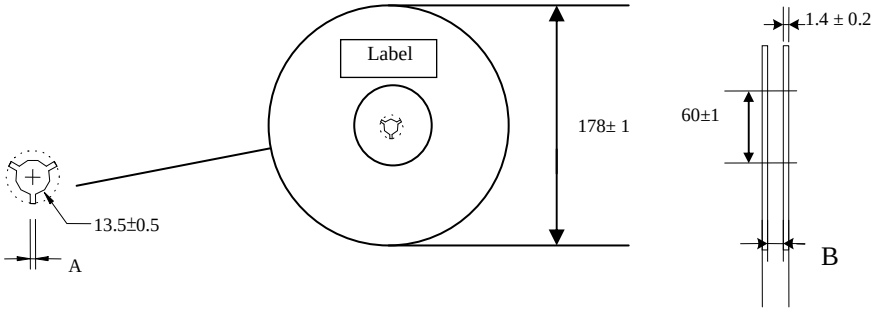
Taping Specifications

❖Tape Dimensions (Unit: mm) & Quantity



Type	A	A'	B	C	D	E	F	T	Quantity/reel	Tape material
0605	2.0± 0.05	4.0± 0.1	0.58± 0.03	0.78± 0.03	2.0± 0.05	3.5± 0.05	8.0± 0.2	0.45± 0.03	10,000pcs	Paper

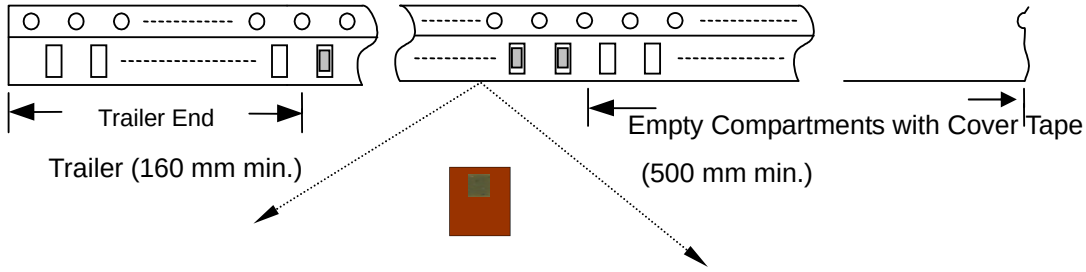
❖Reel Dimensions (Unit: mm)



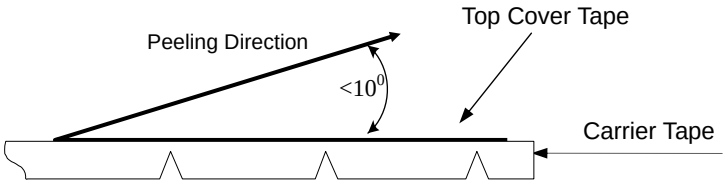
Label: Customer's Name,
ACX P/N, Q'ty, Date,
ACX Corp.

Type	A	B
0605	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.

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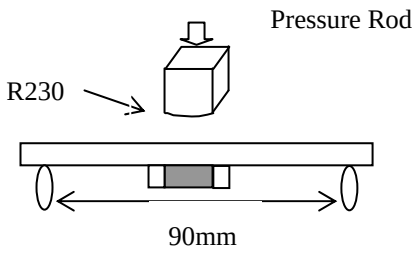
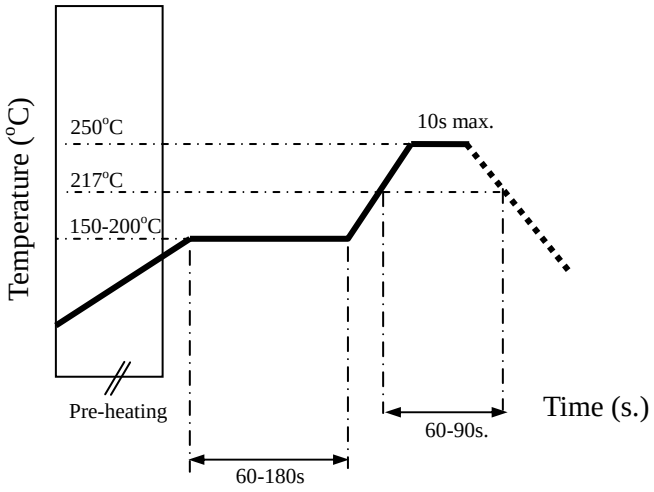
Mechanical & Environmental Characteristics

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. 2N 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 :



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