

# Xinger®



## Ultra Low Profile 0805 Balun 50Ω to 50Ω Balanced

### Description

The BD2130J5050AHF is a low profile sub-miniature balanced to unbalanced transformer designed for differential inputs and output locations on next generation wireless chipsets in an easy to use surface mount package covering 802.11b+g+n. The BD2130J5050AHF is ideal for high volume manufacturing and is higher performance than traditional ceramic and lumped element baluns. The BD2130J5050AHF has an unbalanced port impedance of 50Ω and a 50Ω balanced port impedance. This transformation enables single ended signals to be applied to differential ports on modern semiconductors. The output ports have equal amplitude (-3dB) with 180 degree phase differential. The BD2130J5050AHF is available on tape and reel for pick and place high volume manufacturing.

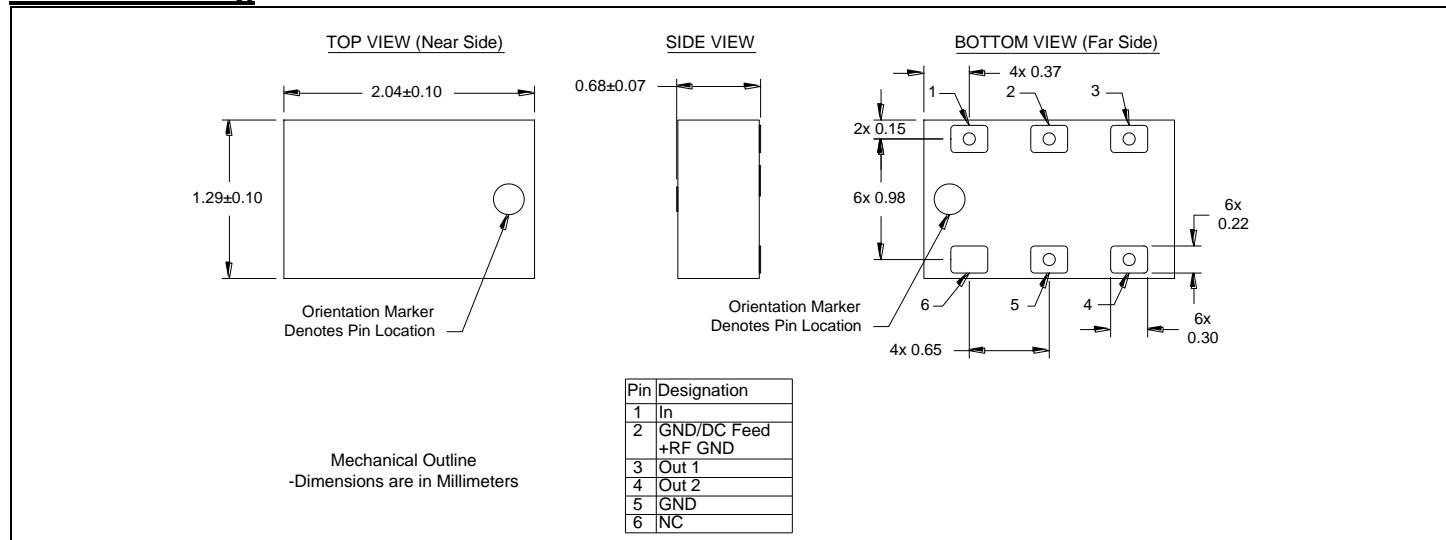
### Detailed Electrical Specifications\*:

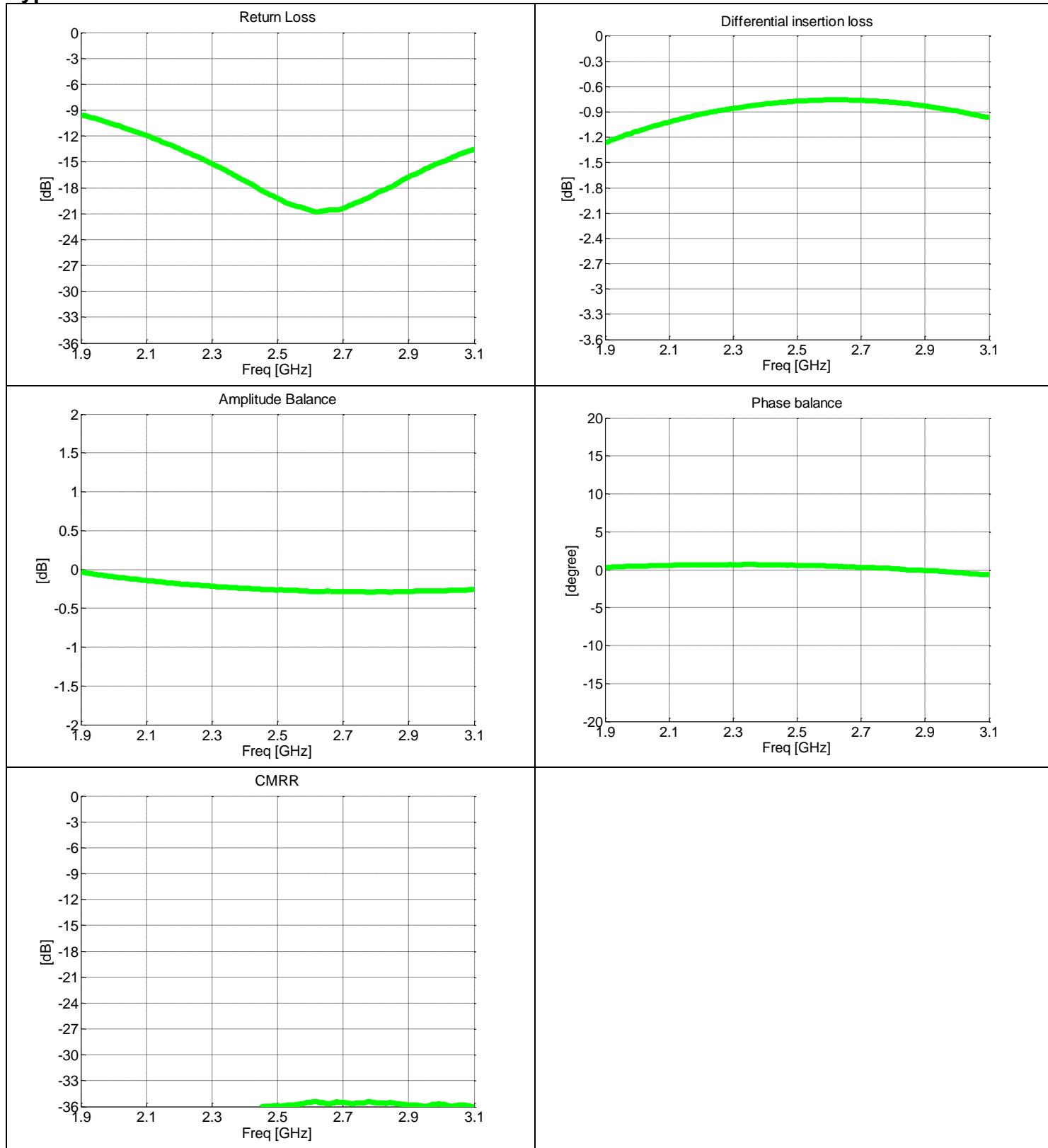
Specifications subject to change without notice.

Features:	Parameter	ROOM (25°C)						
		Min.	Typ.	Max	Min.	Typ.	Max	Unit
• 2.1 – 3.0 GHz	Frequency	2.4		2.5	2.1		3.0	GHz
• 0.7mm Height Profile	Unbalanced Port Imp.		50			50		Ω
• 50 Ohm to 2 x 25 Ohm	Balanced Port Imp.		50			50		Ω
• 802.11 b & g +n Compliant	Return Loss	12	17		10	12		dB
• Low Insertion Loss	Insertion Loss*		0.75	0.9		1.0	1.2	dB
• DCS, PCS & UMTS	Amplitude Balance		0.45	0.65		0.7	1.0	dB
• Input to Output DC Isolation	Phase Balance		2	5		2	5	Degrees
• Surface Mountable	CMRR		35			35		dB
• Tape & Reel	Power Handling @85C			2			2	Watts
• Non-conductive Surface	Power Handling @105C			1.2			1.2	Watts
• RoHS Compliant	Operating Temperature	-55		+105	-55		+105	°C

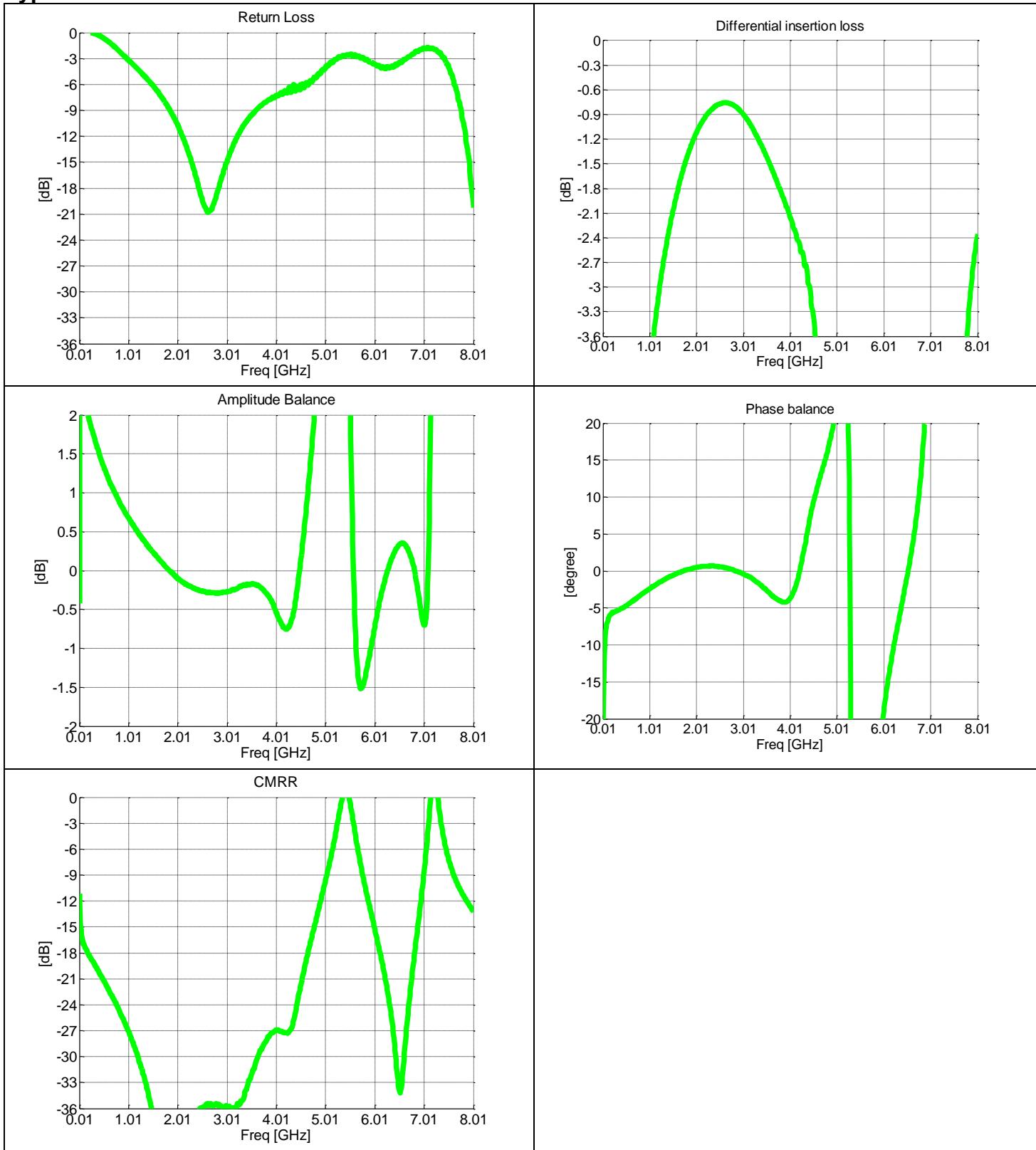
\* Insertion Loss stated at room temperature (Insertion Loss is approximately 0.1 dB higher at +85 °C)

### Outline Drawing



**Typical Performance: 1.9 GHz. to 3.1 GHz**

### Typical Broadband Performance: 0.01 GHz to 8.01 GHz



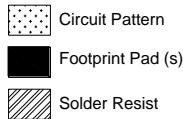
## **Mounting Configuration:**

In order for Xinger surface mount components to work optimally, the proper impedance transmission lines must be used to connect to the RF ports. If this condition is not satisfied, insertion loss, Isolation and VSWR may not meet published specifications.

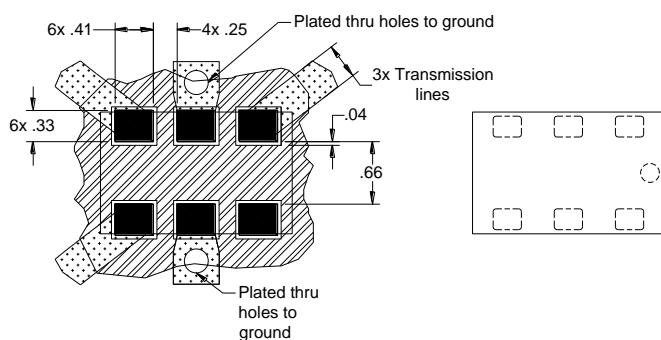
All of the Xinger components are constructed from organic PTFE based composites which possess excellent electrical and mechanical stability. Xinger components are compliant to a variety of ROHS and Green standards and ready for Pb-free soldering processes. Pads are Gold plated with a Nickel barrier.

An example of the PCB footprint used in the testing of these parts is shown below. An example of a DC-biased footprint is also shown below. In specific designs, the transmission line widths need to be adjusted to the unique dielectric coefficients and thicknesses as well as varying pick and place equipment tolerances.

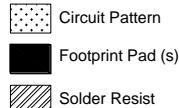
### **No Bias Footprint**



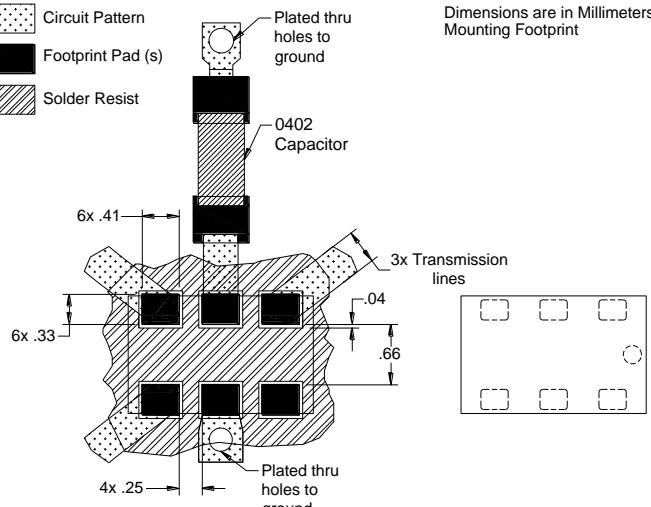
Dimensions are in Millimeters  
Mounting Footprint



### **DC Bias Footprint**

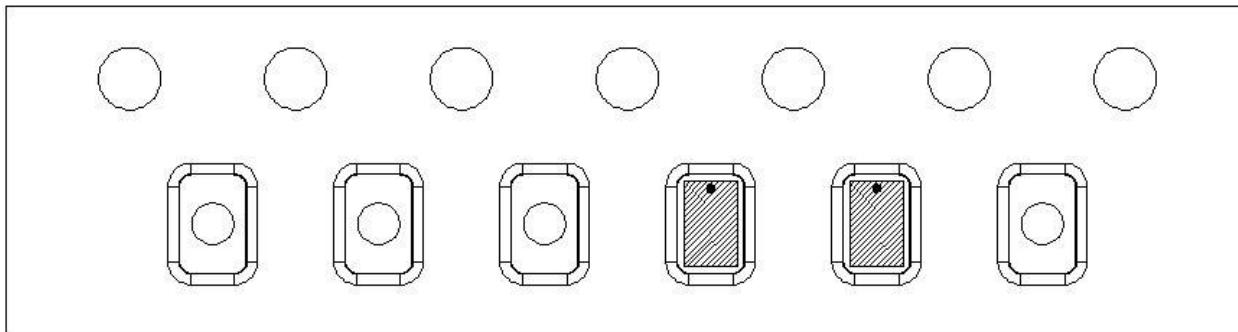


Dimensions are in Millimeters  
Mounting Footprint



### Packaging and Ordering Information

Parts are available in reel and are packaged per EIA 481-D. Parts are oriented in tape and reel as shown below. Minimum order quantities are 4000 per reel.



Direction of  
Part Feed  
(Unloading)

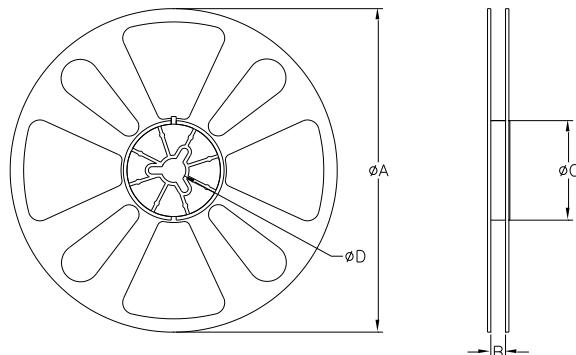


TABLE 1	
QUANTITY/REEL	REEL DIMENSIONS mm
4000	ØA
	177.80
	B
	8.00
	ØC
	50.80
	ØD
	13.00