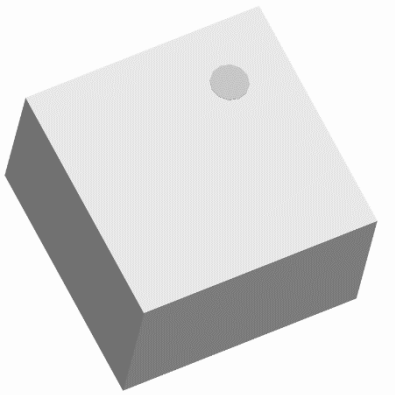
Xinger®

Ultra Low Profile 0404 Balun
50Ω to 150Ω Balanced



Description:

The BD4859N50150AHF is a low cost, low profile sub-miniature unbalanced to balanced transformer designed for differential inputs and output locations on modern chipsets in an easy to use surface mount package covering 802.11a Uni-Band II & III and the Japanese ISM band (4.9 GHz). The BD4859N50150AHF is ideal for high volume manufacturing and delivers higher performance than traditional ceramic baluns. The BD4859N50150AHF has an unbalanced port impedance of 50Ω and a150Ω balanced port impedance. This transformation enables single ended signals to be applied to differential ports on modern integrated chipsets. The output ports have equal amplitude (-3dB) with 180 degree phase differential. The BD4859N50150AHF is available on tape and reel for pick and place high volume manufacturing.

Detailed Electrical Specifications:

Specifications subject to change without notice.

Features:

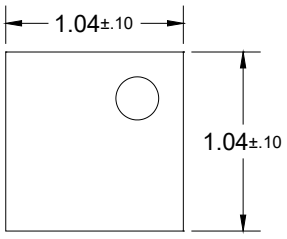
- **4800 – 5900 MHz**
- **0.56 mm Height Profile**
- **50 Ohm to 2 x 75 Ohm**
- **Low Insertion Loss**
- **802.11a Uni-Band II & III**
- **Home Cordless Compliant**
- **Surface Mountable**
- **Tape & Reel**
- **Non-conductive Surface**
- **RoHS Compliant**
- **Halogen Free**

Parameter	ROOM (25°C) Min.	Typ.	Max	Unit
Frequency	4800		5900	MHz
Unbalanced Port Impedance		50		Ω
Balanced Port Impedance		150		Ω
Return Loss	12	17		dB
Insertion Loss*		0.4	0.6	dB
Amplitude Balance		0.8	1.4	dB
Phase Balance		4	10	Degrees
CMRR		26		dB
Power Handling			1.0	Watts
Operating Temperature	-55		+85	ºC

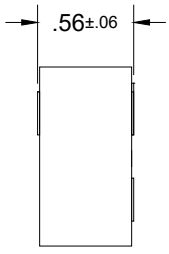
* Insertion Loss stated at room temperature (Insertion Loss is approximately 0.1 dB higher at +85 ºC)

Outline Drawing:

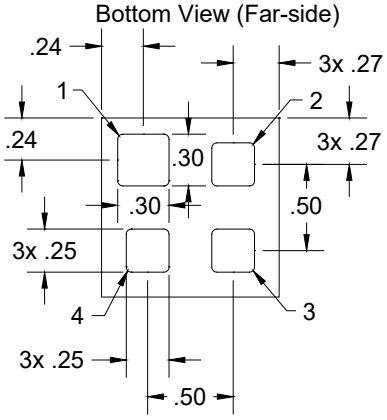
Top View (Near-side)



Side View



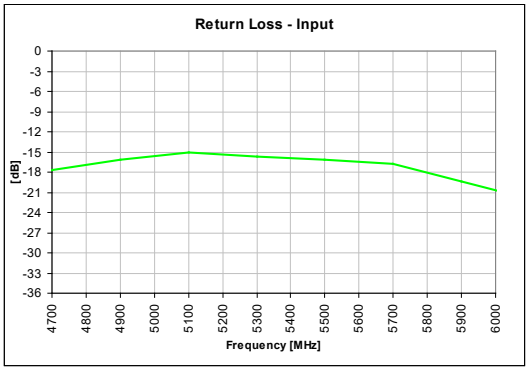
Bottom View (Far-side)

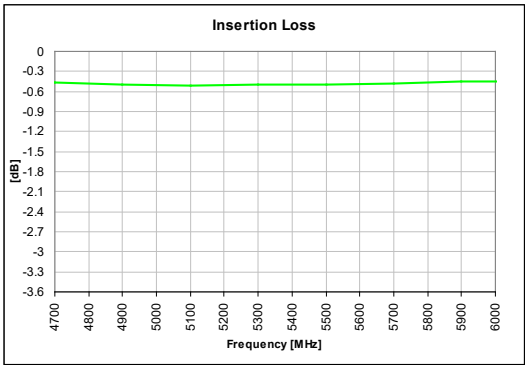


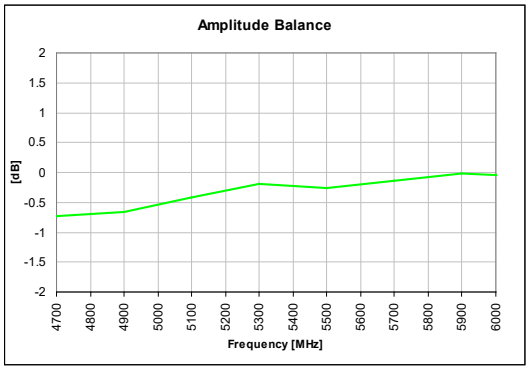
Dimensions are in Millimeters
Mechanical Outline
Tolerances are Non-Cumulative

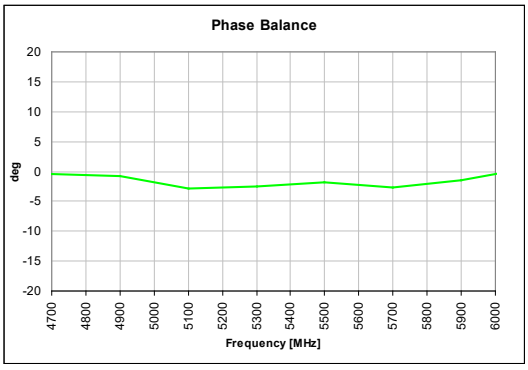
Pin	Designation
1	GND / DC Feed + RF GND
2	Unbalanced Port
3	Balanced Port
4	Balanced Port

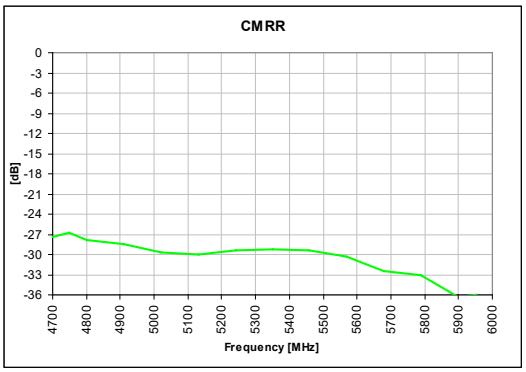
Typical Performance:4700 MHz. to 6000 MHz.



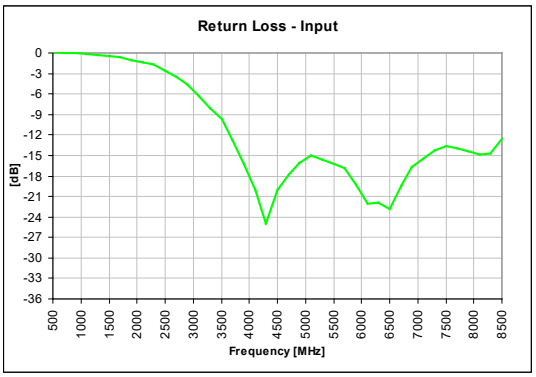


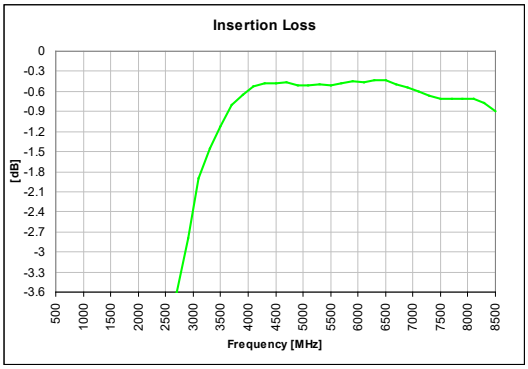


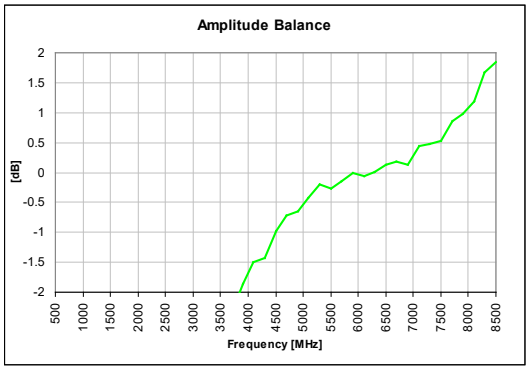


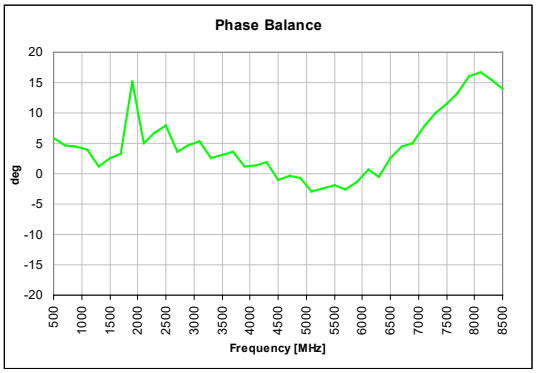


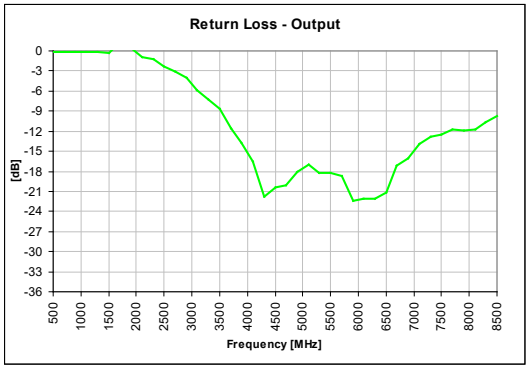
Wide Band Performance: 500 MHz. to 8500 MHz.











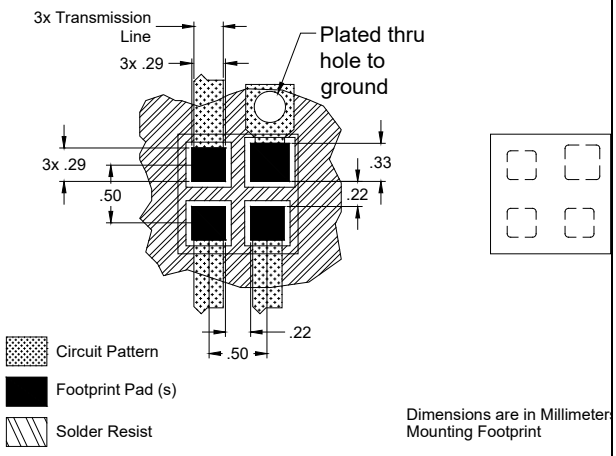
Mounting Configuration:

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 ceramic filled PTFE composites which possess excellent electrical and mechanical stability.

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

With No DC Bias



With DC Bias