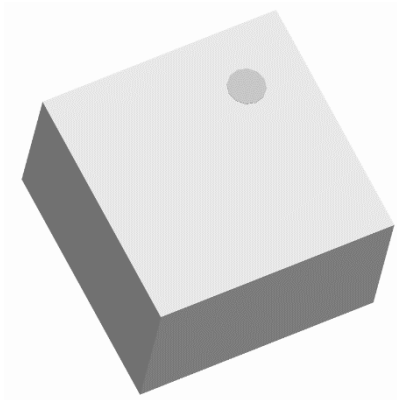
Xinger®

Ultra Low Profile 0404 Balun
50Ω to 100Ω Balanced



Description:

The BD170240N50100AHF 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 for applications including point-to-point radio and wideband GaN. The BD170240N50100AHF is ideal for high volume manufacturing and delivers higher performance than traditional ceramic baluns. The BD170240N50100AHF has an unbalanced port impedance of 50Ω and a 100Ω 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 BD170240N50100AHF is available on tape and reel for pick and place high volume manufacturing.

Features:

- **17.7 – 23.6 GHz**
- **Thin Height Profile**
- **Ultra Low Insertion Loss**
- **Surface Mountable**
- **Tape & Reel**
- **RoHS Compliant**
- **Halogen Free**
- **-55°C to 140°C**

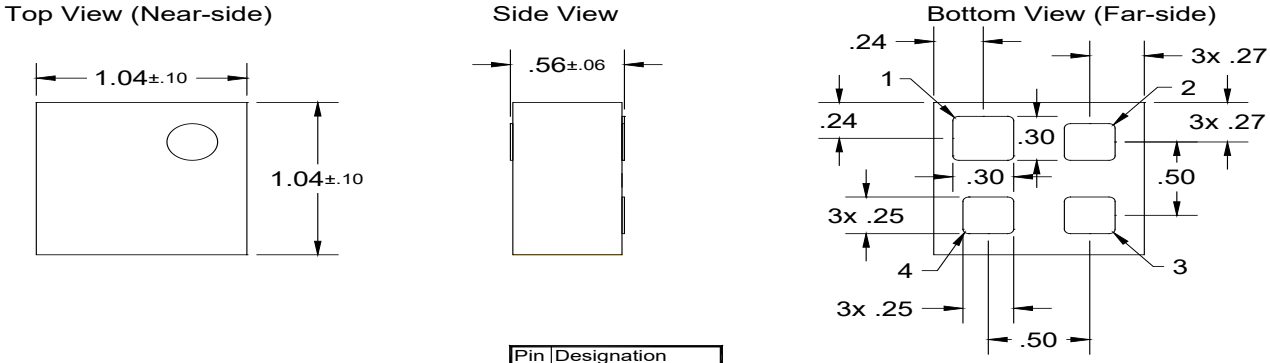
Detailed Electrical Specifications:

Specifications subject to change without notice.

Parameter	ROOM (25°C) Min.	Typ.	Max	Min.	Typ.	Max	Unit
Frequency	17.0		22.0	22.0		23.6	GHz
Unbalanced Port Impedance		50			50		Ω
Balanced Port Impedance		100			100		Ω
Return Loss	11	16		9	12		dB
Insertion Loss*		1.0	1.3		1.3	1.7	dB
Amplitude Balance		1.0	1.6		1.0	2	dB
Phase Balance		11	17		21	27	Degrees
CMRR		20			14		dB
Power Handling @85ºC			1			1	Watts
Operating Temperature	-55		+140	-55		+140	ºC

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

Outline Drawing:

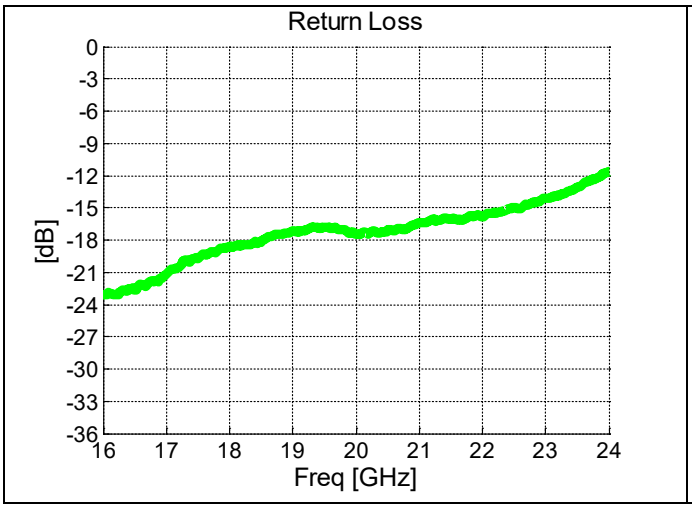


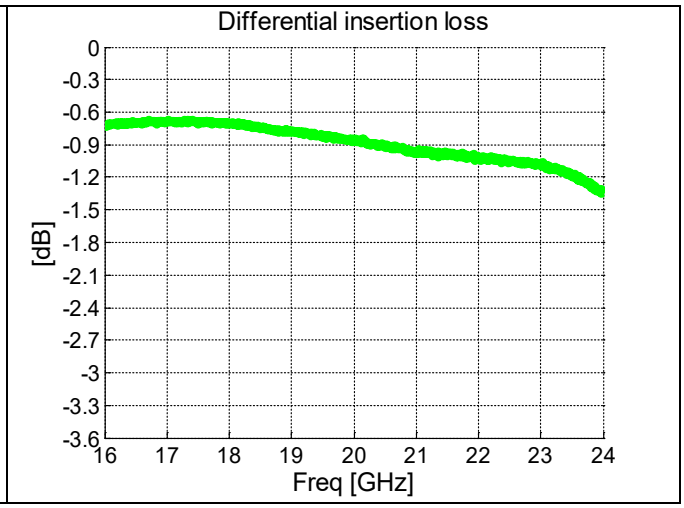
Pin	Designation
1	GND / DC Feed + RF GND
2	Unbalanced Port
3	Balanced Port
4	Balanced Port

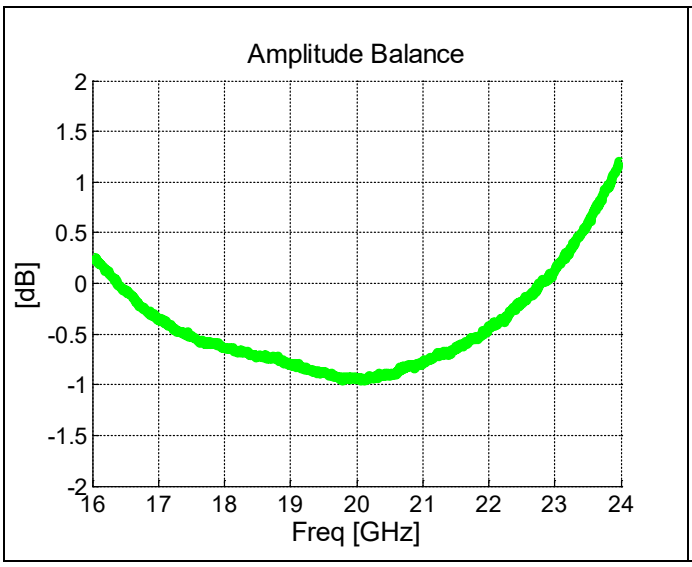
Dimensions are in Millimeters
Mechanical Outline

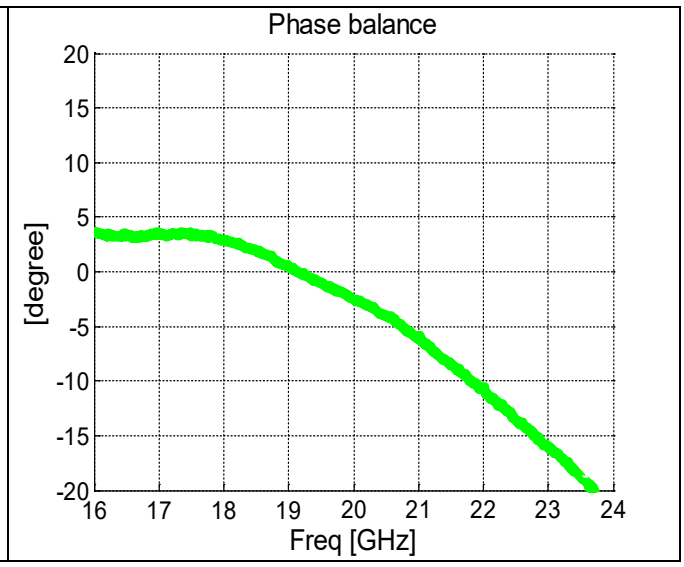
Tolerances are Non-Cumulative

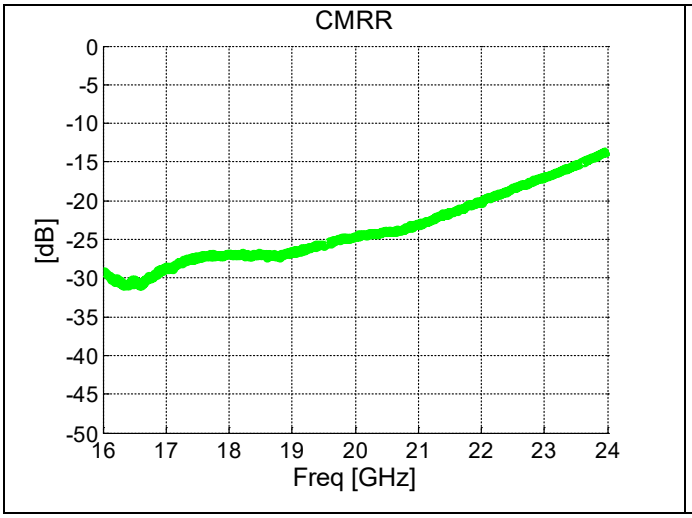
Wide Band Performance: 16 GHz. to 24 GHz.

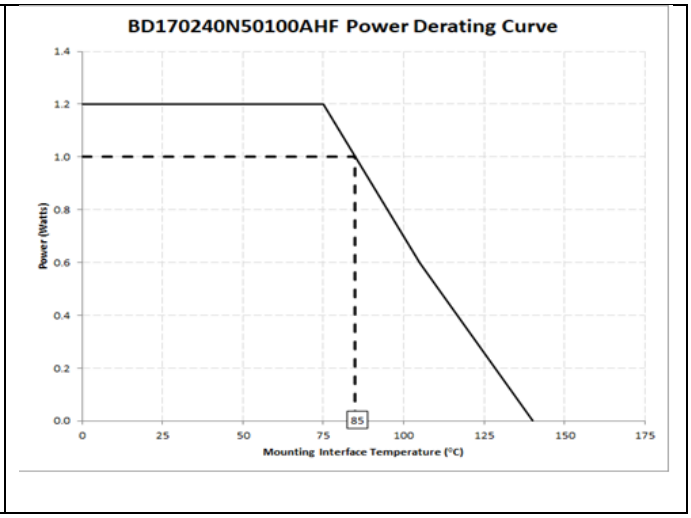












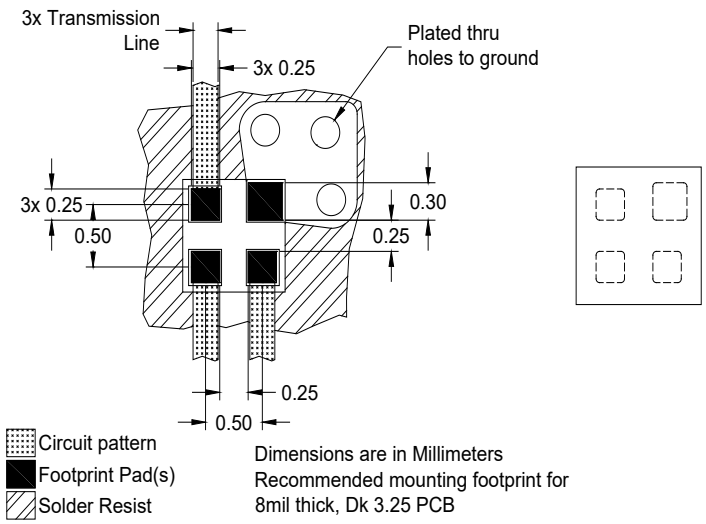
Mounting Configuration:

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.

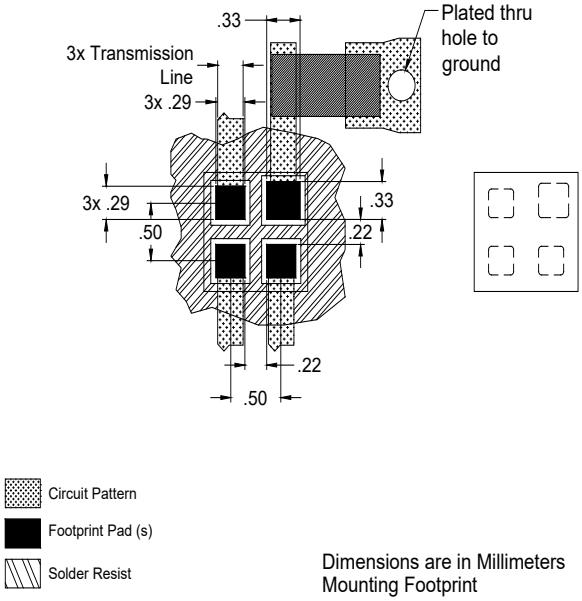
All of the Xinger components are constructed from organic PTFE based composites which possess excellent electrical and mechanical stability. Xinger components are compliant to a variety of ROHS and Green standards and ready for Pb-free soldering processes. Pads are Gold plated with a Nickel barrier.

An example of the PCB footprint used in the testing of these parts is shown below. 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

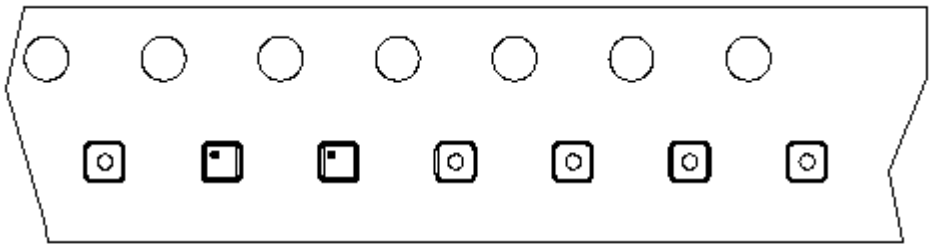


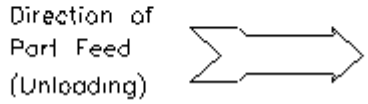
With DC Bias



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.





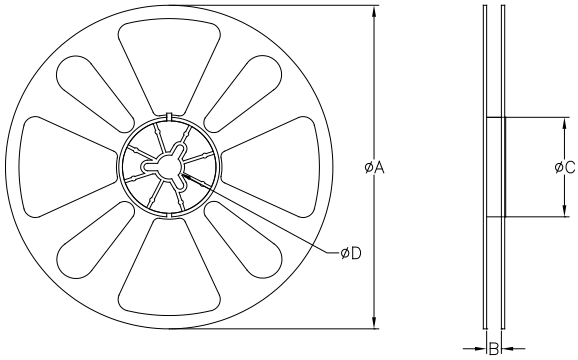


TABLE 1		
QUANTITY/REEL	REEL DIMENSIONS mm	
4000	øA	177.80
	B	8.00
	øC	50.80
	øD	13.00

Contact us:
rf&s_support@ttm.com