

# Xinger®



## Ultra Low Profile 0404 Balun 50Ω to 100Ω Balanced

### Description

The BD2425N50100A00 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. The BD2425N50100A00 is ideal for high volume manufacturing and delivers higher performance than traditional ceramic baluns. The BD2425N50100A00 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 BD2425N50100A00 is available on tape and reel for pick and place high volume manufacturing.

**Detailed Electrical Specifications:** Specifications subject to change without notice.

#### Features:

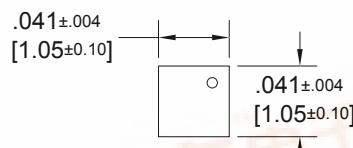
- 2400 – 2500 MHz
- 0.57 mm Height Profile
- 50 Ohm to 2 x 50 Ohm
- Low Insertion Loss
- 802.11 b+g
- MIMO b+g
- Bluetooth
- Zigbee
- Surface Mountable
- Tape & Reel
- Non-conductive
- RoHS Compliant

Parameter	ROOM (25°C)			Unit
	Min.	Typ.	Max	
Frequency	2400		2500	MHz
Unbalanced Port Impedance		50		Ω
Balanced Port Impedance		100		Ω
Return Loss	18	25		dB
Insertion Loss*		0.6	0.7	dB
Amplitude Balance		0.2	0.6	dB
Phase Balance		1	3	Degrees
CMRR		37		dB
Power Handling			1	Watts
Operating Temperature	-55		+85	°C

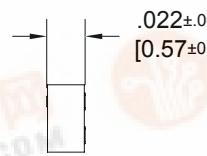
\* Insertion Loss stated at room temperature (Insertion Loss is approximately 0.1 dB higher at +85 °C)

### Outline Drawing

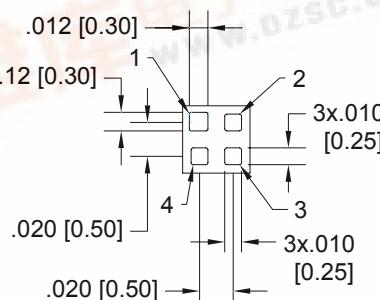
Top View (Near-side)



Side View



Bottom View (Far-side)

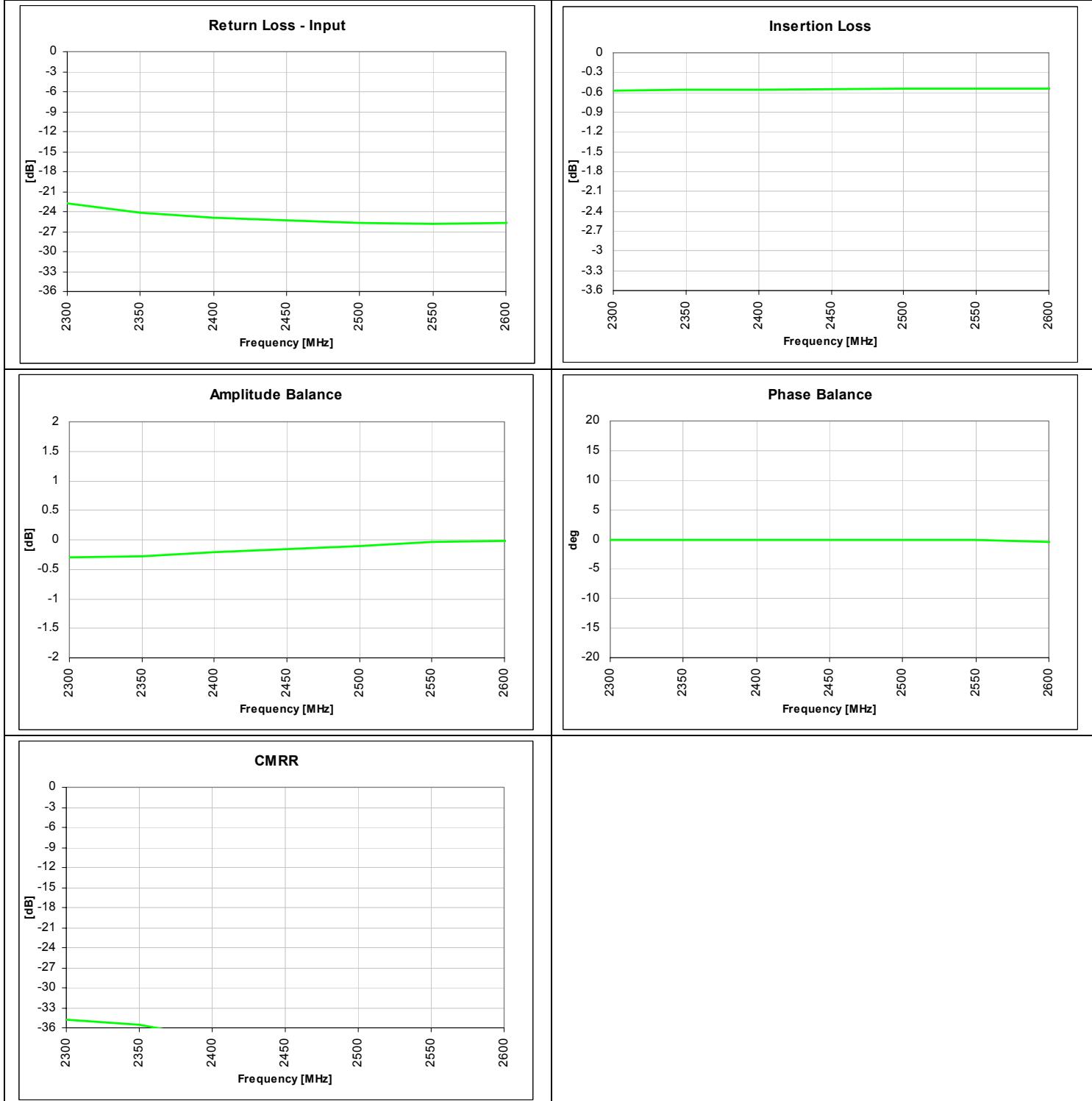


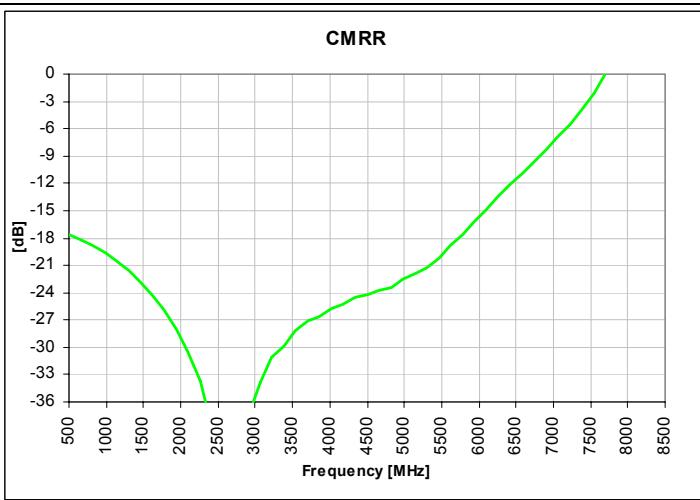
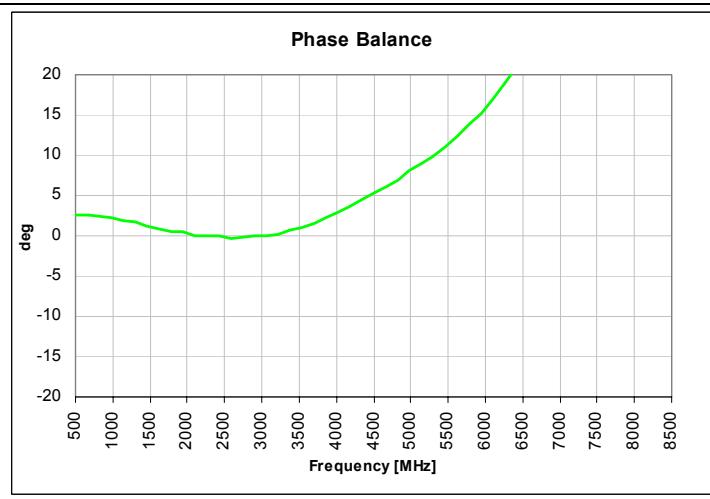
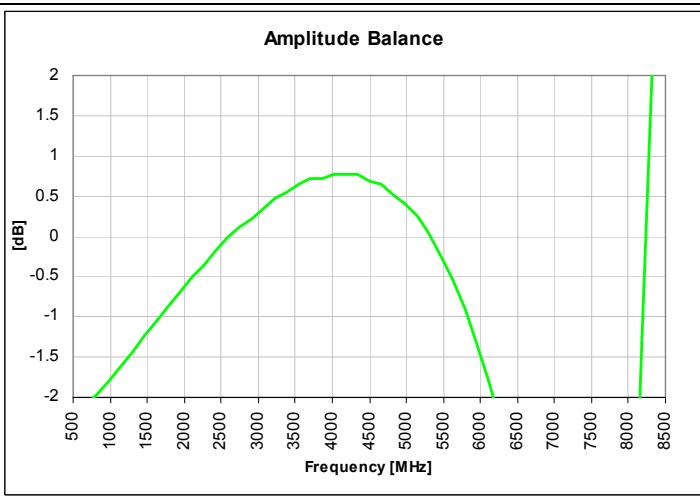
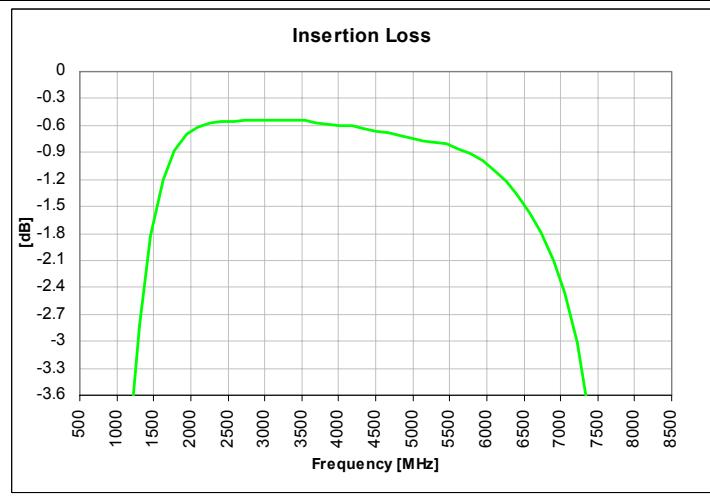
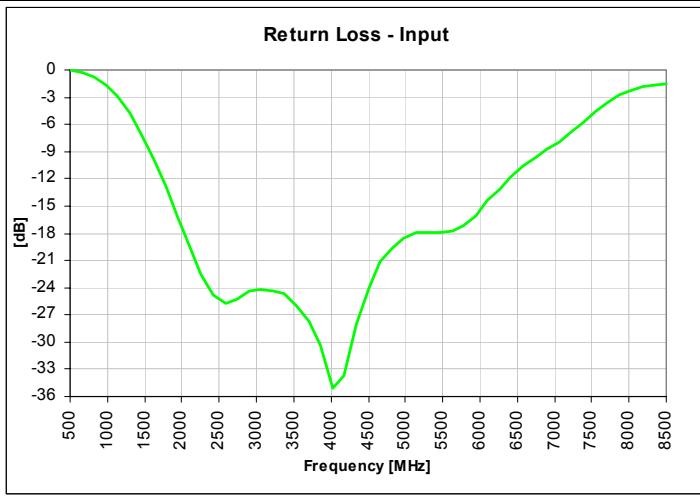
Pin	Designation
1	GND / DC Feed + RF GND
2	Unbalanced Port
3	Balanced Port
4	Balanced Port

Dimensions are in Inches [Millimeters]  
Mechanical Outline

Tolerances are Non-Cumulative



**Typical Performance: 2300 MHz. to 2600 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 having X and Y thermal coefficient of expansion (CTE) of 17 ppm/ $^{\circ}$ C.

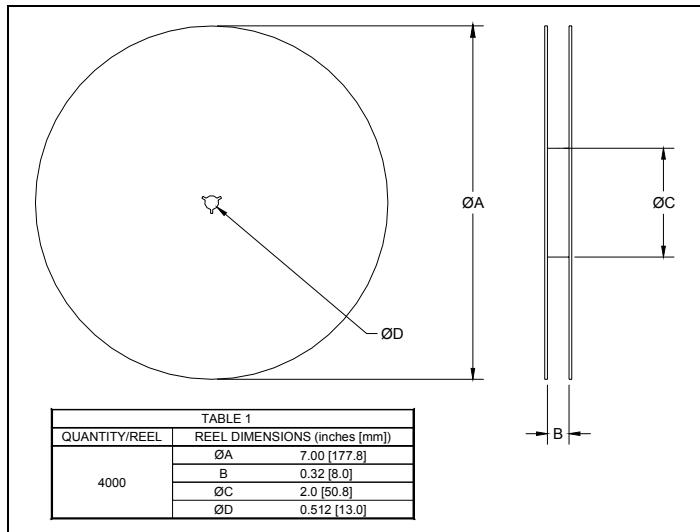
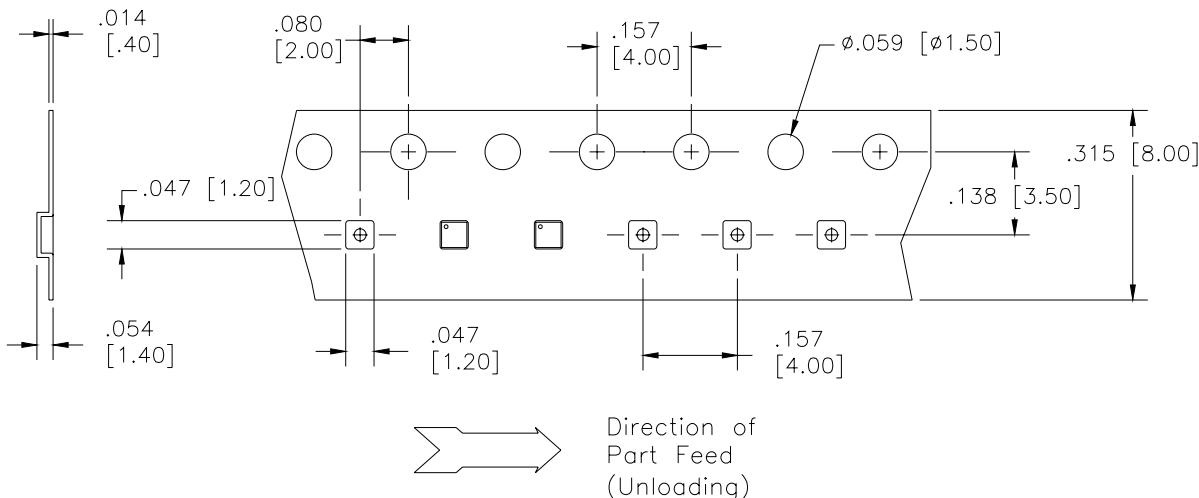
An example of the PCB footprint used in the testing of these parts is shown below. An example of a DC-biased footprint is also shown below. In specific designs, the transmission line widths need to be adjusted to the unique dielectric coefficients and thicknesses as well as varying pick and place equipment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

With No DC Bias	With DC Bias
<p>Dimensions are in Inches [Millimeters] Mounting Footprint</p>	<p>Dimensions are in Inches [Millimeters] Mounting Footprint</p>



### Packaging and Ordering Information

Parts are available in reel and are packaged per EIA 481-2. Parts are oriented in tape and reel as shown below. Minimum order quantities are 4000 per reel. See Model Numbers below for further ordering information.



# BD 2425 J 50 100 A 00

Function	Frequency	Package Dimensions	Unbalanced Impedance	Balanced Impedance + Coupling	Plating Finish	Codes
B = Balun	0110 = 100 – 1000 MHz	A = 150 x 150 mils (4mm x 4mm)	50 = 50 Ohm	25 = 25 Ω Balanced	A = Gold	
BD = Balun + DC	0810 = 800 – 1000 MHz	C = 120 x 120 mils (3mm x 3mm)	75 = 75 Ohm	30 = 30 Ω Balanced	P = Tin-Lead	
F = Filter	0922 = 950 – 2150 MHz	E = 100 x 80 mils (2.5mm x 2mm)		50 = 50 Ω Balanced		
FB = Filter / Balun	0826 = 800 – 6200 MHz	J = 80 x 50 mils (2mm x 1.25mm)		75 = 75 Ω Balanced		
C = 3dB Coupler	1222 = 1200 – 2200 MHz	L = 60 x 30 mils (1.5mm x 0.75mm)		100 = 100 Ω Balanced		
DC = Directional	1416 = 1400 – 1600 MHz	N = 40 x 40 mils (1mm x 1mm)		150 = 150 Ω Balanced		
J = RF Jumper	1722 = 1700 – 2200 MHz			200 = 200 Ω Balanced		
X = RF cross over	2326 = 2300 – 2600 MHz			300 = 300 Ω Balanced		
	2425 = 2400 – 2500 MHz			400 = 400 Ω Balanced		
	3150 = 3100 – 5000 MHz			03 = 3dB Hybrid		
	3436 = 3400 – 3600 MHz			10 = 10dB Directional		
	4859 = 4800 – 5900MHz			20 = 20dB Directional		
	5153 = 5100 – 5300 MHz					
	5159 = 5100 – 5900 MHz					
	5759 = 5700 – 5900 MHz					

