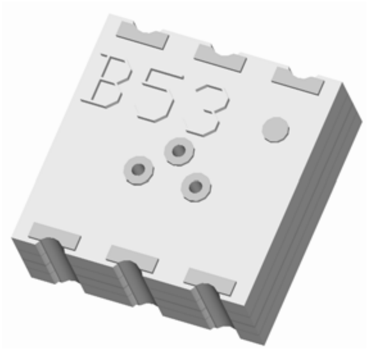
Model 0922B75-37A

Rev. A

Xinger Balun
75Ω to 75Ω Balanced



Description

The 0922B75-37A is a low cost, low profile sub-miniature unbalanced to balanced transformer designed for differential inputs and output locations on wireless chipsets in an easy to use surface mount package covering dual polarized commercial Satellite bands 950 MHz – 2150 MHz. The 0922B75-37A is ideal for high volume manufacturing and is higher performance than traditional wire wound baluns. The 0922B75-37A has an unbalanced port impedance of 75Ω and a 75Ω 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 0922B75-37A is available on tape and reel for pick and place high volume manufacturing.

Features:

- **950 – 2150 MHz**
- **180° Transformer**
- **75 Ohm to 2 x 37.5 Ohm**
- **Low Insertion Loss**
- **Multi-band Cellular Apps**
- **Sat LNB Chipset Compliant**
- **No DC Decoupling Capacitors Required**
- **Input to Output DC Isolation**
- **Surface Mountable**
- **Tape & Reel**

ELECTRICAL SPECIFICATIONS**

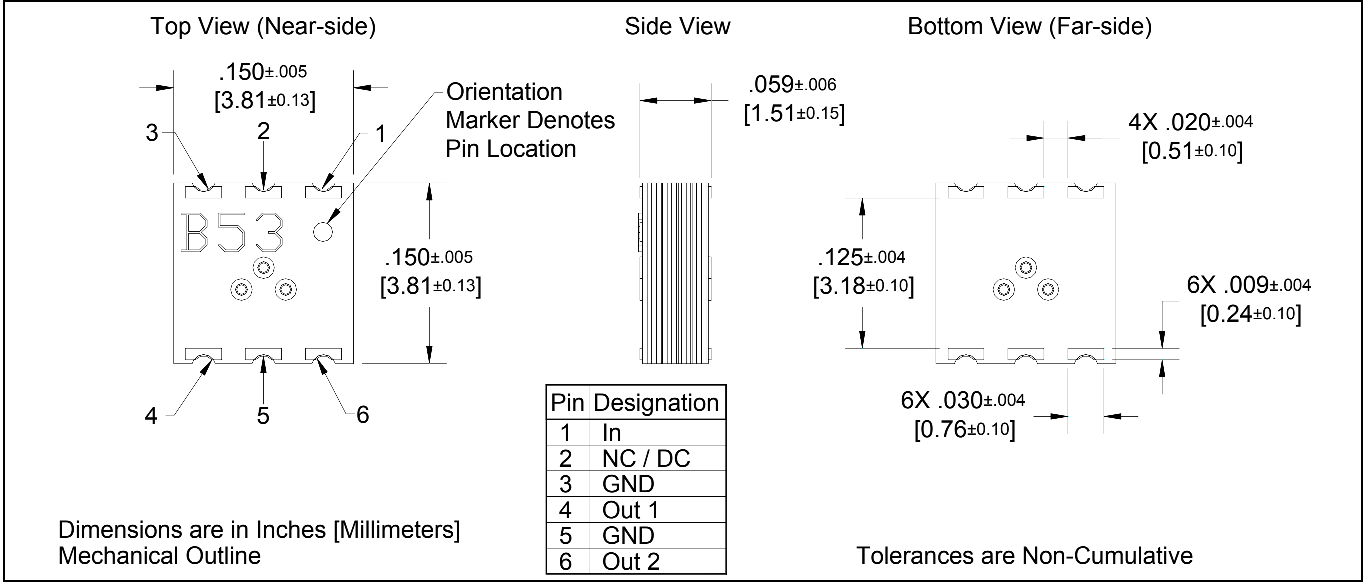
Frequency	Unbalanced Port Impedance	Balanced Port Impedance*	Return Loss	Insertion Loss
MHz	*Ohms*	*Ohms*	*dB min*	*dB max*
950 - 2150	75	75	12	0.8***
Amplitude Balance	**Phase Balance**	**Power Handling**	**ΘJC**	**Operating Temp.**
dB	*Degrees max*	*Watts*	*ºC / Watt*	*ºC*
0 ± 0.7	180 ± 10	4	TBD	-55 to +85

**Specification based on performance of unit properly installed on microstrip printed circuit boards with 75 Ω + 37.5Ω nominal impedance. Spec's subject to change without notice.

* 37.5Ω reference to ground

*** Insertion Loss stated at room temperature (0.9 dB Max at +85 ºC)

Outline Drawing



Pin	Designation
1	In
2	NC / DC
3	GND
4	Out 1
5	GND
6	Out 2

Dimensions are in Inches [Millimeters]
Mechanical Outline

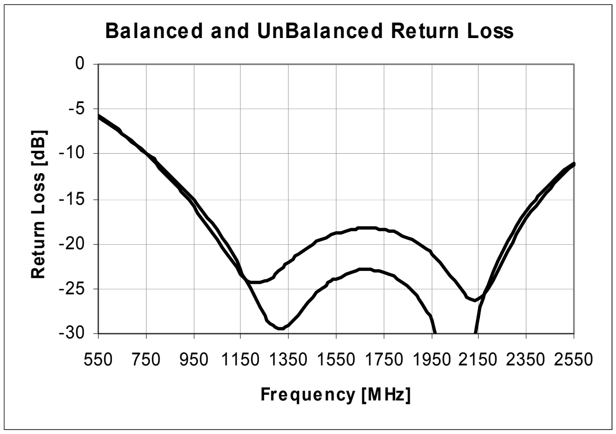
Tolerances are Non-Cumulative

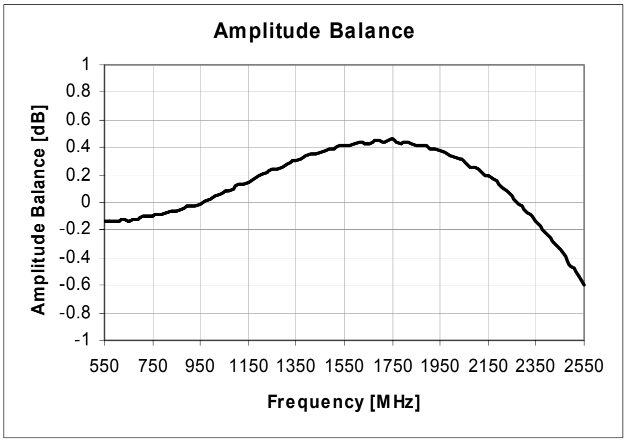
What'll we think of next

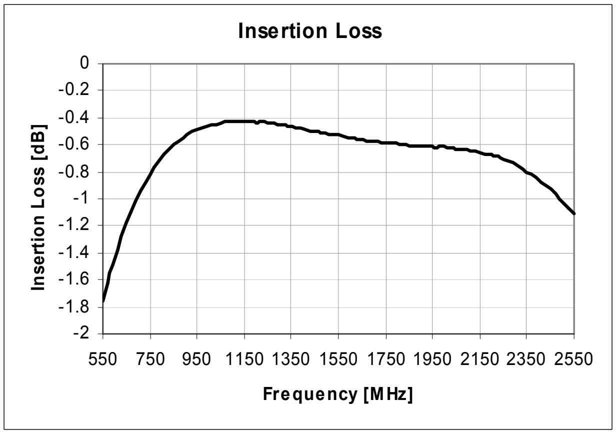
Available on Tape and Reel For Pick and Place Manufacturing.

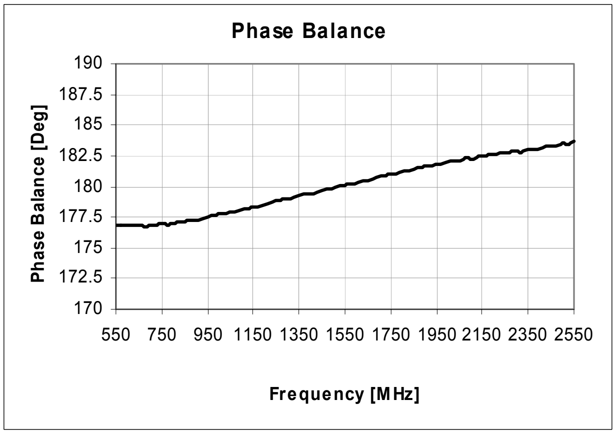
USA/Canada:	(315) 432-8909
Toll Free:	(800) 544-2414
Europe:	+44 2392-232392

Typical Broadband Performance: 550 MHz. to 2550 MHz.



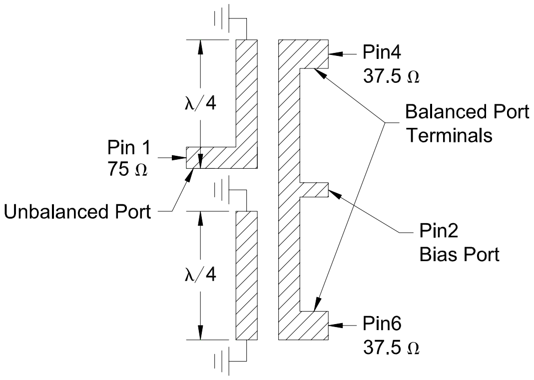






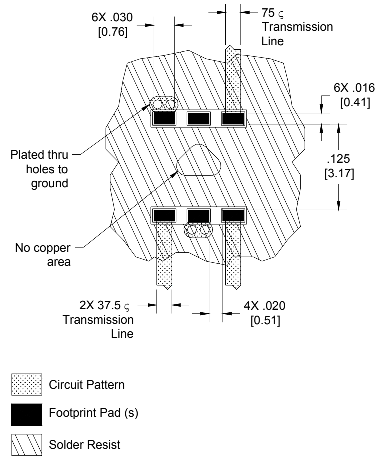
Pin Configuration:

Balun Pin Configruation



The internal configuration of the Xinger® balun is diagramed to the left; the unbalanced port is DC connected to ground and the two balanced ports are DC connected and floating. For many chipset applications there is an opportunity to eliminate two decoupling capacitors and/or use a single bias point if applicable. Differential drive is popular in integrated circuit since it aids stability in the presence of bond wire and pin inductance, provides some degree of immunity to power supply and ground noise, and can provide higher output power in the case of some device limits. The construction of the Xinger® balun is bonded multi-layered stripline made of low loss dielectric material with plated through vias connecting the internal circuitry to the external printed circuit board, similar to that of the Xinger® hybrids and directional couplers.

Mounting Configuration:



Dimensions are in Inches [Millimeters]
Mounting Footprint

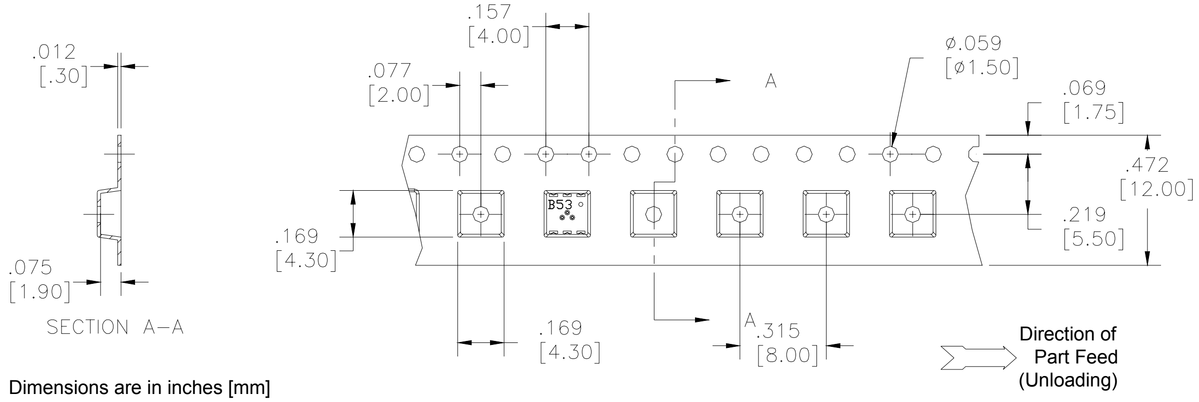
In order for Xinger surface mount components to work optimally, there must be a 75Ω transmission line to the balanced port and 37.5Ω transmission lines from the unbalanced ports. If this condition is not satisfied, amplitude balance, insertion loss and VSWR may not meet published specifications.

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/^{o}C

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

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.



Dimensions are in inches [mm]

Available on Tape and Reel For Pick and Place Manufacturing.

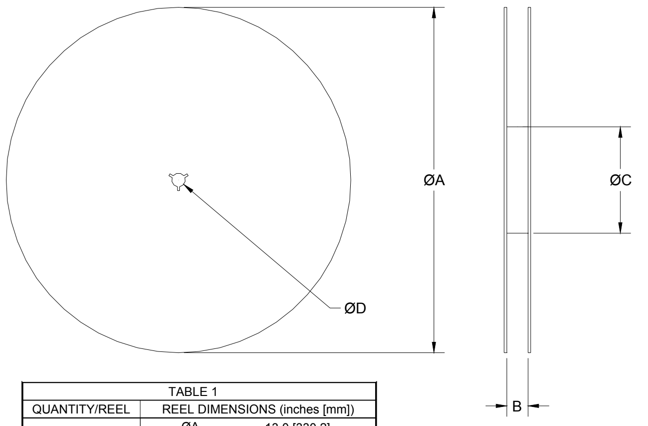


TABLE 1

QUANTITY/REEL	REEL DIMENSIONS (inches [mm])	
4000	ØA	13.0 [330.2]
	B	0.472 [12.0]
	ØC	4.017 [102.03]
	ØD	0.512 [13.0]

BD 2425 J 50 100 A 00

Function	Frequency	Package Dimensions	Unbalanced Impedance	Balanced Impedance + Coupling	Plating Finish	Codes
B = Balun BD = Balun + DC F = Filter FB = Filter / Balun C = 3dB Coupler DC = Directional X = RF cross over J = RF Jumper	0110 = 100 – 1000 MHz 0810 = 800 – 1000 MHz 0822 = 950 – 2150 MHz 0826 = 800 – 6200 MHz 1222 = 1200 – 2200 MHz 1416 = 1400 – 1600 MHz 1722 = 1700 – 2200 MHz 2326 = 2300 – 2600 MHz 2425 = 2400 – 2500 MHz 3150 = 3100 – 5000 MHz 3436 = 3400 – 3600 MHz 4859 = 4800 – 5900MHz 5153 = 5100 – 5300 MHz 5159 = 5100 – 5900 MHz 5759 = 5700 – 5900 MHz	A = 150 x 150 mils (4mm x 4mm) C = 120 x 120 mils (4mm x 4mm) D = 126 x 79 mils (3.2mm x 2mm) E = 100 x 80 mils (3mm x 2mm) G = 120 x 60 mils (3mm x 1.5mm) J = 80 x 50 mils (2mm x 1.25mm) K = 90 x 60 mils (2.25mm x 1.5mm) L = 60 x 30 mils (1.5mm x 0.75mm) N = 140 x 80 mils (3.5mm x 2mm)	50 = 50 Ohm 75 = 75 Ohm	12 = 12.5 to Ground 15 = 15Ω to Ground 25 = 25Ω to Ground 37 = 37.5Ω to Ground 50 = 50Ω to Ground 75 = 75Ω to Ground 100 = 100Ω to Ground 150 = 150Ω to Ground 03 = 3dB Hybrid 10 = 10dB Directional 20 = 20dB Directional	A = Gold P = Tin-Lead