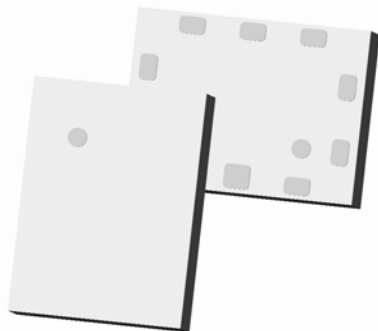




Ultra Low Profile Filter Balun 50Ω to 100Ω Balanced



Description

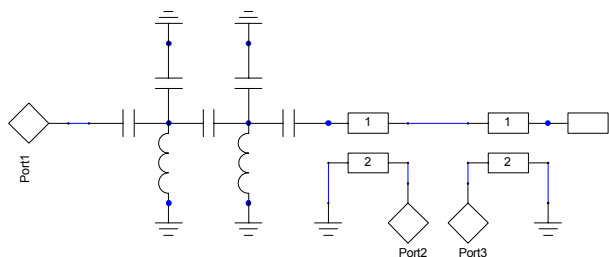
The FB2425E50100A00 is a low cost, low profile sub-miniature unbalanced to balanced transformer designed for differential inputs and output locations on next generation wireless chipsets in an easy to use surface mount package covering wireless LAN (802.11b/g/n) and Bluetooth frequencies (2400 MHz – 2500 MHz). The FB2425E50100A00 is ideal for high volume manufacturing and is in a lower profile unit than traditional ceramic parts. The FB2425E50100A00 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 semiconductors. The output ports have equal amplitude (-3dB) with 180 degree phase differential. The FB2425E50100A00 is available on tape and reel for high volume pick and place manufacturing.

Detailed Electrical Specifications: Specifications subject to change without notice.

Features:	Parameter	ROOM (25°C)			Unit
		Min.	Typ.	Max	
<ul style="list-style-type: none"> • 2.4 – 2.5 GHz. • Low Height Profile • 50 Ohm to 2 x 50 Ohm • 802.11b + g + n Compliant • Medium Power • No DC Decoupling Capacitors Required • Input to Output DC Isolation • Surface Mountable • Tape & Reel • Integral Filter • Integrated Bandpass Filter • Inverted Balun Configuration • Non-conductive Surface • RoHS Compliant 	Frequency	2.4		2.5	GHz
	Unbalanced Port Impedance		50		Ω
	Balanced Port Impedance		100		Ω
	Return Loss	9.5	14		dB
	Insertion Loss*		2.3	2.6	dB
	Amplitude Balance		0.5	1.0	dB
	Phase Balance		63	65	Degrees
	Attenuation @ 930 MHz.	45	52		dB
	Attenuation @ 1500 MHz.	45	52		dB
	Attenuation @ 1910 MHz.	18	22		dB
	Attenuation @ 4800 MHz.	23	25		dB
	Attenuation @ 5000 MHz.	25	27		dB
	Power Handling			0.5	Watts
	Thermal Resistance			TBD	°C / Watt
Operating Temperature	-55		+85	°C	

* Insertion Loss stated at room temperature (2.8 dB Max at +85 °C)

Pin Configuration



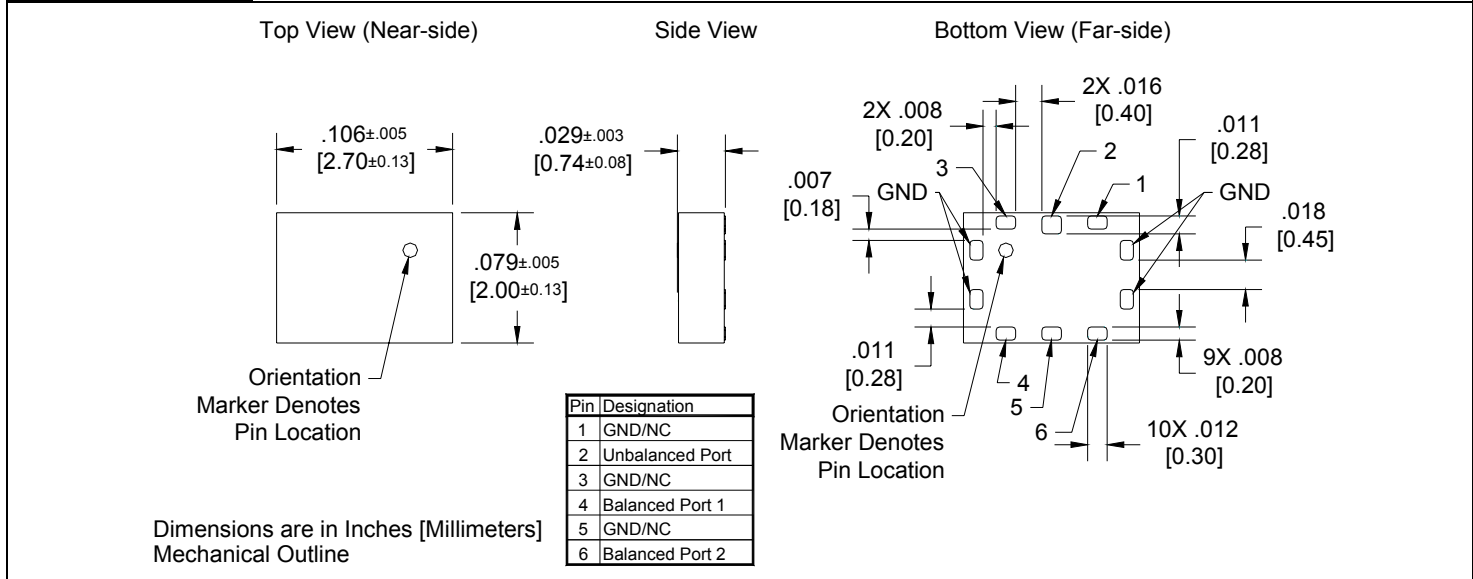
The internal configuration of the Ultra low profile filter balun is diagramed to the left. A lumped element filter is located in front of the unbalanced input of the balun. The unbalanced port is terminated in an open-circuit and the two balanced ports are connected to ground.

The use of differential circuits is increasing in highly integrated circuits, because of its inherent noise immunity properties. Differential circuits have superior performance when looking at properties like cross coupling, immunity to external noise sources and power supply noise. When designing power amplifiers differential circuits also help minimize 2nd and 3rd order intermodulation products.

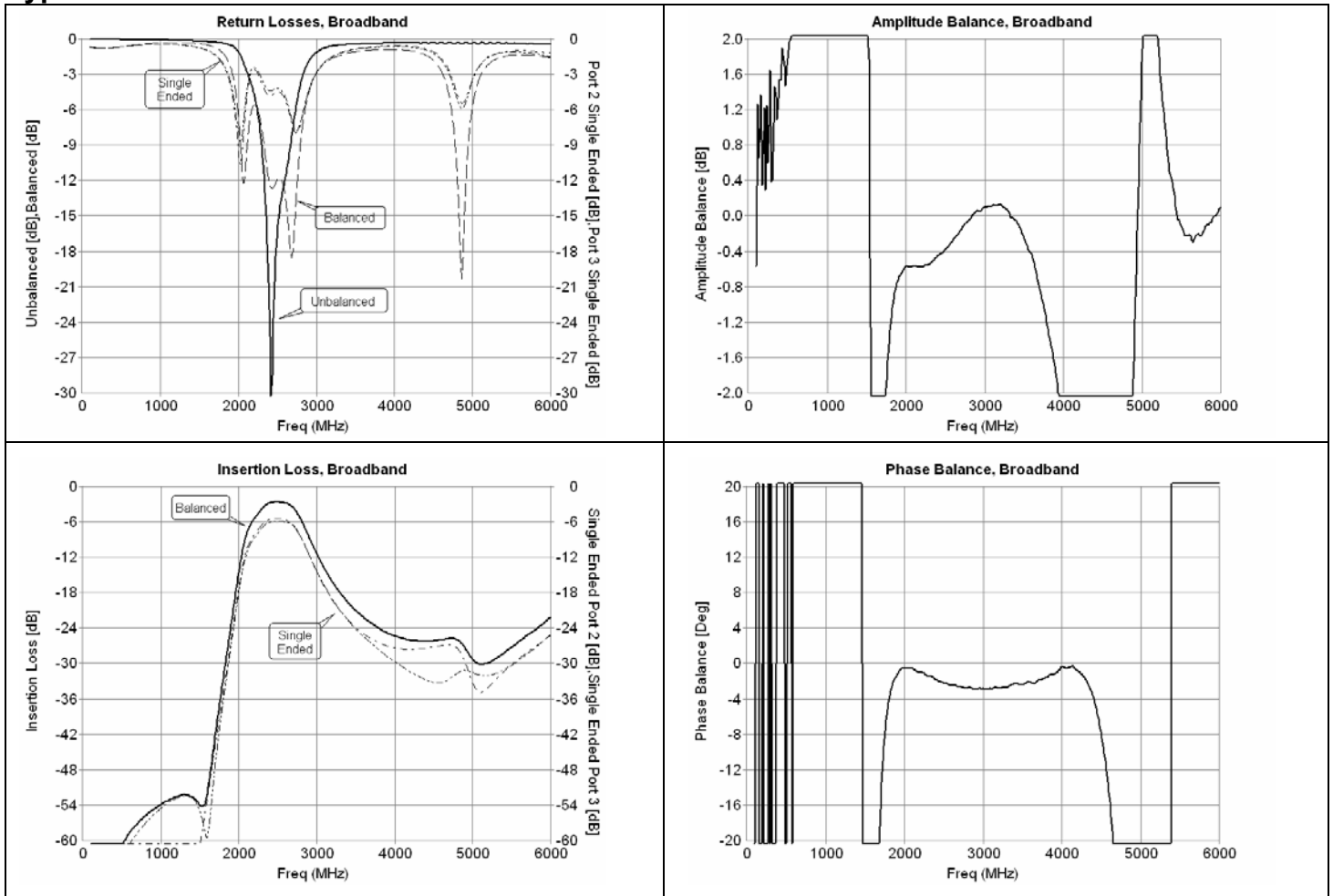
The construction of the filter balun is bonded multi-layered stripline made of low loss dielectric material with plated through vias connecting the internal circuitry to the external printed circuit board, similar to that of the other hybrids and directional couplers



Outline Drawing



Typical Broadband Performance: 0 GHz. to 6 GHz.



USA/Canada: (315) 432-8909
Toll Free: (800) 411-6596
Europe: +44 2392-232392

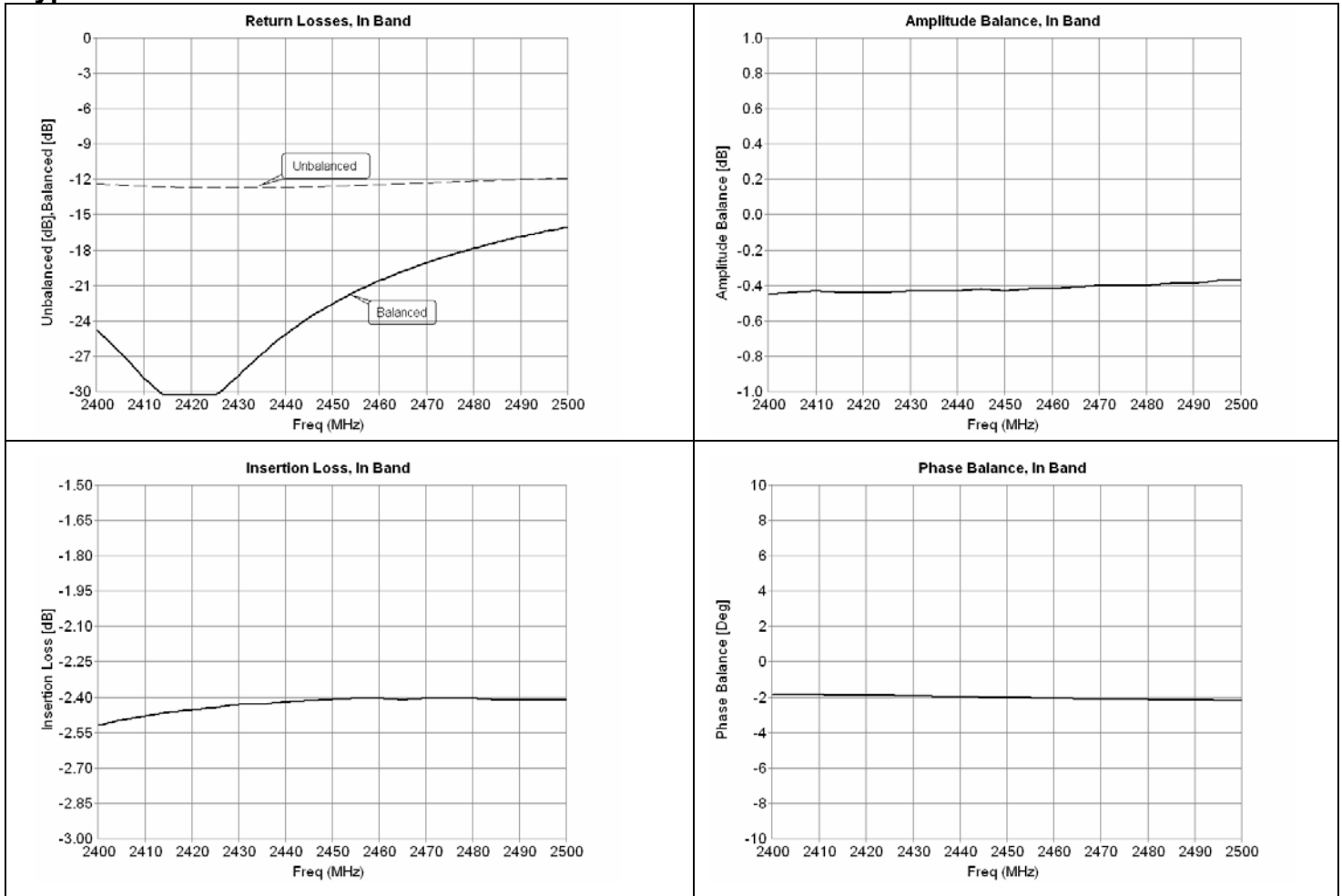
Available on Tape and Reel for Pick and Place Manufacturing.



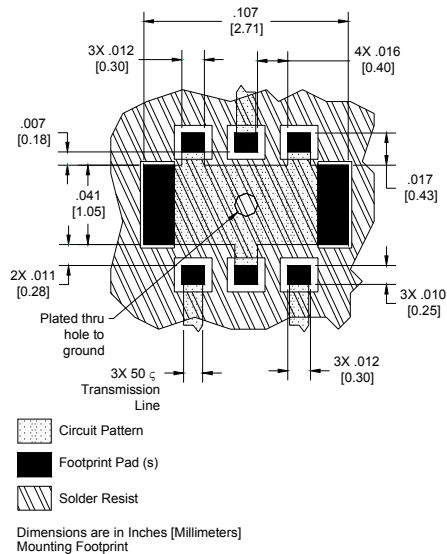
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Typical Pass Band Performance: 2.4 GHz. to 2.5 GHz.



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.

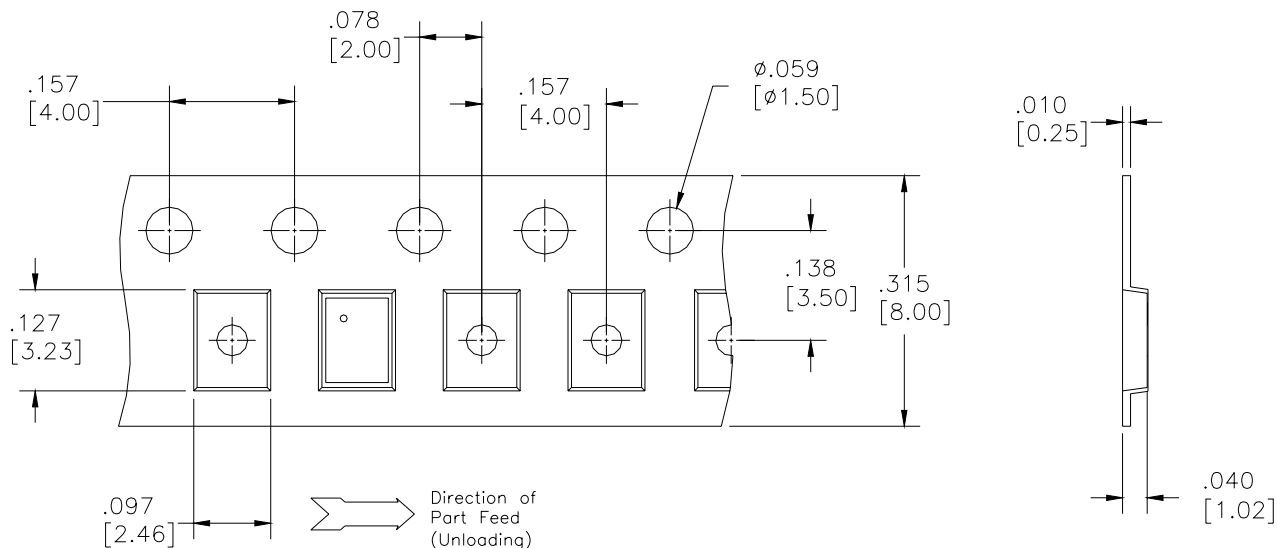
All of the Xinger components are constructed from ceramic filled PTFE composites which possess excellent electrical and mechanical stability having X and Y thermal coefficient of expansion (CTE) of 17 ppm/°C.

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.

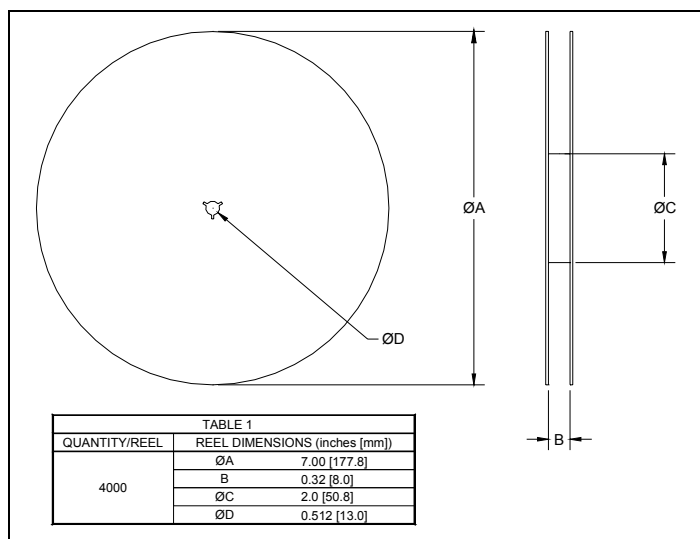


Packaging and Ordering Information

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]



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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 <small>(4mm x 4mm)</small> C = 120 x 120 mils <small>(4mm x 4mm)</small> D = 126 x 79 mils <small>(3.2mm x 2mm)</small> E = 100 x 80 mils <small>(3mm x 2mm)</small> G = 120 x 60 mils <small>(3mm x 1.5mm)</small> J = 80 x 50 mils <small>(2mm x 1.25mm)</small> K = 90 x 60 mils <small>(2.25mm x 1.5mm)</small> L = 60 x 30 mils <small>(1.5mm x 0.75mm)</small> N = 140 x 80 mils <small>(3.5mm x 2mm)</small>	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	

