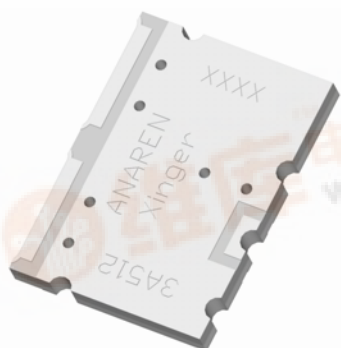


Xinger®

Balun 50Ω to 12.5Ω Balanced



Description

The 3A512 is a low profile balanced to unbalanced transformer designed for push-pull amplifiers in an easy to use surface mount package for Japanese PDC push-pull amplifier and mixer applications. These compact Xinger® surface mount baluns are ideal for high volume manufacturing and are more reliable and repeatable than traditional baluns. The 3A512 has an unbalanced port impedance of 50Ω and balanced port impedances of 12.5Ω to ground with a 25Ω balance between outputs. This eases the matching of the push-pull amplifier's power transistors, which have low impedance levels. The output ports have equal amplitude (-3dB) with 180 degree phase differential. The Xinger® balun is a result of years of research and development culminating with a solution so unique, a patent is pending on the design approach. The 3A512 is available on tape and reel for pick and place high volume manufacturing.

Features:

- 1.4 – 1.6 GHz
- 180° Transformer
- 50 Ohm to 2 x 12.5 + j3.5 Ohm
- Low Insertion Loss
- High Power
- Even Order Suppression
- Input to Output DC Isolation
- Surface Mountable
- Tape & Reel
- Convenient Package

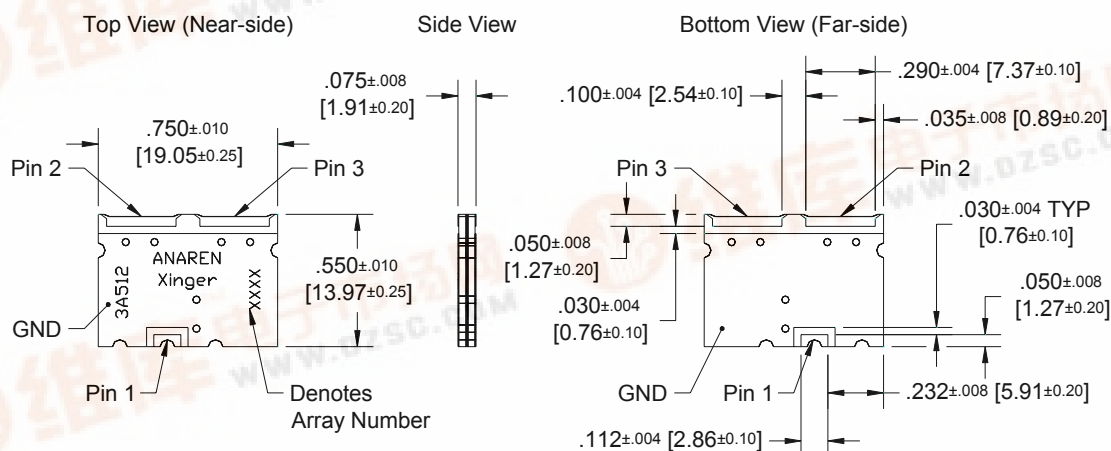
ELECTRICAL SPECIFICATIONS***

Frequency	Unbalanced Port Impedance	Balanced Port Impedance*	Return Loss	Insertion Loss**
GHz	Ohms	Ohms	dB Min	dB max
1.4 – 1.6	50	12.5+j3.5	15	0.30
Amplitude Balance	Phase Balance	Power Handling	⊙JC	Operating Temp.
dB max	Degrees max	Watts	°C / Watt	°C
0.40	180± 5.0	250	5.8	-55 to +85

***Specification based on performance of unit properly installed on microstrip printed circuit boards with 50 Ω nominal impedance. Specifications subject to change without notice.

**Insertion loss specification excludes reflection loss. * 50Ω reference to ground

Outline Drawing



Dimensions are in Inches [Millimeters]
3A512 Rev A Mechanical Outline



Rev. A

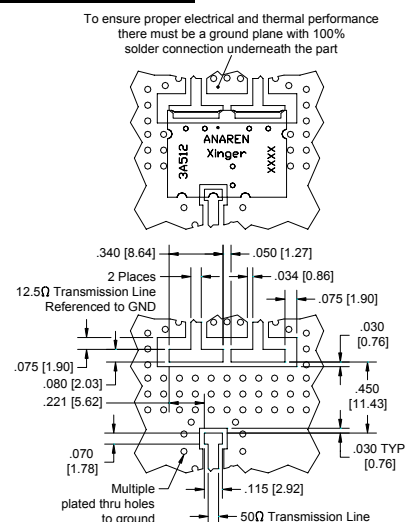
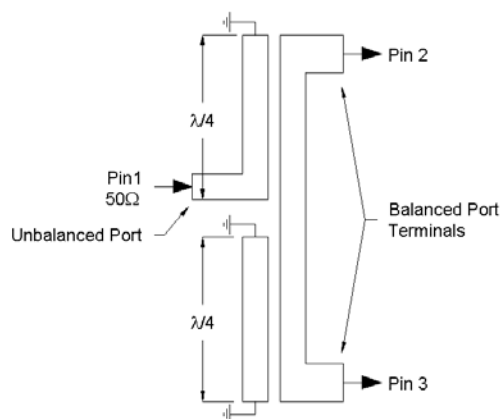
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The figure displays four plots related to the performance of the 3A512 coupler, showing various parameters versus Frequency [MHz] from 1200 to 1800 MHz.

- Amplitude Balance 3A512:** The plot shows Amplitude Balance [dB] on the y-axis (ranging from -0.5 to 0.5) versus Frequency [MHz] on the x-axis (ranging from 1200 to 1800). The curve starts near 0 dB at 1200 MHz, remains relatively flat until about 1400 MHz, and then increases steadily to approximately 0.35 dB at 1800 MHz.
- Return Loss 3A512:** The plot shows Return Loss [dB] on the y-axis (ranging from -50 to 0) versus Frequency [MHz] on the x-axis (ranging from 1200 to 1800). The curve shows a deep resonance dip reaching approximately -48 dB around 1450 MHz. The return loss is highest (least negative) at the band edges, around -15 dB at 1200 MHz and -18 dB at 1800 MHz.
- Insertion Loss 3A512:** The plot shows Insertion Loss [dB] on the y-axis (ranging from -0.5 to 0) versus Frequency [MHz] on the x-axis (ranging from 1200 to 1800). The curve starts at approximately -0.28 dB at 1200 MHz, rises to a peak of about -0.15 dB around 1400 MHz, and then generally decreases to approximately -0.32 dB at 1800 MHz.
- Phase Balance 3A512:** The plot shows Phase Balance [Degrees] on the y-axis (ranging from -190 to -170) versus Frequency [MHz] on the x-axis (ranging from 1200 to 1800). The curve is relatively flat, starting at approximately -180 degrees at 1200 MHz and slightly decreasing to about -182 degrees at 1800 MHz.

Mounting Configuration:



Dimensions are in Inches [Millimeters]
3A512 Rev A Mounting Footprint

USA/Canada: (315) 432-8909
Toll Free: (800) 544-2414

Available on Tape and
Reel For Pick and Place



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