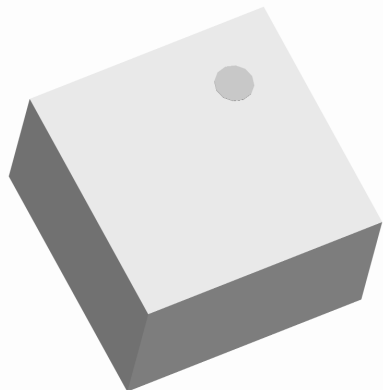


# Xinger®



## Ultra Low Profile 0404 Balun for the Cambridge Silicon Radio M1824 UNIFI-1 Chipset

### Description

The BD2425NCSR is a low cost, low profile sub-miniature unbalanced to balanced transformer designed specifically for Cambridge Silicon Radio's UNIFI-1 WiFi chipset. The BD2425NCSR is ideal for high volume manufacturing and delivers higher performance than traditional ceramic baluns. The BD2425NCSR matched exactly to the differential port impedances of the UNIFI-1 device. The BD2425NCSR enables single ended signals to be applied to differential ports of this Cambridge Silicon Radio chipsets. The output ports have equal amplitude (-3dB) with 180 degree phase differential. The BD2425NCSR 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
- 0.56 mm Height Profile
- Matched for CSR's UNIFI-1
- Low Insertion Loss
- Surface Mountable
- Tape & Reel
- Non-conductive
- RoHS Compliant
- Halogen free

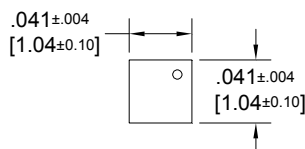
| Parameter                 | ROOM (25°C) |         |      | Unit  |
|---------------------------|-------------|---------|------|-------|
|                           | Min.        | Typ.    | Max  |       |
| Frequency                 | 2400        |         | 2500 | MHz   |
| Unbalanced Port Impedance |             | 50      |      | Ω     |
| Balanced Port Impedance   |             | Matched |      | Ω     |
| Return Loss               | 10          | 15      |      | dB    |
| Insertion Loss*           |             | 0.35    | 1.0  | dB    |
| Amplitude Balance         |             | 0.2     | 0.5  |       |
| Phase Balance             |             | 2       | 4    |       |
| CMRR                      |             | 35      |      |       |
| 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)

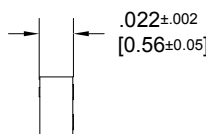
\*\* Stated performance is based on the proper matching network described in the data sheet

### Outline Drawing

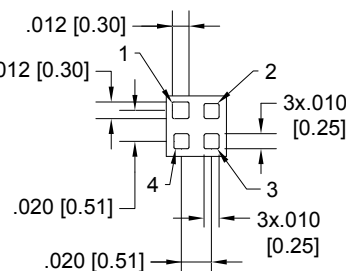
Top View (Near-side)



Side View



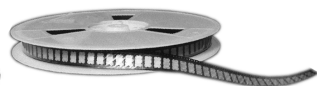
Bottom View (Far-side)

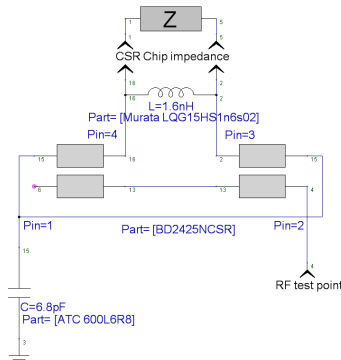


Dimensions are in Inches [Millimeters]  
Mechanical Outline

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

Tolerances are Non-Cumulative





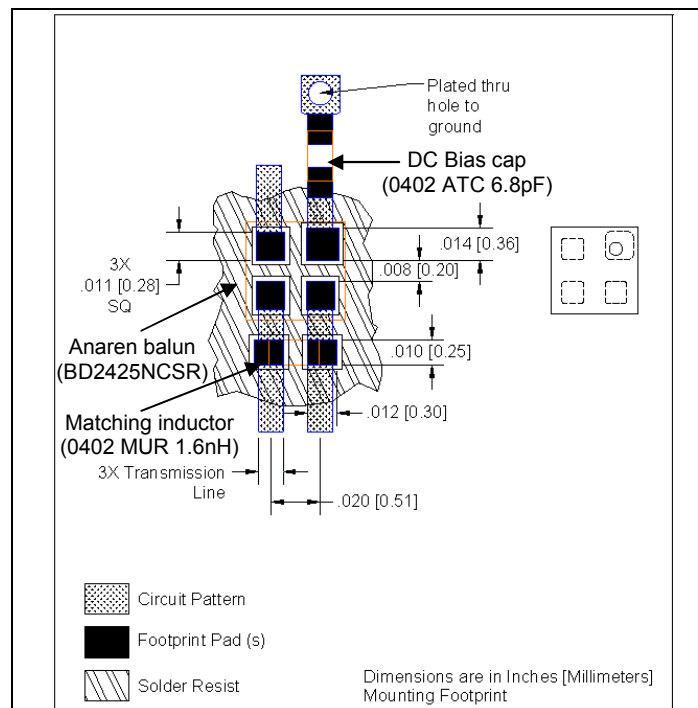
Schematic of the Anaren balun with matching components

## 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.

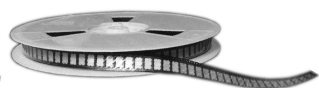
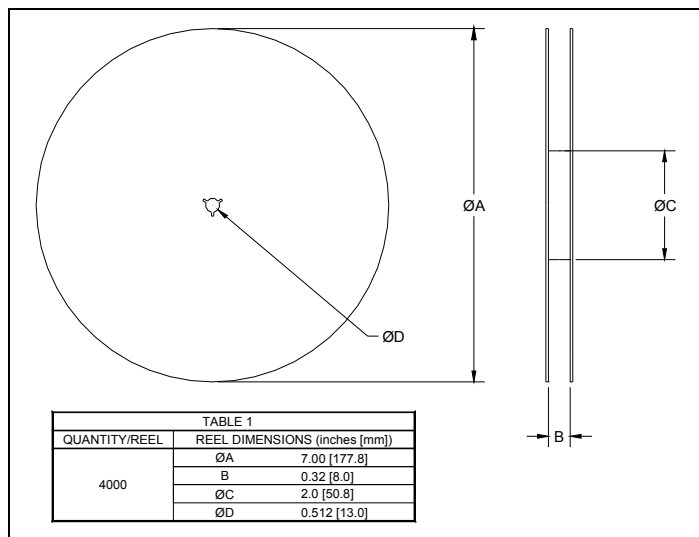
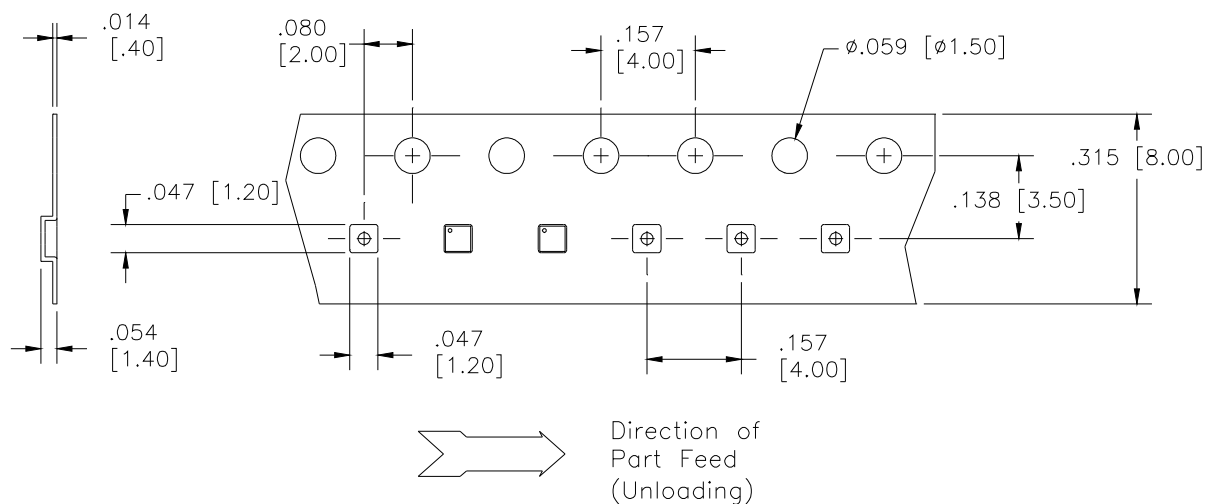
All of the Xinger components are constructed from ceramic filled PTFE composites which possess excellent electrical and mechanical stability having X and Y thermal coefficient of expansion (CTE) of 17 ppm/°C.

An example PCB footprint of Anaren's 0404 balun (BD2425NCSR) with MUR 0402 inductor (1.6nH- LQG15HS1n6s02) and ATC 0402 capacitor (6.8pF – 600L6R8) used in the testing 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.



### 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.



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Components Supply Platform

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