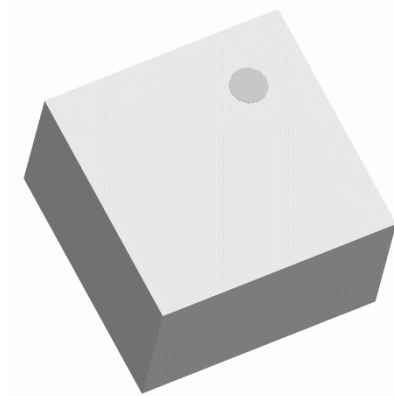




**Ultra Low Profile 0404 Balun**  
**50Ω to 75Ω Balanced**



**Description:**

The BD2425N5075AHF 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 BD2425N5075AHF is halogen-free, ideal for high volume manufacturing and delivers higher performance than traditional ceramic baluns. The BD2425N5075AHF has an unbalanced port impedance of 50Ω 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 BD2425N5075AHF is available on tape and reel for pick and place high volume 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"> <li>• 2400 – 2500 MHz</li> <li>• 0.56mm Height Profile</li> <li>• 50 Ohm to 2 x 37.5 Ohm</li> <li>• Low Insertion Loss</li> <li>• 802.11 b+g</li> <li>• MIMO b+g</li> <li>• Bluetooth</li> <li>• Zigbee</li> <li>• Surface Mountable</li> <li>• Tape &amp; Reel</li> <li>• Non-conductive surface</li> <li>• RoHS Compliant</li> <li>• Halogen-Free</li> </ul> | Frequency                 | 2400        |      | 2500 | MHz     |    |
|   | Unbalanced Port Impedance |             | 50   |      | Ω       |    |
|   | Balanced Port Impedance   |             | 75   |      | Ω       |    |
|   | Return Loss               | 14          | 18   |      | dB      |    |
|   | Insertion Loss*           |             | 0.7  | 0.9  | dB      |    |
|   | Amplitude Balance         |             | 0.3  | 0.9  | dB      |    |
|   | Phase Balance             |             | 1    | 3    | Degrees |    |
|   | CMRR                      |             | 35   |      | 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

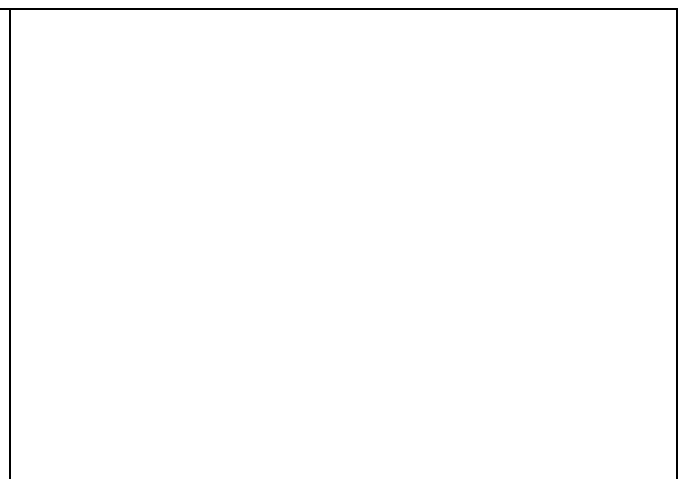
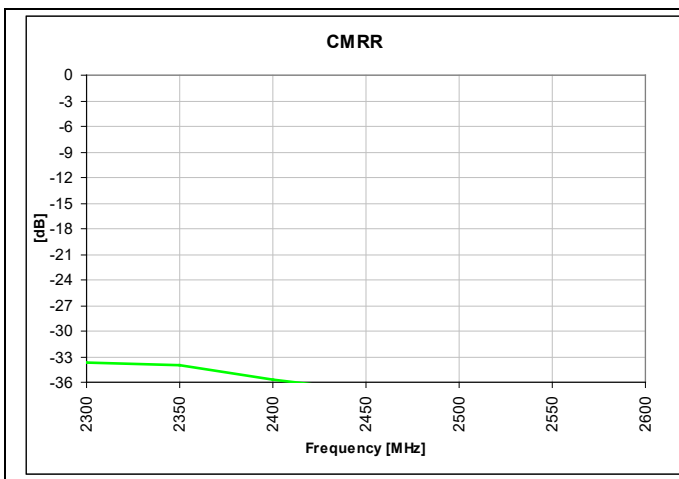
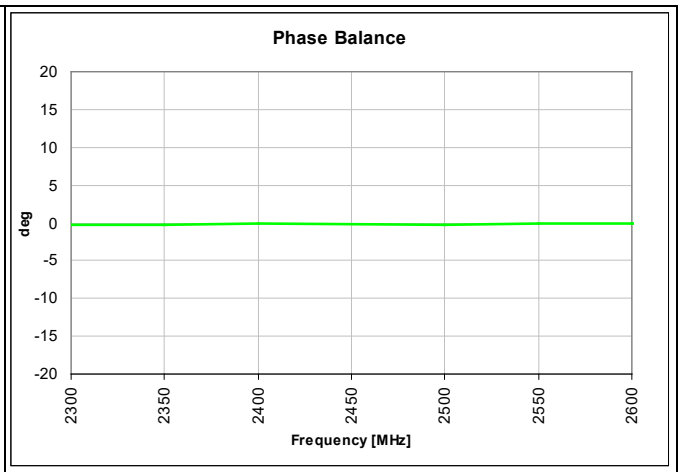
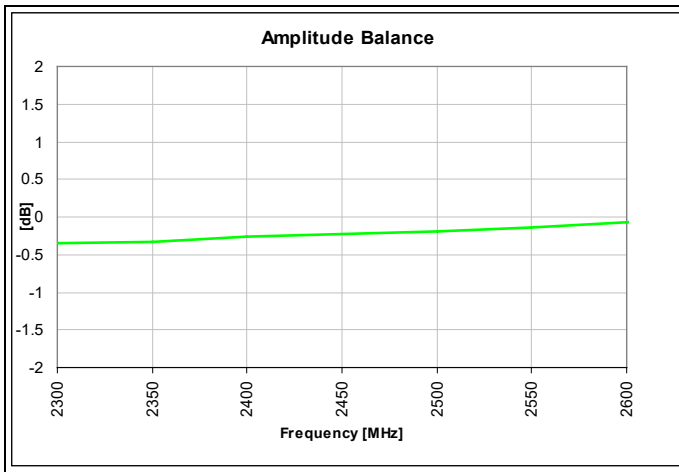
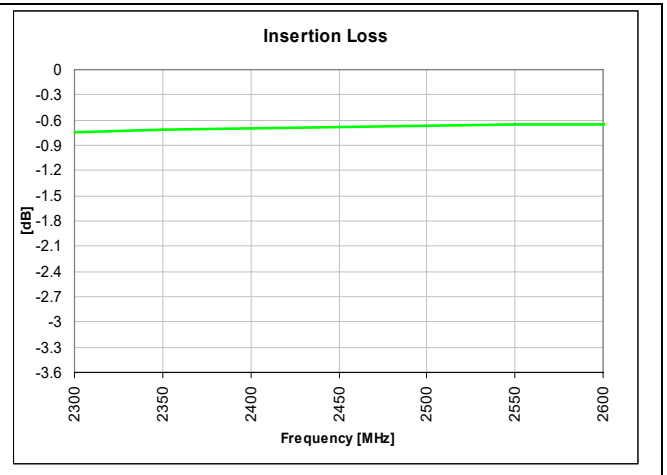
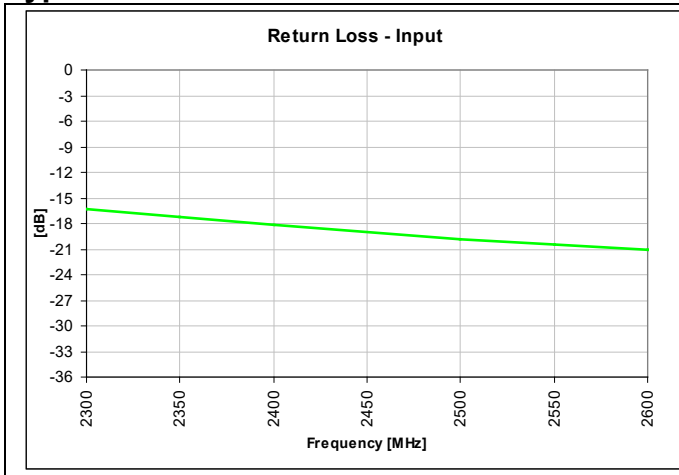
Bottom View (Far-side)

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

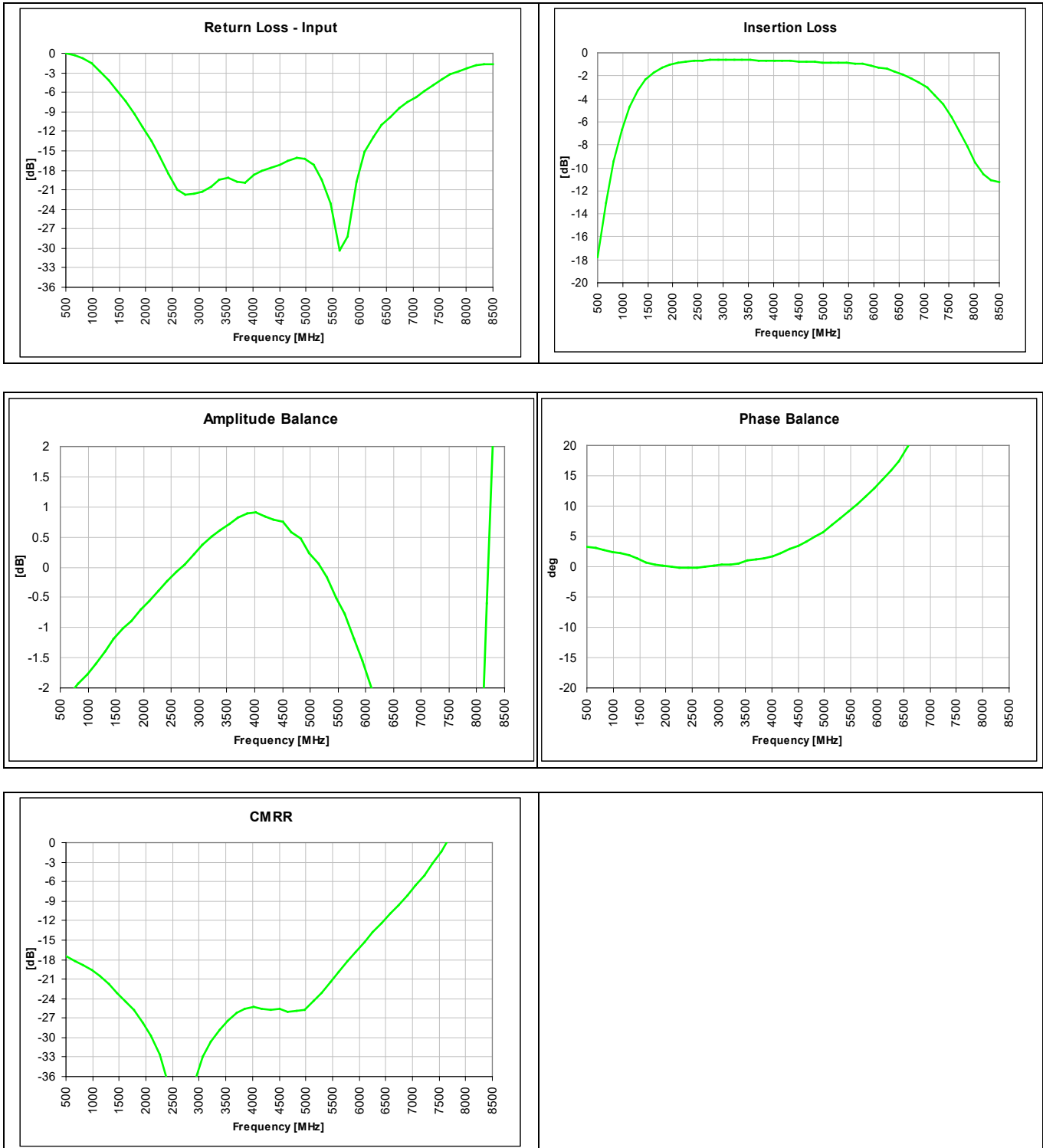
Dimensions are in Inches [Millimeters]  
Mechanical Outline

Tolerances are Non-Cumulative

**Typical Performance: 2300 MHz. to 2600 MHz.**



**Wide Band Performance: 500 MHz. to 8500 MHz.**

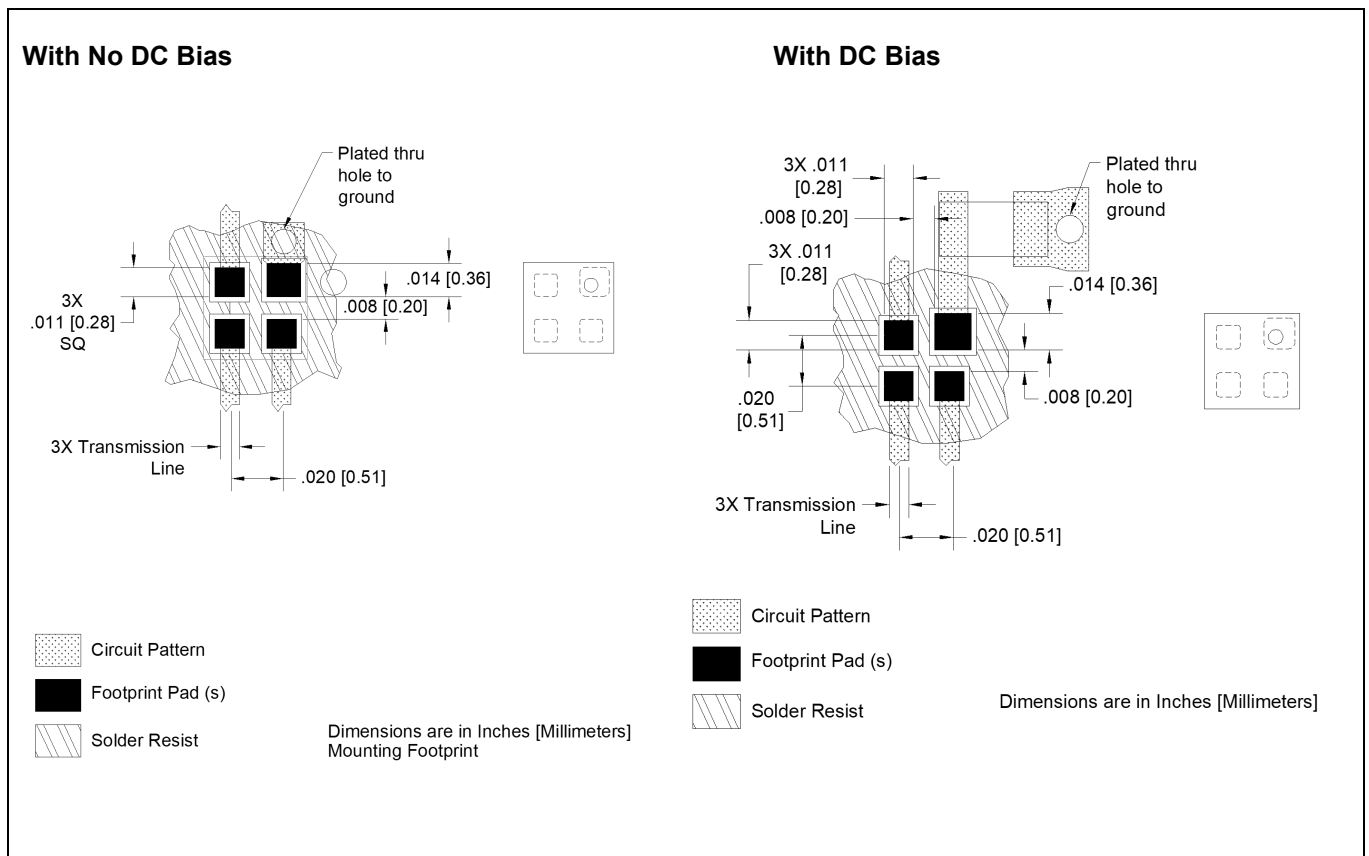


### Mounting Configuration:

In order for Xinger surface mount components to work optimally, the proper impedance transmission lines must be used to connect to the ports. If this condition is not satisfied, insertion loss, Isolation and VSWR may not meet published specifications.

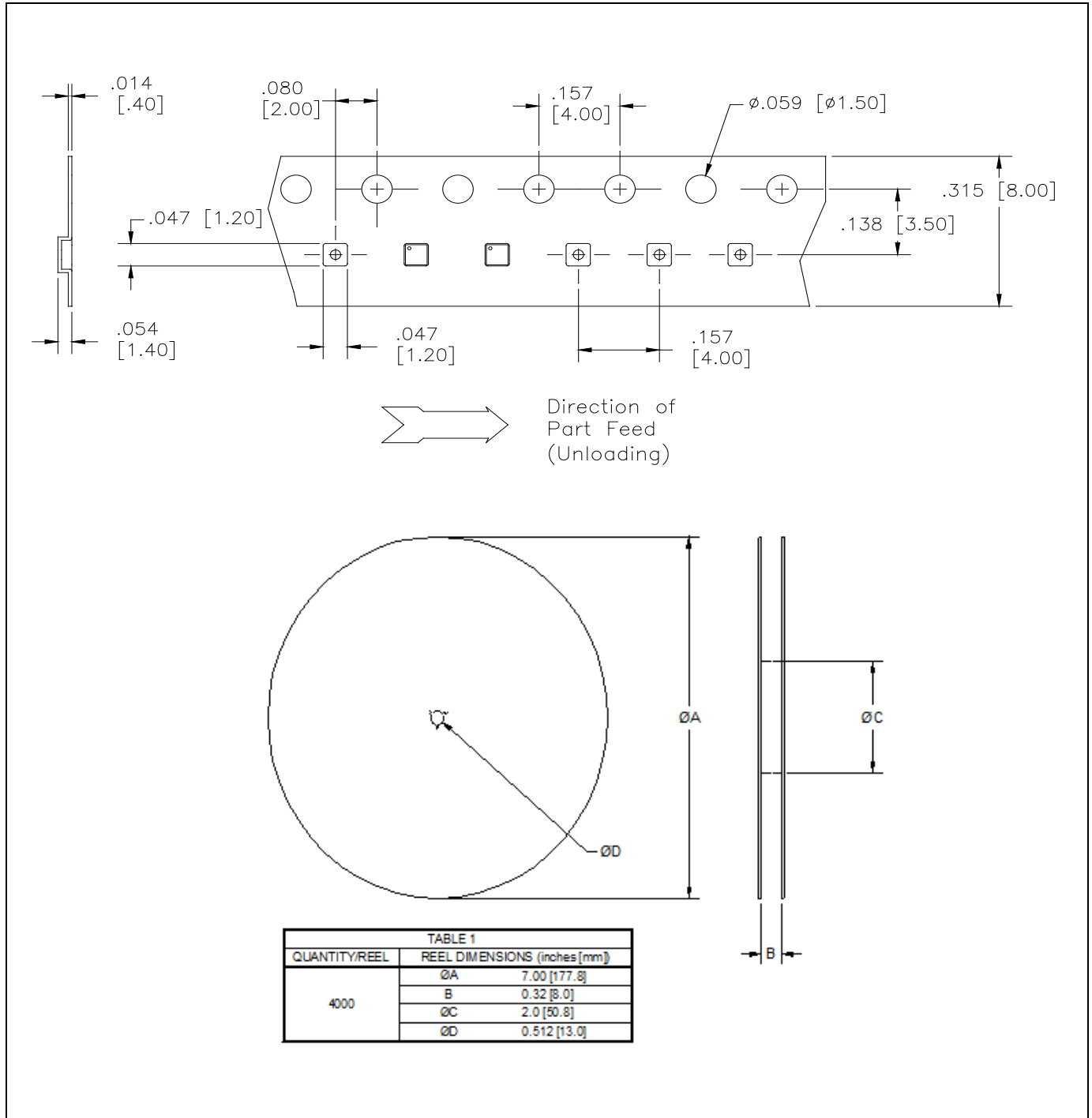
All of the Xinger components are constructed from ceramic filled PTFE composites which possess excellent electrical and mechanical stability.

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.



**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.



**Contact us:**  
[rf&s\\_support@ttm.com](mailto:rf&s_support@ttm.com)