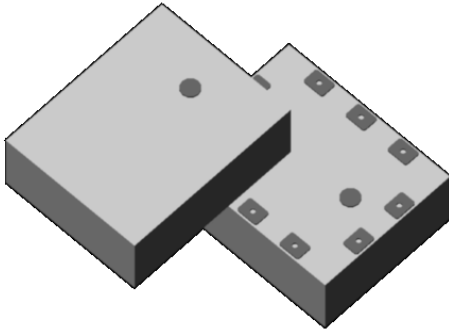


# Xinger®

## Ultra Low Profile 1008 Balun 50Ω to 50Ω Balanced



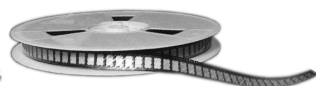
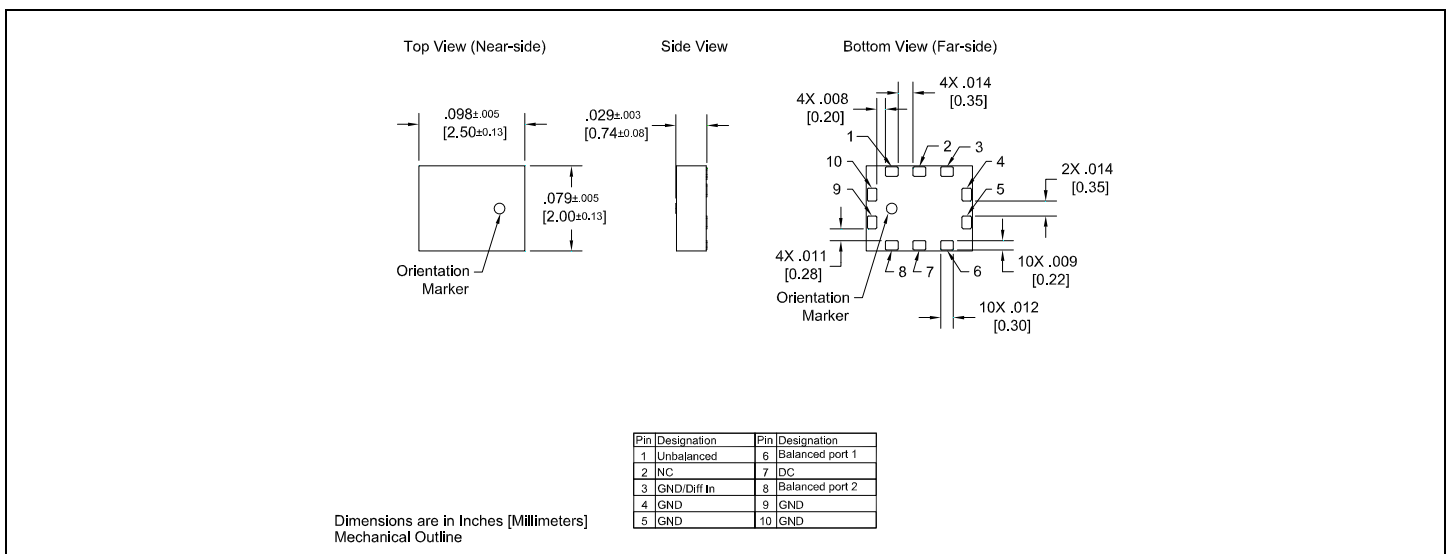
### Description

The BD0310E5050A00 is a low profile sub-miniature balanced to unbalanced transformer designed for differential input locations on frequency conversion devices such as A to D and D to A converters. In an easy to use surface mount package covering 300 MHz to 1000 MHz and with CMRR performances over 2x that of the incumbent wire wound products, this transformer is optimized to offer improved SFDR management during operation of the frequency converter device. The BD0310E5050A00 is ideal for high volume manufacturing and is higher performance and smaller form factor than traditional wire wound transformers. The BD0310E5050A00 has an unbalanced port impedance of 50Ω and a 50Ω balanced port impedance. This transformation enables single ended signals to be applied to differential ports on the frequency converter devices. The output ports have equal amplitude (-3dB) with 180 degree phase differential. The BD0310E5050A00 is available on tape and reel for pick and place high volume manufacturing.

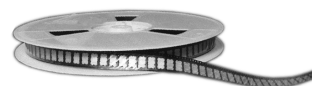
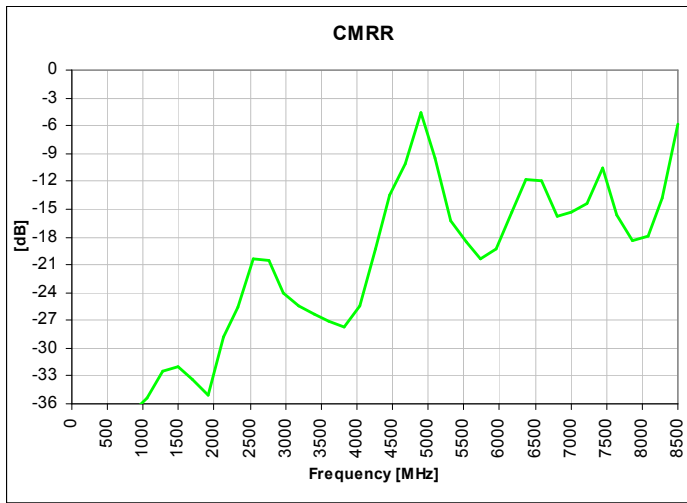
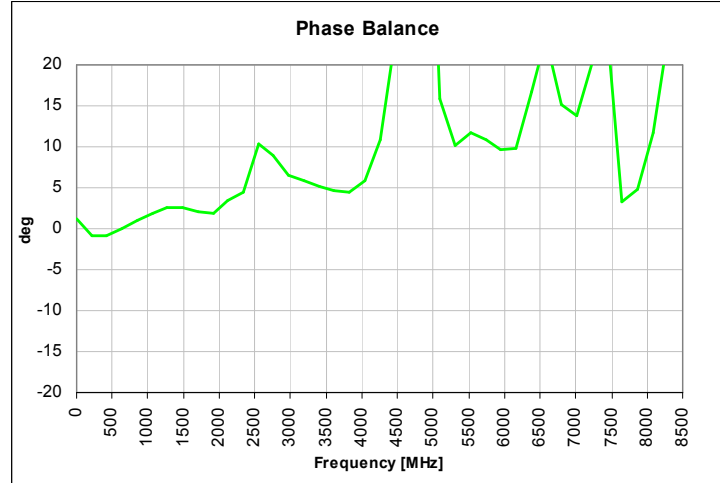
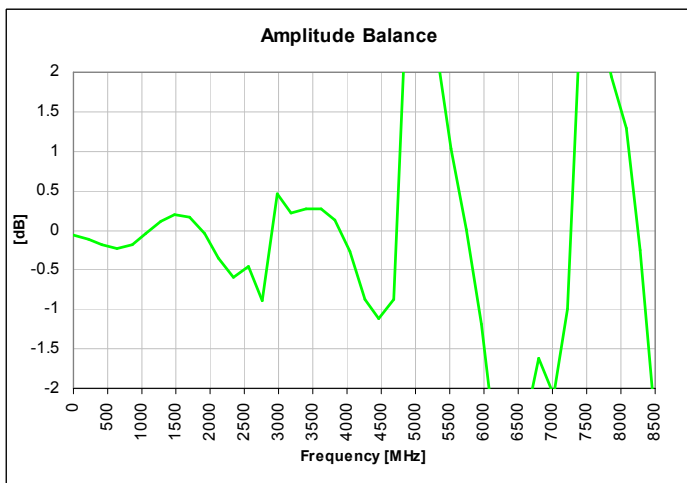
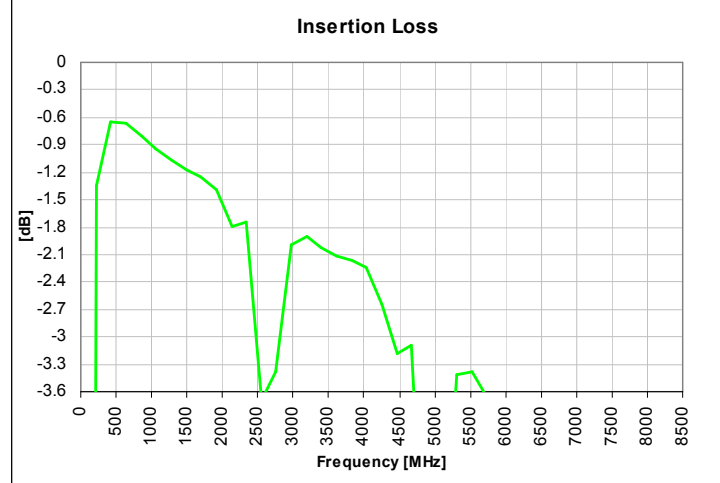
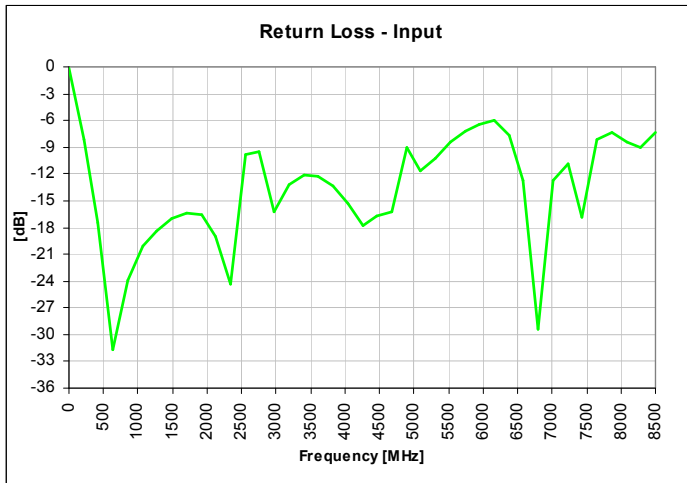
### Detailed Electrical Specifications: Specifications subject to change without notice.

| Features:                          | Parameter                 | ROOM (25°C) |      |      | Unit    |
|------------------------------------|---------------------------|-------------|------|------|---------|
|                                    |                           | Min.        | Typ. | Max  |         |
| • 300 – 1000 MHz                   | Frequency                 | 300         |      | 1000 | MHz     |
| • 0.74 mm Height Profile           | Unbalanced Port Impedance |             | 50   |      | Ω       |
| • 50 Ohm to 2 x 25 Ohm             | Balanced Port Impedance   |             | 50   |      | Ω       |
| • Excellent CMRR                   | Return Loss               | 10.3        | 11.5 |      | dB      |
| • Input to Output DC Isolation     | Insertion Loss*           |             | 0.9  | 1.1  | dB      |
| • Surface Mountable                | Amplitude Balance         |             | 0.2  | 0.7  | dB      |
| • Tape & Reel                      | Phase Balance             |             | 2    | 5    | Degrees |
| • Non-conductive Surface           | CMRR                      |             | 35   |      | dB      |
| • RoHS Compliant                   | Power Handling            |             |      | 2    | Watts   |
| • Cascadable                       | Operating Temperature     | -55         |      | +85  | °C      |
| • Configurable as UnUn Transformer |                           |             |      |      |         |

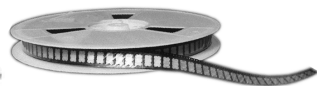
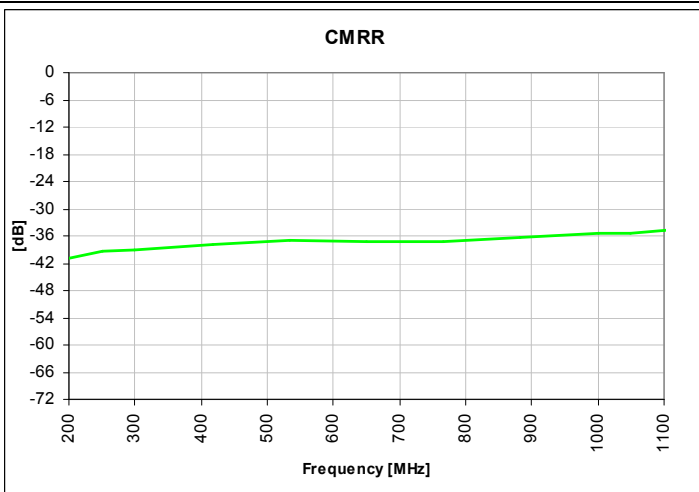
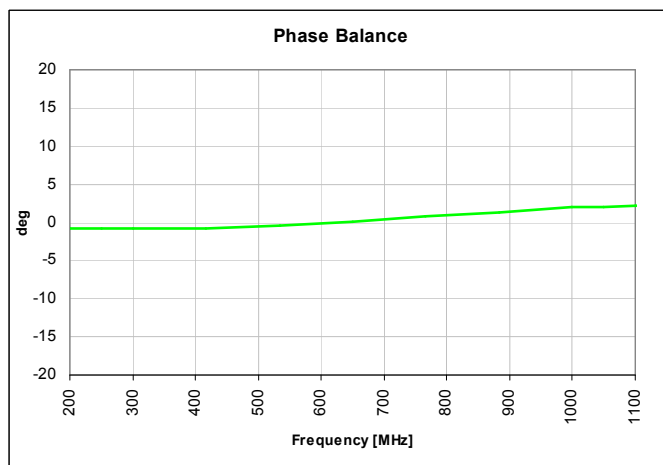
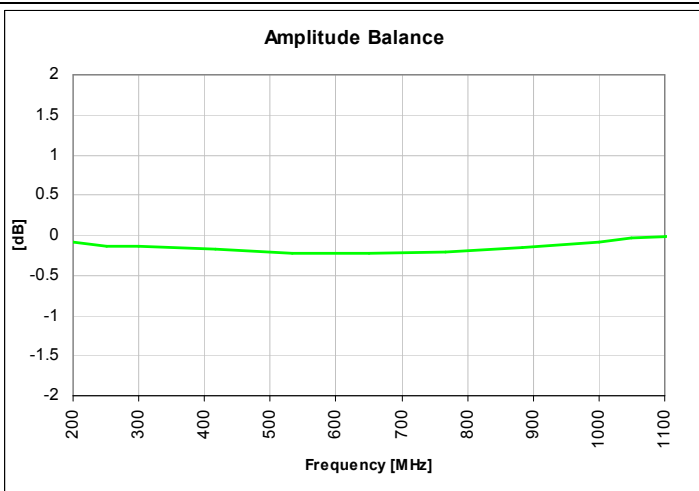
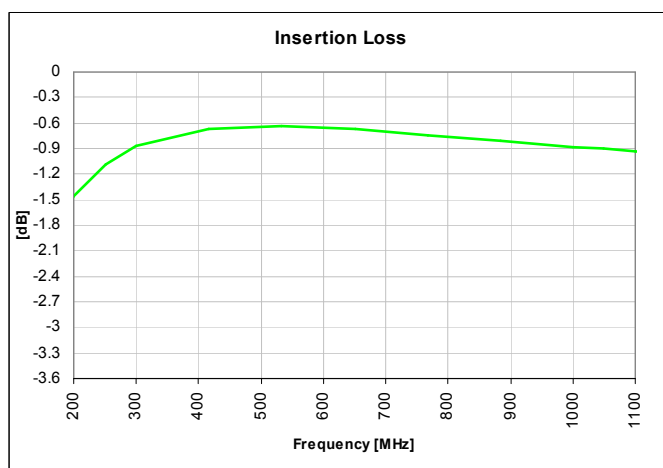
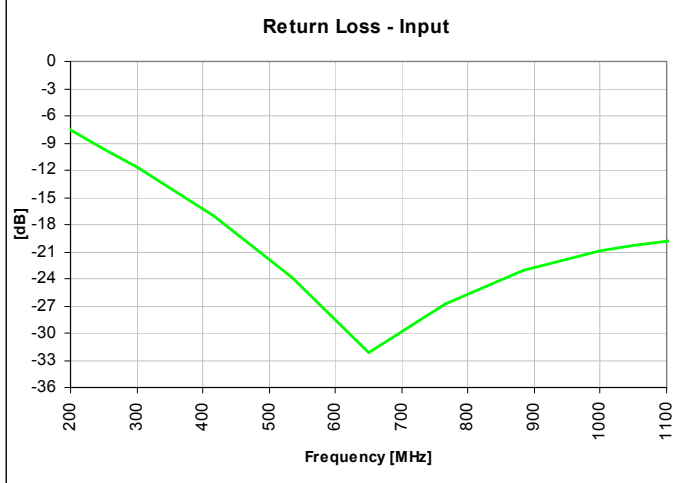
\* Insertion Loss stated at room temperature (Insertion Loss is approximately 0.1 dB higher at +85 °C) Outline Drawing



## Typical Broadband Performance: 0 to 8.0 GHz.



### Typical Performance: 200 MHz. to 1100 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 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 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.

