

# SMD Balun-Unbalance Transformer

## RFBLN2012090A□T Series

Multi Layer Chip BALUN – 2012 (0805)  
For ISM Band 2.4GHz Application

### FEATURES

- LTCC ( Low Temperature Cofired Ceramics ) Technology
- Miniatured Size 2.00 x 1.25 x 0.95 mm<sup>3</sup>
- Low Insertion Loss reduces power consumption
- Low inband Amplitude and Phase imbalance enable high performance wireless system operation.
- Enable for DC Biasing of PA or Mixer
- Special Balance/ Unbalance impedance is upon requested.

### ELECTRICAL CHARACTERISTICS

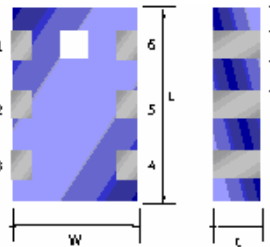
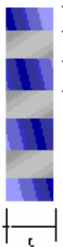
RFBLN2012090AxT Series

| Spec \ Part Number         | A0T                 | A1T    | A2T            |
|----------------------------|---------------------|--------|----------------|
| Central Frequency          | 2450 ± 50 MHz       |        |                |
| Impedance                  | Unbalanced          | 50 Ω   |                |
|                            | Balanced            | 50 Ω   | 100 Ω    200 Ω |
| Return Loss                | Min. 10 dB          |        |                |
| Inband Amplitude imbalance | Max. 2.0 dB         |        |                |
| Inband Phase imbalance     | Max 180 ± 10 degree |        |                |
| Insertion Loss             | 1.2 dB              | 1.0 dB | 1.0 dB         |

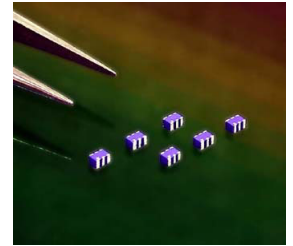
### APPLICATIONS

- 2.4GHz ISM band RF applications. Bluetooth, Wireless LAN
- Balance to Unbalance convert.

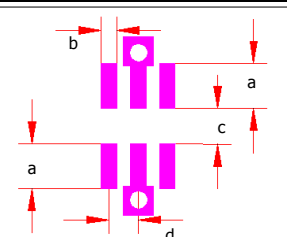
### DIMENSION

| Figure                                                                              | Symbol | Dimension      |
|-------------------------------------------------------------------------------------|--------|----------------|
|  | L      | 2.00 ± 0.15 mm |
|                                                                                     | W      | 1.25 ± 0.15 mm |
|                                                                                     | T      | 0.95 ± 0.10 mm |
|                                                                                     | A      | 0.20 ± 0.20 mm |
|                                                                                     | B      | 0.30 ± 0.20 mm |
|                                                                                     | C      | 0.35 ± 0.20 mm |
|  | D      | 0.65 ± 0.20 mm |

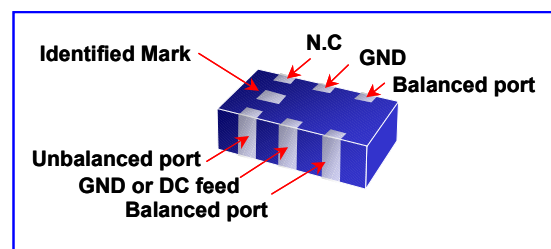
Patent Pending



### SOLDER LAND PATTERN

| Figure                                                                                                 | Symbol | Dimension (mm) |
|--------------------------------------------------------------------------------------------------------|--------|----------------|
|                      | a      | 1.00 ± 0.10    |
|                                                                                                        | b      | 0.35 ± 0.10    |
|                                                                                                        | c      | 0.80 ± 0.10    |
|                                                                                                        | d      | 0.65 ± 0.10    |
| Line width to be design to match 50Ω characteristic impedance, depending on PCB material and thickness |        |                |

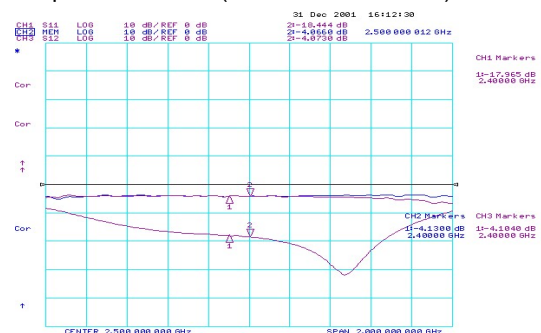
### CONSTRUCTION



Outline of 2.4GHz BALUN (2012 size)

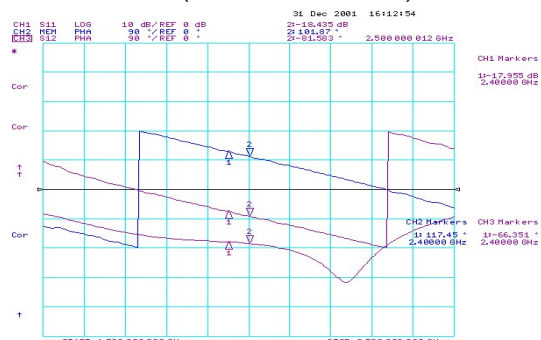
### ELECTRICAL PERFORMANCE

(1). Amplitude balance (RFBLN2012090A1T)



Remark: -4.1dB which should include 0.4dB microstrip line loss

(2). Phase balance (RFBLN2012090A1T)



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