



Generic photo used for illustration purposes only  
CASE STYLE: NK0402C

**+RoHS Compliant**

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications



Available Tape and Reel  
at no extra cost

| Reel Size | Devices/Reel                      |
|-----------|-----------------------------------|
| 7"        | 20, 50, 100, 200, 500, 1000, 4000 |

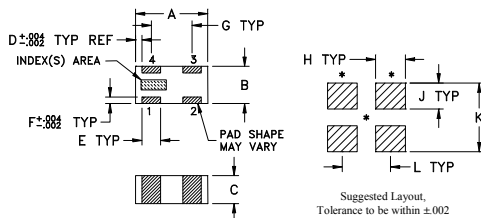
**Maximum Ratings**

|                       |               |
|-----------------------|---------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature*  | -40°C to 85°C |
| Input RF Power**      | 2W at 25°C    |

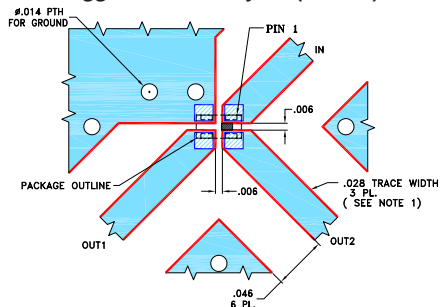
\*Refer to product storage temperature after installation.  
Suggestion for T&R unused product storage condition: +5~+35°C,  
Humidity 45~75%RH, 12 Month max.  
Permanent damage may occur if any of these limits are exceeded.  
\*\*Derate linearly to 1W at 85°C.

**Pad Connections**

|                               |   |
|-------------------------------|---|
| PRIMARY DOT (Unbalanced Port) | 1 |
| PRIMARY (GND) or DC Feed      | 2 |
| SECONDARY DOT (Balanced)      | 3 |
| SECONDARY (Balanced)          | 4 |

**Outline Drawing****PCB Land Pattern****Outline Dimensions (inch/mm)**

|      |      |      |       |      |      |      |      |
|------|------|------|-------|------|------|------|------|
| A    | B    | C    | D     | E    | F    | G    | H    |
| .039 | .020 | .015 | .004  | .010 | .004 | .022 | .016 |
| 1.0  | 0.51 | 0.38 | 0.10  | 0.25 | 0.10 | 0.56 | 0.41 |
| J    | K    | L    | wt    |      |      |      |      |
| .014 | .037 | .026 | grams |      |      |      |      |
| 0.36 | 0.94 | 0.66 | .0007 |      |      |      |      |

**Evaluation Board MCL P/N: TB-1012+  
Suggested PCB Layout (PL-549)**

NOTES:  
1. TRACE WIDTH IS SHOWN FOR FR4, GRADE IT-180TC (TECO CORP.)  
WITH DIELECTRIC THICKNESS .016-.0015, COPPER: 1/2 OZ. EACH SIDE.  
FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.  
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.  
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).  
DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

**Notes**

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.  
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.  
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**Features**

- miniature size 0402 (0.039"[1.0mm] x 0.020"[0.5mm] x 0.015"[0.37mm])
- low phase unbalance, 1.2 deg.
- LTCC construction
- low cost
- aqueous washable

**Applications**

- ISM Band
- WLAN/Wi-Fi
- Bluetooth
- Zigbee

**Electrical Specifications at 25°C**

| Parameter             | Frequency (MHz) | Min. | Typ. | Max. | Unit   |
|-----------------------|-----------------|------|------|------|--------|
| Impedance Ratio       |                 |      | 2    |      |        |
| Frequency Range       |                 | 2400 | —    | 2500 | MHz    |
| Insertion Loss*       | 2400 - 2500     | —    | 0.6  | 1.2  | dB     |
| Amplitude Unbalance   | 2400 - 2500     | —    | 0.5  | 2    | dB     |
| Phase Unbalance†      | 2400 - 2500     | —    | 1.2  | 10   | Degree |
| Unbalance Return Loss | 2400 - 2500     | 9    | 16   | —    | dB     |

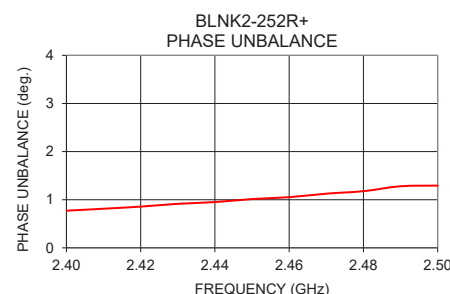
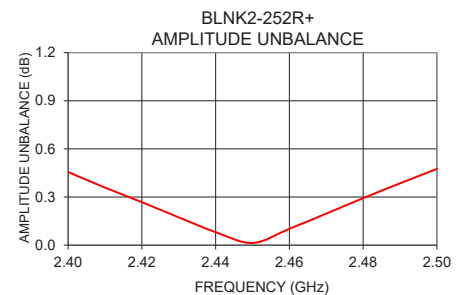
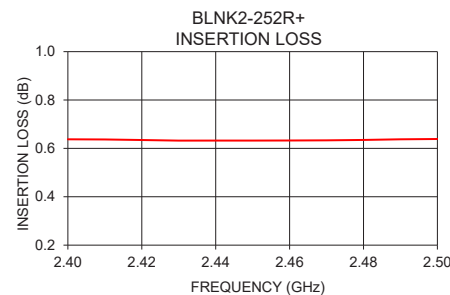
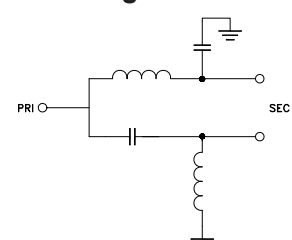
\* Tested Evaluation Board TB-1012+

† Relative to 180°

**Typical Performance Data at 25°C\*\***

| FREQUENCY (GHz) | INSERTION LOSS (dB) | INPUT R. LOSS (dB) | AMPLITUDE UNBALANCE (dB) | PHASE UNBALANCE (Deg.) |
|-----------------|---------------------|--------------------|--------------------------|------------------------|
| 2.40            | 0.64                | 13.57              | 0.46                     | 0.77                   |
| 2.41            | 0.64                | 13.58              | 0.36                     | 0.81                   |
| 2.42            | 0.63                | 13.59              | 0.27                     | 0.86                   |
| 2.43            | 0.63                | 13.59              | 0.17                     | 0.91                   |
| 2.44            | 0.63                | 13.61              | 0.08                     | 0.95                   |
| 2.45            | 0.63                | 13.61              | 0.01                     | 1.01                   |
| 2.46            | 0.63                | 13.62              | 0.10                     | 1.05                   |
| 2.47            | 0.63                | 13.63              | 0.20                     | 1.13                   |
| 2.48            | 0.63                | 13.62              | 0.29                     | 1.18                   |
| 2.49            | 0.64                | 13.62              | 0.39                     | 1.28                   |
| 2.50            | 0.64                | 13.62              | 0.48                     | 1.29                   |

\*\* Measured with Agilent E5071B network analyzer using impedance conversion and port extension.

**Configuration S**

REV. OR  
M172548  
BLNK2-252R+  
AV/CP/AM  
200924

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