



Mini-Circuits

SURFACE MOUNT

## RF Transformer

TC1-33-75G2+

75Ω 5 to 3000 MHz

## FEATURES

- Suitable for tin/lead and RoHS Solder Systems
- Wideband, 5 to 3000 MHz
- Balanced Transmission Line
- Good Return Loss, 20 dB Typ. at 1 dB Band
- Excellent Amplitude Unbalance, 0.3 dB Typ. and Phase Unbalance, 3 deg Typ. in 1 dB Bandwidth
- Aqueous Washable



Generic photo used for illustration purposes only

CASE STYLE: AT224-3

**+RoHS Compliant**

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

## APPLICATIONS

- Balanced to Unbalanced Transformation
- Push-pull Amplifiers
- PCS/DCS
- Cable TV
- Cellular

## ELECTRICAL SPECIFICATIONS AT +25°C

| Parameter                   | Condition   | Min. | Typ. | Max. | Unit   |
|-----------------------------|-------------|------|------|------|--------|
| Impedance Ratio             |             |      | 1    |      | Ohm    |
| Frequency Range             |             | 5    |      | 3000 | MHz    |
| Insertion Loss <sup>1</sup> | 2000 - 3000 |      | 3    |      | dB     |
|                             | 1200 - 2000 |      | 2    |      |        |
|                             | 5 - 1200    |      | 1    |      |        |
| Amplitude Unbalance         | 5 - 1200    |      | 0.3  |      | dB     |
|                             | 1200 - 2000 |      | 1.0  |      |        |
| Phase Unbalance             | 5 - 1200    |      | 3    |      | Degree |
|                             | 1200 - 2000 |      | 4    |      |        |

1. Insertion Loss is referenced to mid-band loss, 1.0 dB typ.

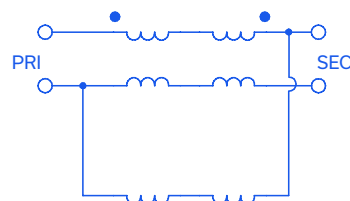
MAXIMUM RATINGS<sup>2,3</sup>

| Parameter             | Ratings        |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C  |
| Storage Temperature   | -55°C to 100°C |
| RF Power              | 0.25W          |
| DC Current            | 30mA           |

2. Permanent damage may occur if any of these limits are exceeded.

3. The unit has been assessed for survivability up to 105°C; there is no permanent damage.

## CONFIG. K



REV. C  
ECO-031061  
TC1-33-75G2+  
MCINU  
260903





# TC1-33-75G2+



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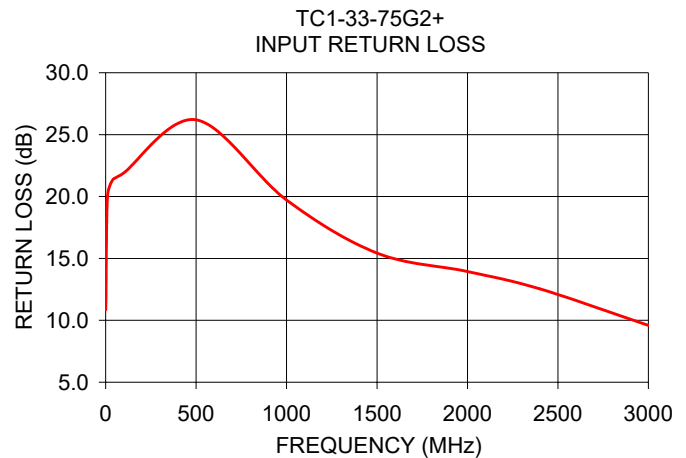
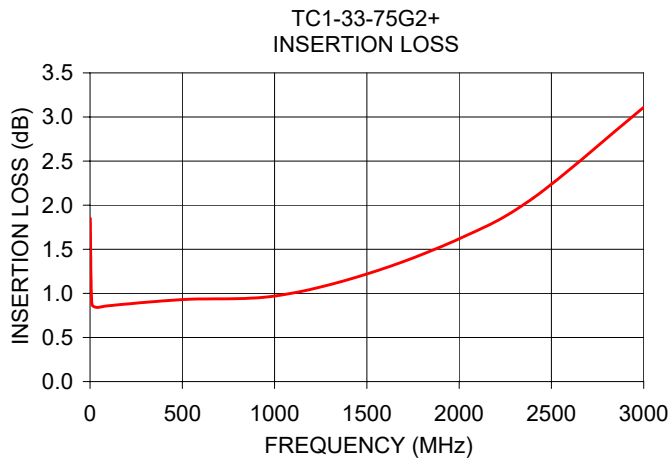
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## TYPICAL PERFORMANCE DATA

| FREQUENCY (MHz) | INSERTION LOSS (dB) | INPUT R. LOSS (dB) | AMPLITUDE UNBALANCE (dB) | PHASE UNBALANCE (Deg.) |
|-----------------|---------------------|--------------------|--------------------------|------------------------|
| 1.00            | 1.85                | 10.86              | 0.38                     | 2.91                   |
| 10.00           | 0.88                | 20.01              | 0.04                     | 0.84                   |
| 40.00           | 0.84                | 21.37              | 0.00                     | 0.58                   |
| 100.00          | 0.86                | 21.90              | 0.01                     | 0.92                   |
| 500.00          | 0.93                | 26.20              | 0.10                     | 3.63                   |
| 1000.00         | 0.97                | 19.72              | 0.18                     | 4.76                   |
| 1500.00         | 1.22                | 15.43              | 0.77                     | 3.62                   |
| 2000.00         | 1.62                | 13.94              | 1.40                     | 0.56                   |
| 2400.00         | 2.08                | 12.54              | 1.84                     | 4.10                   |
| 3000.00         | 3.11                | 9.59               | 2.06                     | 12.70                  |



## NOTES

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- The parts covered by this specification document are subject to Mini-Circuits standard limited warranty and terms and conditions (collectively, "Standard Terms"); Purchasers of this part are entitled to the rights and benefits contained therein. For a full statement of the standard terms and the exclusive rights and remedies thereunder, please visit Mini-Circuits' website at [www.minicircuits.com/terms/viewterm.html](http://www.minicircuits.com/terms/viewterm.html)

