



THE DATASHEET OF TC1-1TG2+





SURFACE MOUNT

RF Transformer

TC1-1TG2+

Mini-Circuits

50Ω 0.4 to 500 MHz

FEATURES

- Suitable for tin/lead and RoHS solder systems
- Usable over 0.4-500 MHz
- Excellent amplitude unbalance, 0.1 dB typ. and phase unbalance, 2 deg typ. in 1 dB bandwidth
- Good return loss
- 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

- VHF/UHF receivers/transmitters
- Push-pull amplifiers

ELECTRICAL SPECIFICATIONS AT 25°C

| Parameter | Frequency (MHz) | Min. | Typ. | Max. | Unit |
|---------------------|-----------------|------|------|------|------|
| Impedance Ratio | | | 1 | | |
| Frequency Range | | 0.4 | | 500 | MHz |
| Insertion Loss* | 04-500 | | 3 | | dB |
| | 0.5-300 | | 2 | | |
| | 1-100 | | 1 | | |
| Phase Unbalance | 1-100 | | 2 | | Deg. |
| | 0.5-300 | | 5 | | |
| Amplitude Unbalance | 1-100 | | 0.1 | | dB |
| | 0.5-300 | | 0.6 | | |

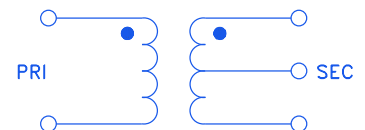
* Insertion Loss is referenced to mid-band loss, 0.6 dB typ.

MAXIMUM RATINGS

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

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

CONFIG. A



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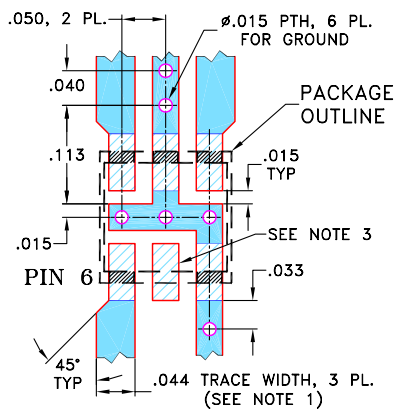


PIN CONNECTIONS

| | |
|---------------|---|
| PRIMARY DOT | 6 |
| PRIMARY | 4 |
| SECONDARY DOT | 1 |
| SECONDARY | 3 |
| SECONDARY CT | 2 |

PRODUCT MARKING: N/A

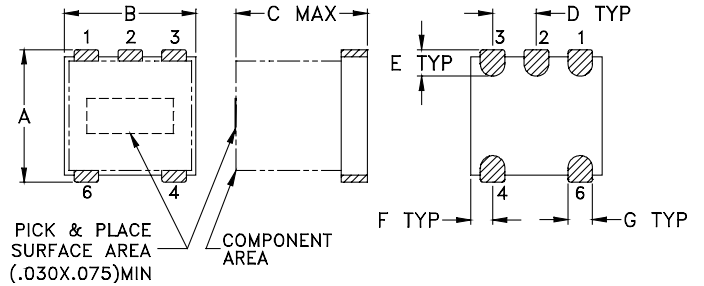
DEMO BOARD MCL P/N: TB-145
SUGGESTED PCB LAYOUT: PL-244



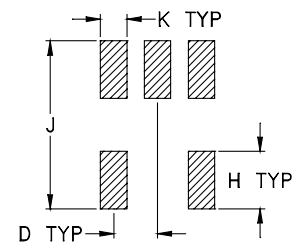
1. TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. ON EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
3. THIS PAD IS NOT REQUIRED FOR AT224 CASE STYLE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
 DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

OUTLINE DRAWING



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

OUTLINE DIMENSIONS (Inch mm)

| | | | | | |
|------|------|------|------|------|-------|
| A | B | C | D | E | F |
| .150 | .150 | .150 | .050 | .030 | .025 |
| 3.81 | 3.81 | 3.81 | 1.27 | 0.76 | 0.64 |
| G | H | J | K | | wt |
| .028 | .065 | .190 | .030 | | grams |
| 0.71 | 1.65 | 4.83 | 0.76 | | 0.10 |

TAPE & REEL INFORMATION: F17



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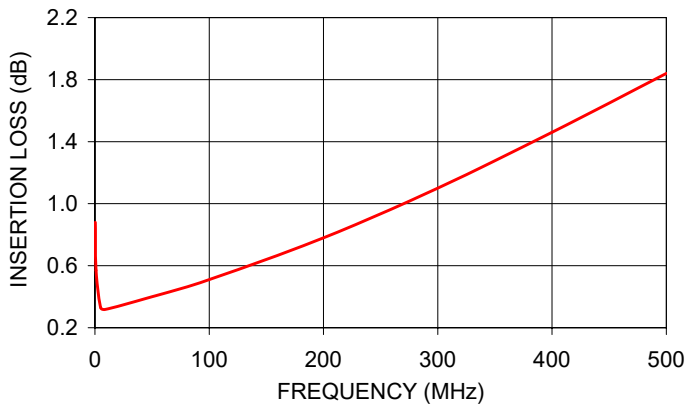
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50Ω 0.4 to 500 MHz

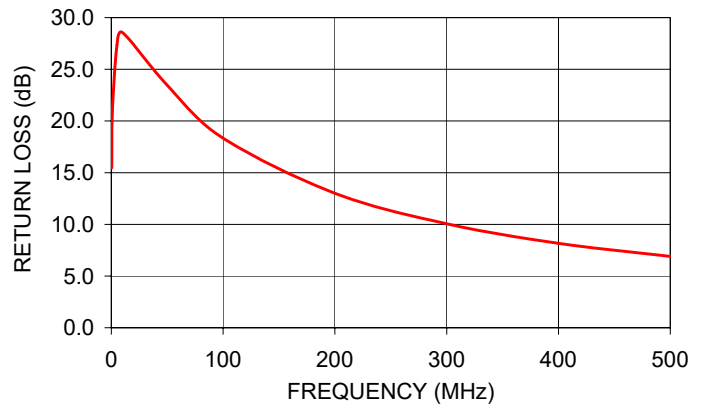
TYPICAL PERFORMANCE DATA

| FREQUENCY (MHz) | INSERTION LOSS (dB) | INPUT R. LOSS (dB) | AMPLITUDE UNBALANCE (dB) | PHASE UNBALANCE (Deg.) |
|-----------------|---------------------|--------------------|--------------------------|------------------------|
| 0.30 | 0.88 | 15.46 | 0.06 | 0.03 |
| 1.00 | 0.57 | 21.01 | 0.04 | 0.05 |
| 5.00 | 0.33 | 27.35 | 0.02 | 0.01 |
| 10.00 | 0.32 | 28.55 | 0.02 | 0.15 |
| 50.00 | 0.40 | 23.46 | 0.02 | 0.63 |
| 100.00 | 0.51 | 18.34 | 0.06 | 1.24 |
| 200.00 | 0.78 | 13.01 | 0.21 | 2.57 |
| 300.00 | 1.10 | 10.06 | 0.47 | 3.99 |
| 400.00 | 1.46 | 8.16 | 0.82 | 5.66 |
| 500.00 | 1.84 | 6.90 | 1.26 | 7.50 |

INSERTION LOSS



INPUT RETURN LOSS



- 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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