

Surface Mount RF Transformer

50Ω 0.4 to 500 MHz

TC1-1T+



Generic photo used for illustration purposes only

CASE STYLE: AT224-1A

+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 |
| 13" | 1000, 2000 |

Features

- 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
- plastic base with leads
- aqueous washable

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

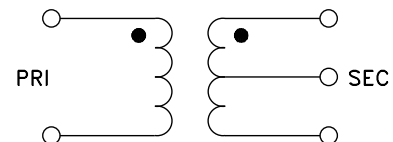
| Parameter | Ratings |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C |
| Storage Temperature | -55°C to 100°C |
| RF Power | 0.25W |
| DC Current | 30mA |

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

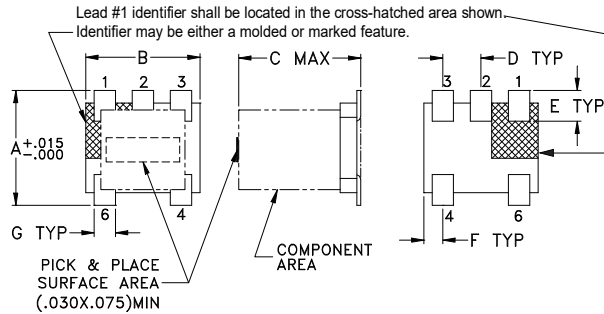
Pin Connections

| Function | Pin Number |
|---------------|------------|
| PRIMARY DOT | 6 |
| PRIMARY | 4 |
| SECONDARY DOT | 1 |
| SECONDARY | 3 |
| SECONDARY CT | 2 |
| NOT USED | 5 |

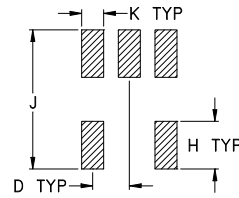
Config. A



Outline Drawing



PCB Land Pattern



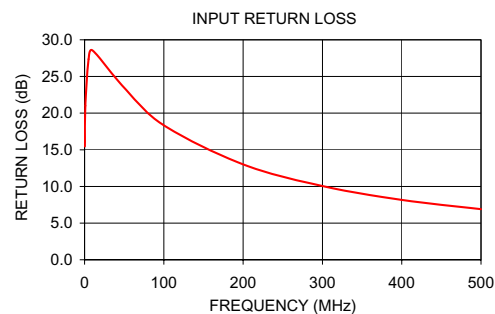
Suggested Layout,
Tolerance to be within ± 0.02

Outline Dimensions (inch/mm)

| A | B | C | D | E | F |
|------|------|------|------|-------|------|
| .150 | .150 | .160 | .050 | .040 | .025 |
| 3.81 | 3.81 | 4.06 | 1.27 | 1.02 | 0.64 |
| G | H | J | K | wt | |
| .028 | .065 | .190 | .030 | grams | |
| 0.71 | 1.65 | 4.83 | 0.76 | 0.15 | |

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 |



Additional 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.
- C. 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/MCLStore/terms.jsp