



SURFACE MOUNT

RF Transformer

TC4-19+

TC4-19X+
Upgraded Version*

Mini-Circuits

50Ω 10 to 1900 MHz

- *Addition of Top Hat® feature Benefits**
- Allows faster pick-and-place
 - Enables visual identification marking

FEATURES

- Wideband, 10-1900 MHz
- Balanced transmission line with secondary center tap
- Plastic base with leads
- Aqueous washable



Generic photo used for illustration purposes only

CASE STYLE: AT224-1A

+RoHS Compliant

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

APPLICATIONS

- PCS
- Cellular

ELECTRICAL SPECIFICATIONS AT 25°C

| Parameter | Frequency (MHz) | Min. | Typ. | Max. | Unit |
|---------------------------------------|-----------------|------|------|------|--------|
| Impedance Ratio (secondary / primary) | | | 4 | | |
| Frequency Range | | 10 | | 1900 | MHz |
| Insertion Loss* | 10-1900 | | 3 | | dB |
| | 20-1000 | | 2 | | |
| | 30-700 | | 1 | | |
| Amplitude Unbalance | 30-700 | | 0.3 | | dB |
| | 20-1000 | | 0.5 | | |
| Phase Unbalance | 30-700 | | 4 | | Degree |
| | 20-1000 | | 6 | | |

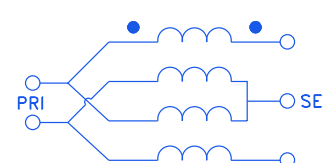
* Insertion Loss is referenced to mid-band loss, 1.0 dB typ.

MAXIMUM RATINGS

| Parameter | Ratings |
|-----------------------|----------------|
| Operating Temperature | -20°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. H



REV. B
ECO-015303
TC4-19+
MCL NY
220906



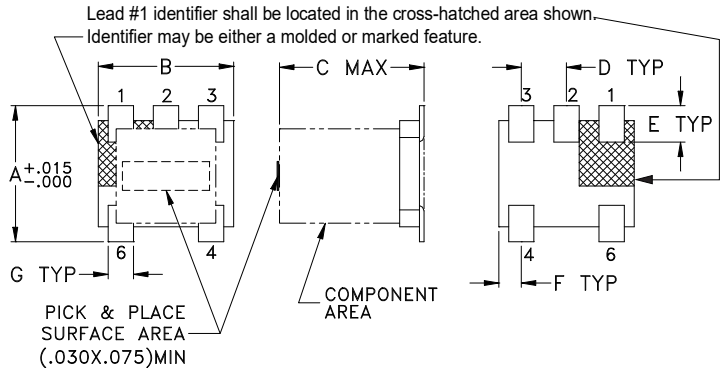


PIN CONNECTIONS

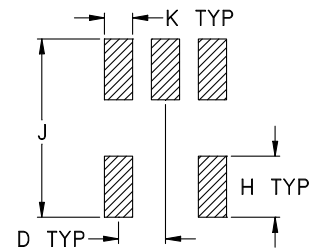
| | |
|---------------|---|
| PRIMARY DOT | 6 |
| PRIMARY | 4 |
| SECONDARY DOT | 3 |
| SECONDARY | 1 |
| SECONDARY CT | 2 |

PRODUCT MARKING: NA

OUTLINE DRAWING



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

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 | |

TAPE & REEL INFORMATION: F17



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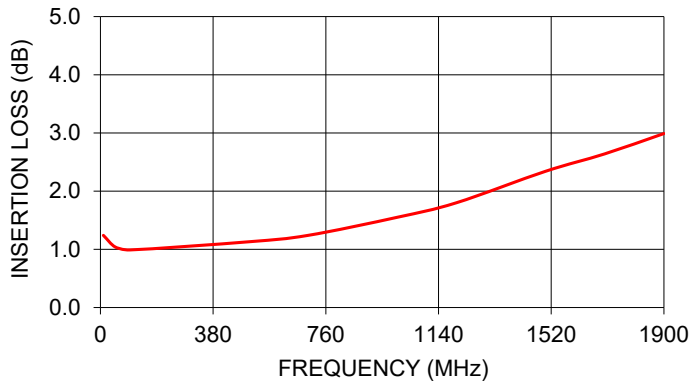
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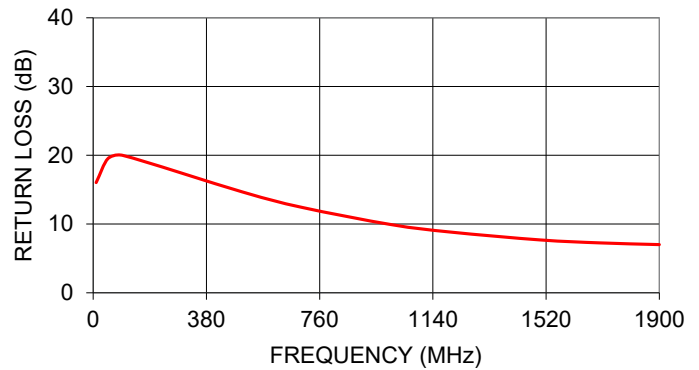
TYPICAL PERFORMANCE DATA

| FREQUENCY (MHz) | INSERTION LOSS (dB) | INPUT R. LOSS (dB) | AMPLITUDE UNBALANCE (dB) | PHASE UNBALANCE (deg.) |
|-----------------|---------------------|--------------------|--------------------------|------------------------|
| 10.00 | 1.24 | 16.03 | 0.06 | 0.03 |
| 50.00 | 1.04 | 19.54 | 0.04 | 0.39 |
| 100.00 | 0.99 | 19.98 | 0.01 | 0.83 |
| 500.00 | 1.13 | 14.68 | 0.02 | 3.20 |
| 700.00 | 1.24 | 12.43 | 0.17 | 3.49 |
| 1000.00 | 1.55 | 9.92 | 0.49 | 3.74 |
| 1200.00 | 1.80 | 8.83 | 0.85 | 3.53 |
| 1500.00 | 2.34 | 7.69 | 1.47 | 3.59 |
| 1700.00 | 2.64 | 7.26 | 1.74 | 4.43 |
| 1900.00 | 2.99 | 7.01 | 1.95 | 4.99 |

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.
- 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/terms/viewterm.html



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