

Surface Mount **RF Transformer**



**TC16-161TX+**

50Ω 0.6 to 160 MHz



CASE STYLE: AT1521

**Maximum 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**

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

**Features**

- plastic base with solder plated leads
- excellent amplitude unbalance, 0.1dB typ. and phase unbalance, 0.5 deg. typ.

**Applications**

- impedance matching
- balanced amplifier

**+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

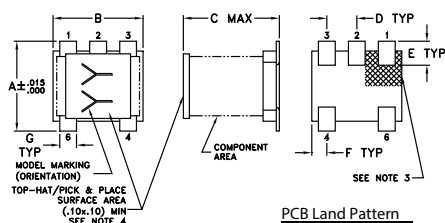
| Reel Size | Devices/Reel          |
|-----------|-----------------------|
| 7"        | 20, 50, 100, 200, 500 |
| 13"       | 1000, 2000            |

**Transformer Electrical Specifications**

| Ω RATIO<br>(Secondary/Primary) | FREQUENCY<br>(MHz) | INSERTION LOSS* |          |          |
|--------------------------------|--------------------|-----------------|----------|----------|
|                                |                    | 3 dB MHz        | 2 dB MHz | 1 dB MHz |
| 16                             | 0.6-160            | 0.6-160         | 1.5-120  | 3-80     |

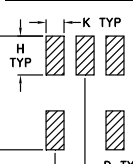
\* Insertion Loss is referenced to mid-band loss, 0.7 dB typ.

**Outline Drawing AT1521**

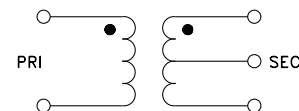


- Note:
1. Case Material Plastic
  2. Termination Finish: Tin plate over Nickel plate.
  3. Lead #1 identifier shall be located in the cross-hatched area shown, on bottom view. Identifier may be either a molded or marked feature.
  4. Top-Hat total thickness: 0.13 inches max.

**PCB Land Pattern**



**Config. A**



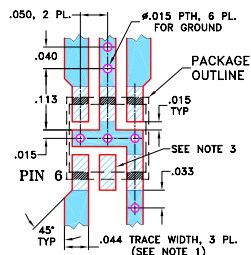
**Typical Performance Data**

| FREQUENCY (MHz) | INSERTION LOSS (dB) | INPUT R. LOSS (dB) |
|-----------------|---------------------|--------------------|
| 0.60            | 1.40                | 14.15              |
| 1.00            | 1.16                | 17.14              |
| 1.50            | 0.99                | 19.51              |
| 5.00            | 0.64                | 29.93              |
| 10.00           | 0.59                | 36.06              |
| 50.00           | 0.74                | 16.77              |
| 80.00           | 0.94                | 12.74              |
| 100.00          | 1.10                | 10.87              |
| 120.00          | 1.31                | 9.38               |
| 160.00          | 1.83                | 7.18               |

**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  |      |

**Demo Board MCL P/N: TB-145  
Suggested PCB Layout (PL-244)**



- NOTES:
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B 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

**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/MCLStore/terms.jsp](http://www.minicircuits.com/MCLStore/terms.jsp)



[www.minicircuits.com](http://www.minicircuits.com) P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

REV. A  
M151107  
TC16-161T+  
ED-7614/3  
IG/TD/CP/AM  
151222  
Page 1 of 1