SURFACE MOUNT

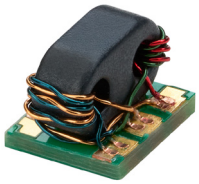
RF Transformer

TC1-182T-75H+

75Ω 5 to 1800 MHz 2 Watt

KEY FEATURES

- Wide Bandwidth 5 to 1800 MHz
- Balanced Transmission line with center-tap for DC input
- Power Handling 2 watts

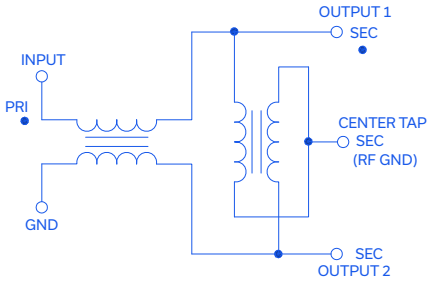


Generic photo used for illustration purposes only

APPLICATIONS

- PCS/DCS
- Wideband push-pull amplifiers
- Cellular
- DOCSIS® 4.0 & 3.1
- Cable TV

CONFIGURATION M1



PRODUCT OVERVIEW

Mini-Circuits' TC1-182T-75H+ is a 75Ω surface-mount transmission line transformer covering a wide range of applications from 5 to 1800 MHz. The transformer provides input power handling up to 2 watts, low insertion loss, good input return loss and low amplitude and phase unbalance. Featuring core and wire construction on a small PCB, the unit measures 0.212 x 0.170 x 0.144", accommodating dense circuit board layouts.

ELECTRICAL SPECIFICATIONS[1] AT +25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Impedance Ratio			1		:1
Frequency Range		5		1800	MHz
Insertion Loss	5 - 1218 1218 - 1800		0.7 1.5	1.0 2.4	dB
Amplitude Unbalance	5 - 1218 1218 - 1800		0.8 1.4	1.5 2.4	dB
Phase Unbalance	5 - 1218 1218 - 1800		3 5	6 10	Degrees
Return Loss (Primary)	5 - 800 800 - 1218 1218 - 1800		18 16 14		dB

1. Tested in Evaluation Board P/N TB-TC1-182T75H+.

ABSOLUTE MAXIMUM RATINGS[2]

Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
Input Power	2 W
DC Current	400 mA

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

REV. OR
ECO-025718
TC1-182T-75H+
MCL NY
250919

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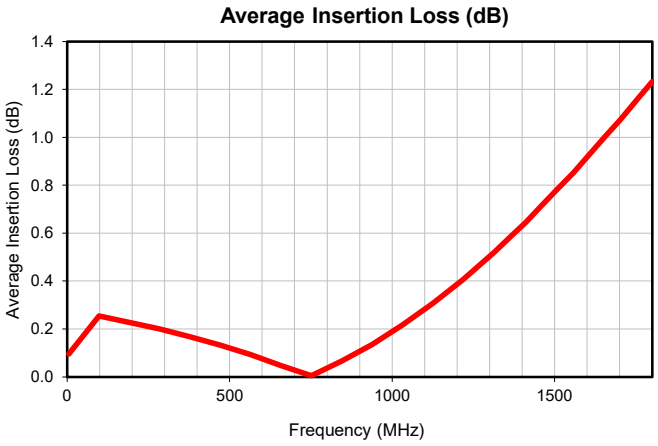
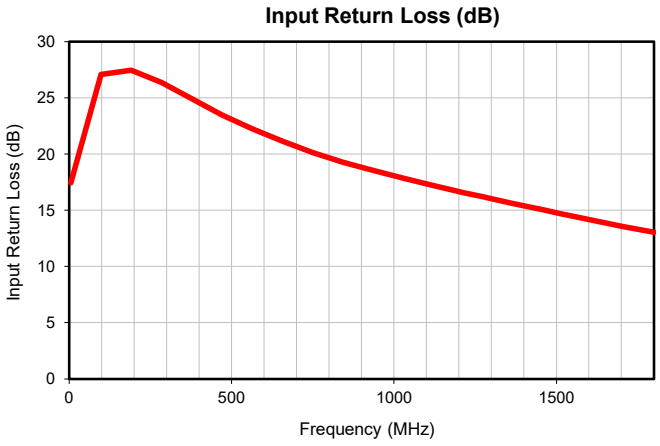
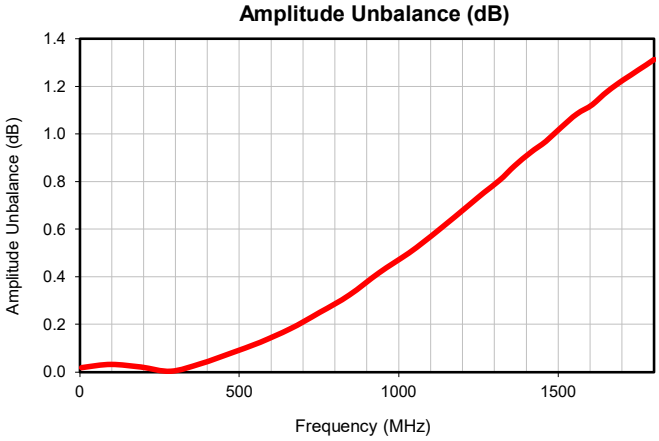
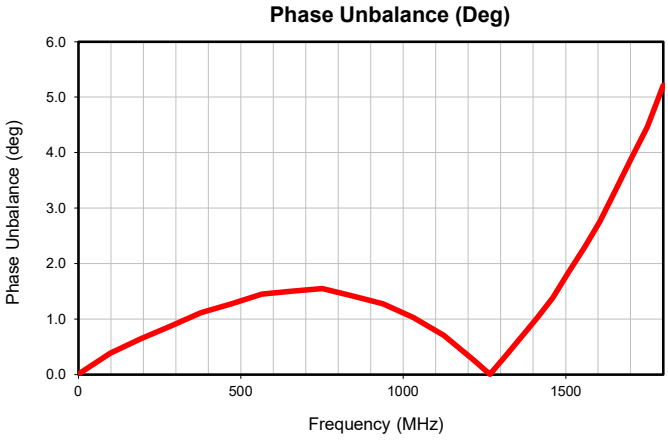
TYPICAL PERFORMANCE GRAPHS









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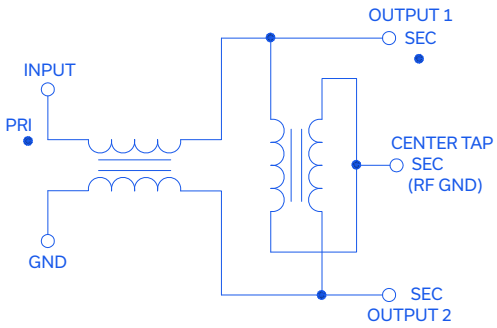
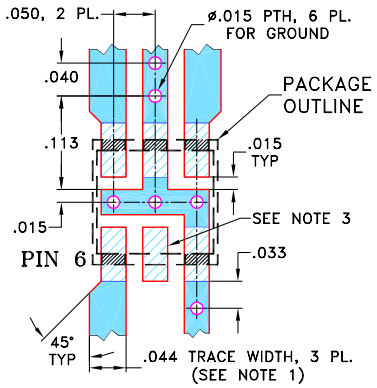


Figure 1. TC1-182T-75H+ Configuration

PAD DESCRIPTION

Function	Pad Number	Description
Primary Dot	4	RF-IN
Primary	5	GND
Secondary Dot	3	Out 1
Secondary	1	Out 2
Secondary Center-Tap	2	RF GND

SUGGESTED PCB LAYOUT (PL-244)



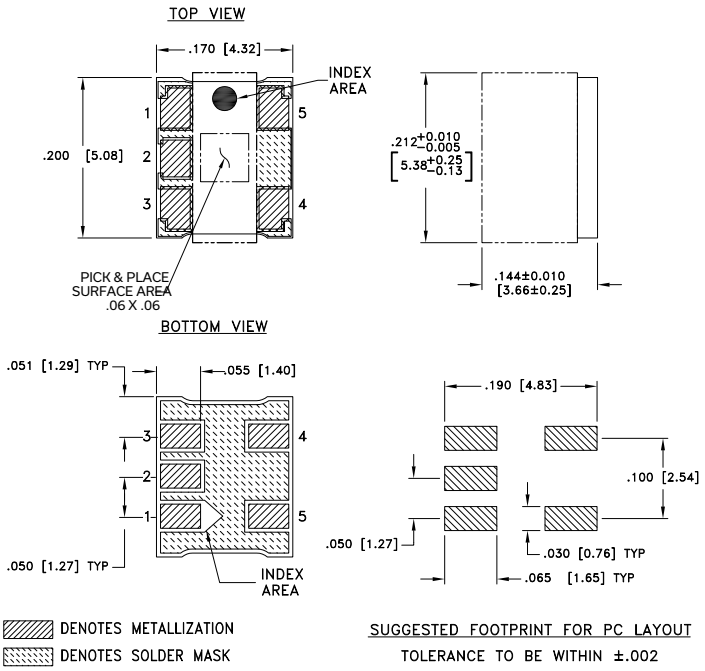
1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. ON EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.
3. THIS PAD IS NOT REQUIRED FOR AT224 CASE STYLE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Figure 2. Suggested PCB Layout PL-244

CASE STYLE DRAWING



Weight: .2 grams
Dimensions are in inches (mm). Tolerances: 2 Pl. ±.01; 3 Pl. ±.005
Orientation Dot on Unit corresponds to Pin #1.

PRODUCT MARKING*: N/A

*Marking may contain other features or characters for internal lot control.

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ADDITIONAL DETAILED INFORMATION IS AVAILABLE ON OUR DASHBOARD. CLICK HERE

Performance Data & Graphs	Data Graphs S-Parameter (S3P Files) Data Set (.zip file) De-embedded to device pads
Case Style	TT3628-1 Lead Finish: Gold over nickel
RoHS Status	Compliant
Tape and Reel	TR-F017
Suggested Layout for PCB Design	PL-244
Evaluation Board	TB-TC1-182T75H+ Gerber File
Environmental Rating	ENV02T1

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-Circuits' 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