Balanced to Unbalanced top hat®

RF Transformer

TC1.33-152X-2+

100 to 75Ω 5 to 1800 MHz

Features

- suitable for tin/lead and RoHS solder systems
- wideband, 5 to1800 MHz
- balanced transmission line
- good return loss, 20 dB typ. at 1 dB band
- excellent amplitude unbalance, 0.3 dB typ.
- aqueous washable

Generic photo used for illustration purposes only

CASE STYLE: AT1521

+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

Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio *(secondary/primary)*			1.33		Ohm
Frequency Range		5		1800	MHz
Insertion Loss*	5 - 1800		1.2	2.3	dB
Amplitude Unbalance	5 - 1200 1200 - 1800		0.4 1.3	1.0 2.1	dB
Phase Unbalance	5 - 1800		5	10	Degree

* Insertion Loss is referenced to mid-band loss, 1.0 dB typ. Measured in 75Ω system.

Maximum Ratings

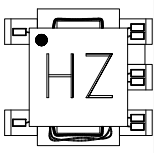
Parameter	Ratings
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	0.25W
DC Current	30mA

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

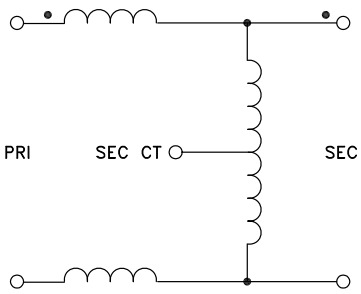
Pin Connections

Function	Pin Number
PRIMARY DOT	6
PRIMARY	4
SECONDARY DOT	1
SECONDARY	3
SECONDARY CT	2

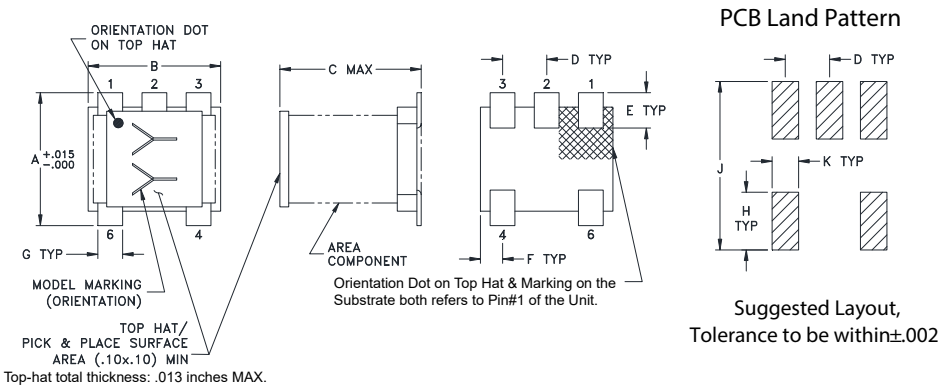
Product Marking



Config. M1



Outline Drawing

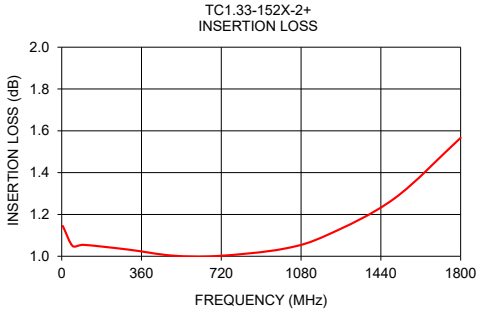


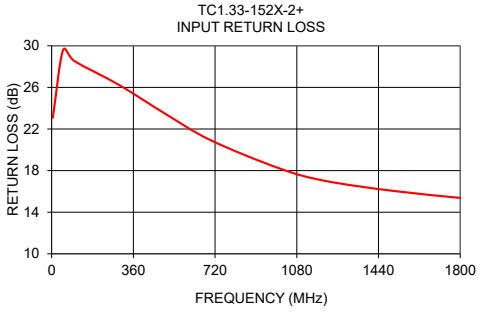
Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J
.150	.150	.160	.050	.040	.025	.028	.065	.190
3.81	3.81	4.06	1.27	1.02	0.64	0.71	1.65	4.83

Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
5.00	1.14	23.07	0.03	0.23
50.00	1.05	29.55	0.02	0.15
100.00	1.05	28.53	0.02	0.40
300.00	1.03	26.20	0.01	1.08
500.00	1.00	23.47	0.04	1.52
700.00	1.00	20.93	0.14	1.70
1000.00	1.04	18.24	0.34	1.77
1200.00	1.10	17.03	0.56	1.42
1500.00	1.28	16.06	1.09	0.80
1800.00	1.57	15.38	1.68	0.55





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