SURFACE MOUNT top hat

RF Transformer

TCM1-83X+

50Ω 10 to 8000 MHz

FEATURES

- Ultra wide bandwidth 10 to 8000 MHz
- One model covers all telecommunication bands
- Flat insertion loss
- Good return loss
- Aqueous washable
- Protected by US Patent 9,071,229B1



Generic photo used for illustration purposes only

CASE STYLE: DB1627

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

APPLICATIONS

- Differential modulator/demodulator and active mixers
- Wideband push-pull amplifiers
- LTE, Cellular, PCS, UMTS, WiFi, WiMAX

ELECTRICAL SPECIFICATIONS AT 25°C

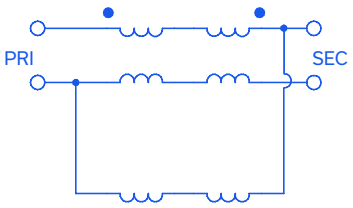
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Impedance Ratio			1		
Frequency Range		10	–	8000	MHz
Insertion Loss	10-6000	–	1.3	2.5	dB
	6000-8000	–	1.3	3.0	
Amplitude Unbalance	10-6000	–	0.5	–	dB
	6000-8000	–	1.1	–	
Phase Unbalance	10-6000	–	8	–	Degree
	6000-8000	–	4	–	

MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	0.2W
DC Current	30mA

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

CONFIGURATION K



Mini-Circuits
www.minicircuits.com P.O. Box 350166, Brooklyn, NY 11235-0003 (718) 934-4500 sales@minicircuits.com

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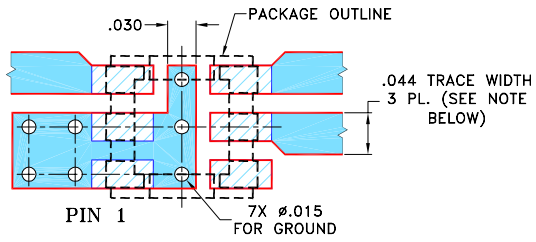
50Ω 10 to 8000 MHz

PIN CONNECTIONS

PRIMARY DOT	3
PRIMARY	2
SECONDARY DOT	5
SECONDARY	4
GND	2
NOT USED	1,6

PRODUCT MARKING: HA

DEMOBOARD MCL P/N: TB-717+
SUGGESTED PCB LAYOUT (PL-395)

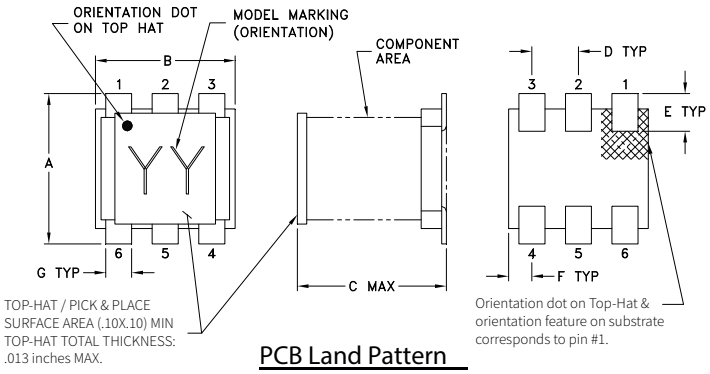


NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

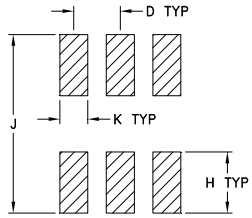
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

OUTLINE DRAWING



PCB Land Pattern



SUGGESTED LAYOUT
TOLERANCE TO BE WITHIN ±.002

OUTLINE DIMENSIONS (Inches / mm)

A	B	C	D	E	F
.160	.150	.160	.050	.040	.025
4.06	3.81	4.06	1.27	1.02	0.64

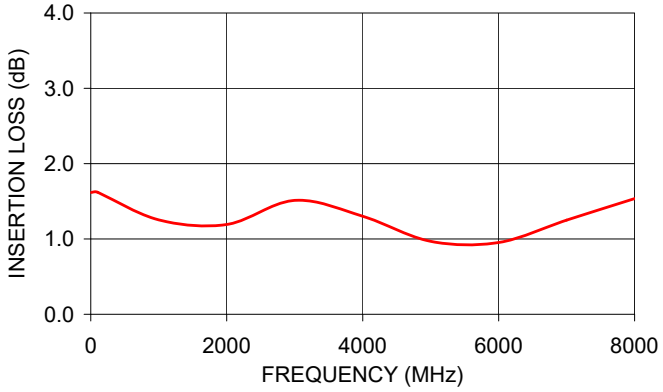
G	H	J	K		wt
.028	.065	.190	.030		grams
0.71	1.65	4.83	0.76		0.15

TAPE & REEL INFORMATION: F47

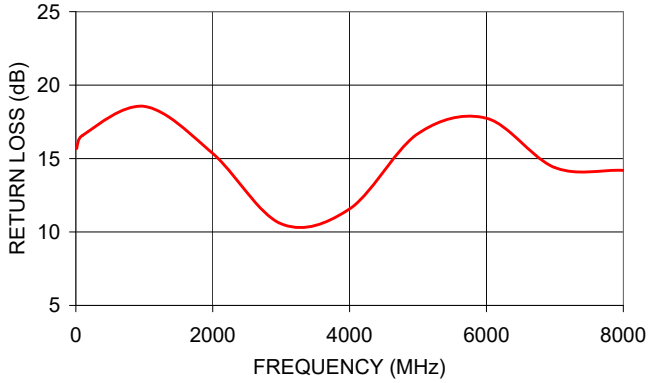
TYPICAL PERFORMANCE DATA

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	Amplitude Unbalance (dB)	Phase Unbalance (deg)
10	1.62	15.68	0.14	0.26
100	1.62	16.58	0.15	1.19
1000	1.25	18.55	0.55	7.54
2000	1.19	15.35	0.59	11.37
3000	1.51	10.56	0.54	13.02
4000	1.30	11.57	0.21	11.93
5000	0.97	16.70	0.31	9.77
6000	0.95	17.74	0.76	5.81
7000	1.25	14.39	1.14	0.67
8000	1.54	14.19	1.32	4.03

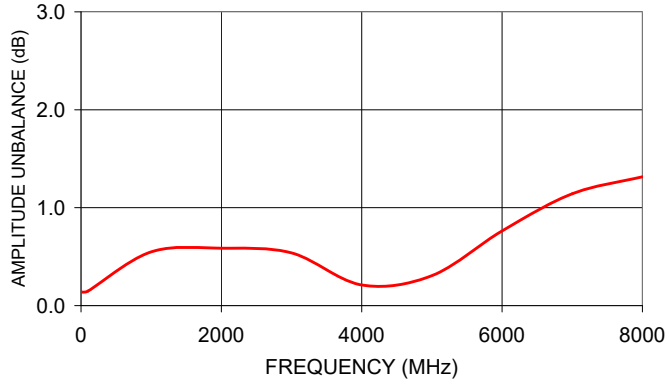
TCM1-83X+
INSERTION LOSS



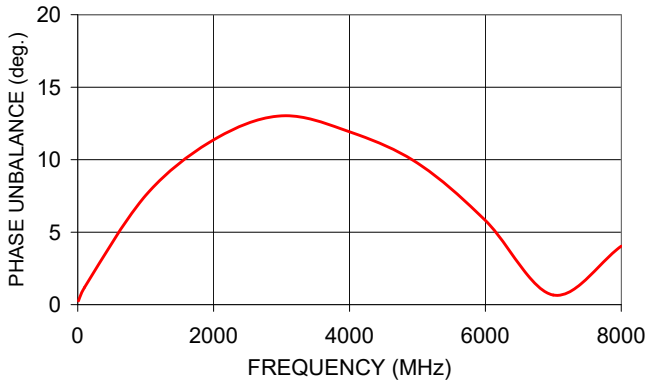
TCM1-83X+
INPUT RETURN LOSS



TCM1-83X+
AMPLITUDE UNBALANCE



TCM1-83X+
PHASE UNBALANCE



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