top hat®

Surface Mount

RF Transformer

TCM1-83X+

50Ω 10 to 8000 MHz

Generic photo used for illustration purposes only

CASE STYLE: DB1627

+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

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

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.	Unit
Impedance Ratio			1		
Frequency Range		10		8000	MHz
Insertion Loss	10-6000 6000-8000	—	1.3 1.3	2.5 3.0	dB
Amplitude Unbalance	10-6000 6000-8000	— —	0.5 1.1	— —	dB
Phase Unbalance	10-6000 6000-8000	— —	8 4	— —	Degree

Maximum Ratings

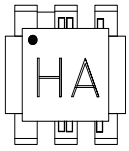
Parameter	Ratings
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	0.2W
DC Current	30mA

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

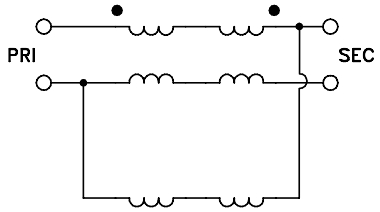
Pin Connections

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

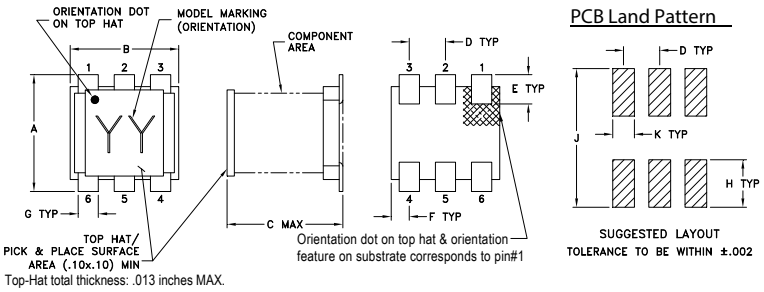
Product Marking



Config. K



Outline Drawing

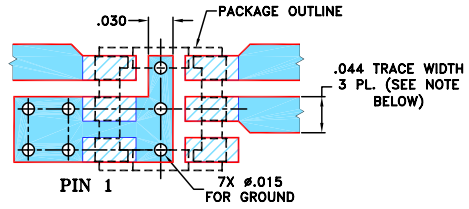


Outline Dimensions (inch / mm)

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

Demo Board MCL P/N: TB-717+
Suggested PCB Layout (PL-395)



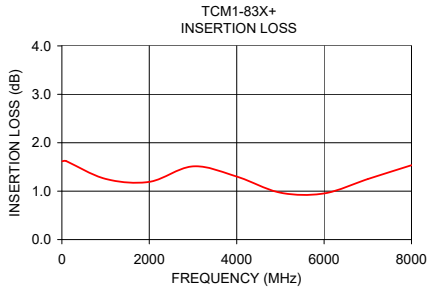
NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

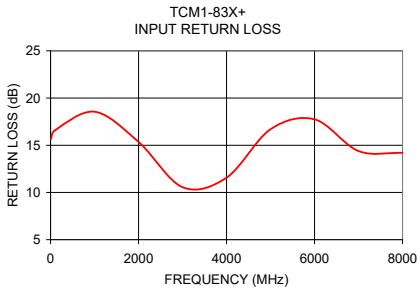
DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

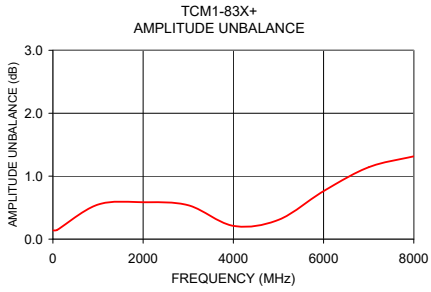
DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

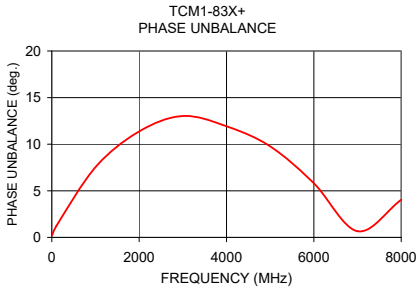
Typical Performance Data

Frequency (MHz)	Insertion Loss (dB)	Input R. 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









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

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Mini-Circuits:

TCM1-83X+