SURFACE MOUNT top hat®

RF Transformer

TCM2-33WX-2+

50Ω 10 to 3000 MHz

FEATURES

- Wide Bandwidth, 10 to 3000 MHz
- Balanced Transmission Line
- Excellent Return Loss
- Aqueous Washable
- Patent Pending



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

- PCS
- Wideband Push-Pull Amplifiers
- Cellular

ELECTRICAL SPECIFICATIONS AT +25°C

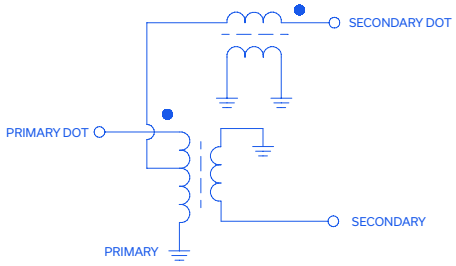
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Impedance Ratio (Secondary/Primary)			2		
Frequency Range		10		3000	MHz
Insertion Loss[1]	10-3000		1.5	3.0	dB
Amplitude Unbalance	10-3000		0.7		dB
Phase Unbalance	10-3000		4		Degree

1. Insertion Loss is referenced to mid-band loss, 0.8 dB typ.

ABSOLUTE MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-40°C to +85°C
Storage Temperature	-55°C to +100°C
RF Power	0.4 W
DC Current	30 mA

CONFIGURATION N



REV. A
ECO-013842
TCM2-33WX-2+
MCL NY
251120

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PIN CONNECTIONS[2]

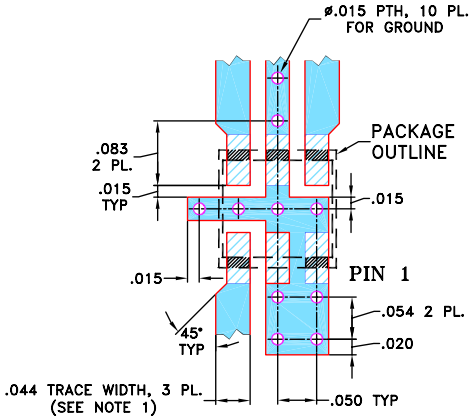
PRIMARY DOT	6
PRIMARY	2
SECONDARY DOT	4
SECONDARY	3
GND	2,5
NOT USED	1

2. We recommend grounding the primary (Pin 2) as shown in PL-364.

PRODUCT MARKING: GT

DEMO BOARD MCL P/N: TB-TCM2-33WX-2+

SUGGESTED PCB LAYOUT (PL-364)



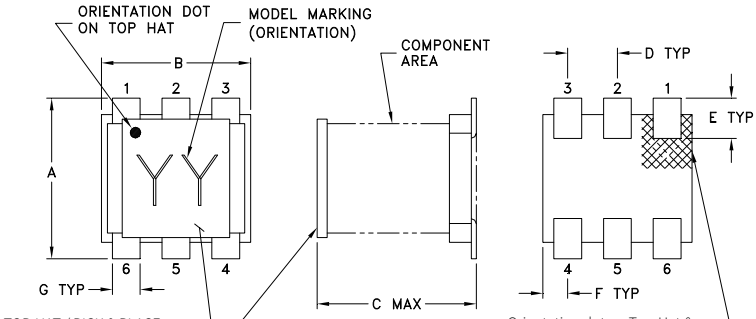
NOTES: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. ON EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.

2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

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

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

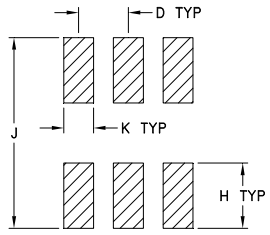
OUTLINE DRAWING



TOP-HAT / PICK & PLACE SURFACE AREA (.10X.10) MIN
TOP-HAT TOTAL THICKNESS: .013 inches MAX.

Orientation dot on Top-Hat & orientation feature on substrate corresponds to pin #1.

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

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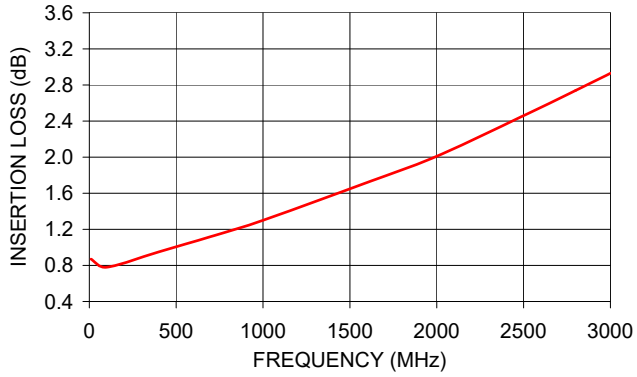
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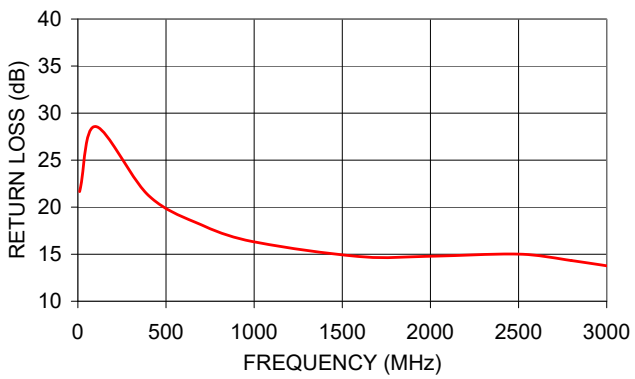
TYPICAL PERFORMANCE DATA

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	Amplitude Unbalance (dB)	Phase Unbalance (deg)
10	0.87	21.66	0.03	0.01
100	0.78	28.58	0.03	0.04
400	0.95	21.26	0.05	0.82
700	1.12	18.13	0.12	0.83
1000	1.30	16.31	0.26	0.62
1600	1.72	14.75	0.74	1.70
2000	2.01	14.79	0.90	2.62
2500	2.46	15.01	0.79	1.26
2800	2.74	14.33	0.64	0.80
3000	2.93	13.77	0.54	1.09

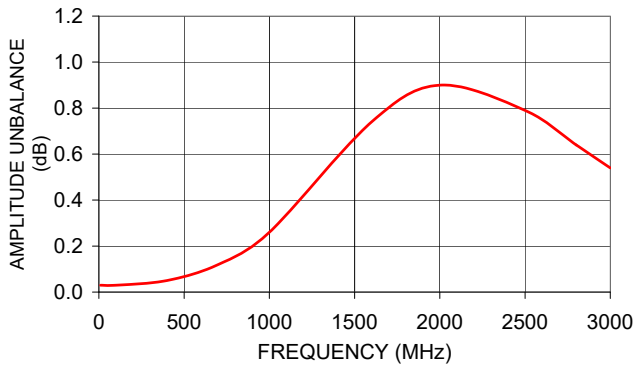
INSERTION LOSS



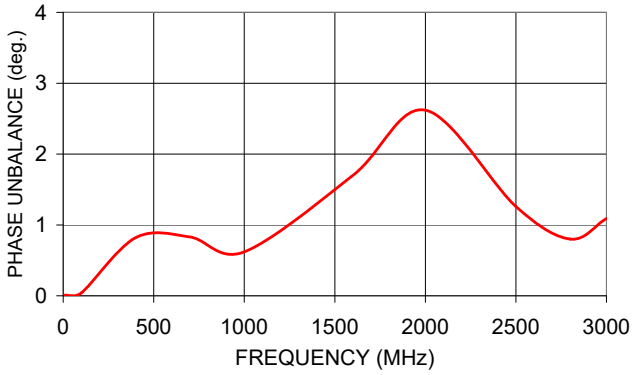
INPUT RETURN LOSS



AMPLITUDE UNBALANCE



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.

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