



Mini-Circuits®

SURFACE MOUNT 

RF Transformer

TCM2-33X+

50Ω

30 to 3000 MHz

FEATURES

- Wide Bandwidth 30 to 3000 MHz
- Balanced Transmission Line
- Excellent Return Loss
- Aqueous Washable
- Protected by US Patent 8,576,037



Generic photo used for illustration purposes only

CASE STYLE: DB1627

APPLICATIONS

- PCS
- Wideband Push-Pull Amplifiers
- Cellular

+RoHS Compliant

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

ELECTRICAL SPECIFICATIONS AT +25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Units
Impedance Ratio (Secondary/Primary)		2			
Frequency Range		30		3000	MHz
Insertion Loss ¹	30-3000		1.5	3.0	dB
Amplitude Unbalance	30-3000		0.5	—	dB
Phase Unbalance	30-3000		4	—	Degree

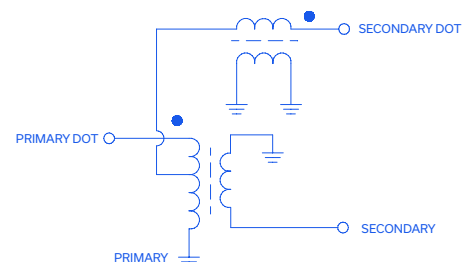
1. Insertion Loss is referenced to mid-band loss, 0.8 dB typ.

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

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

CONFIGURATION N



REV. B
ECO-013812
TCM2-33X+
MCL NY
251120



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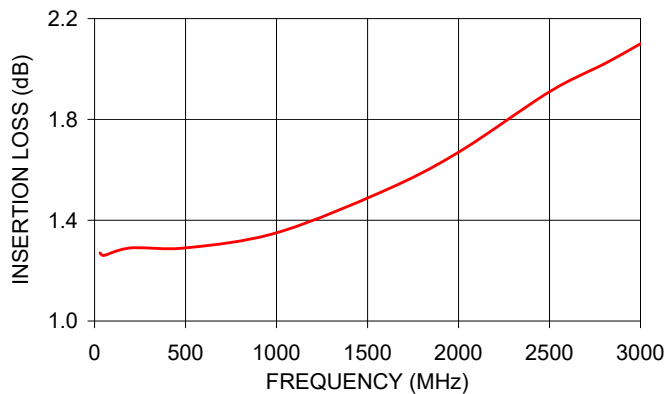
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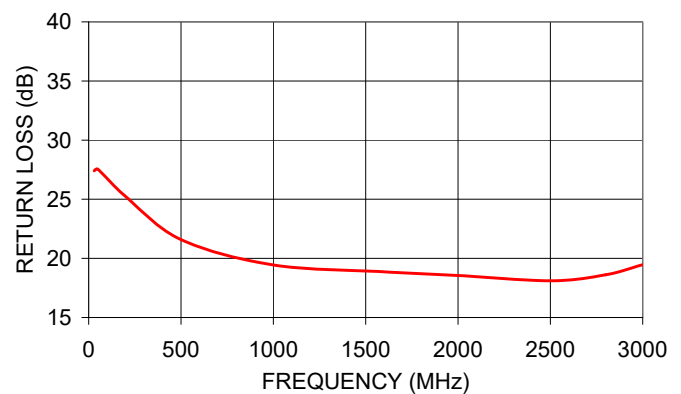
TYPICAL PERFORMANCE DATA

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	Amplitude Unbalance (dB)	Phase Unbalance (deg)
30	1.27	27.41	0.04	0.10
50	1.26	27.54	0.03	0.16
200	1.29	25.23	0.08	0.68
500	1.29	21.59	0.21	0.86
1000	1.35	19.44	0.17	0.96
1600	1.52	18.86	0.41	2.96
2000	1.67	18.55	0.68	3.79
2500	1.91	18.11	0.97	4.02
2800	2.02	18.61	1.07	4.52
3000	2.10	19.46	1.10	5.38

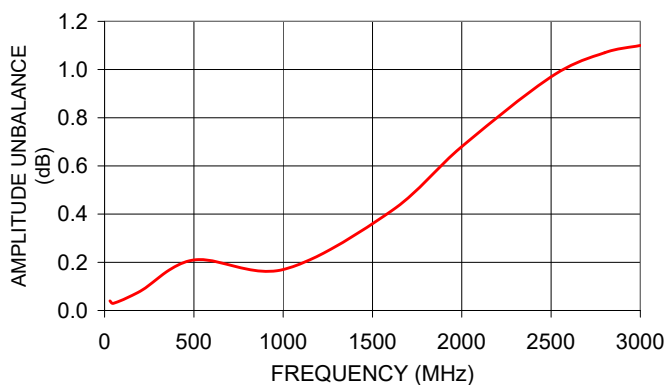
INSERTION LOSS



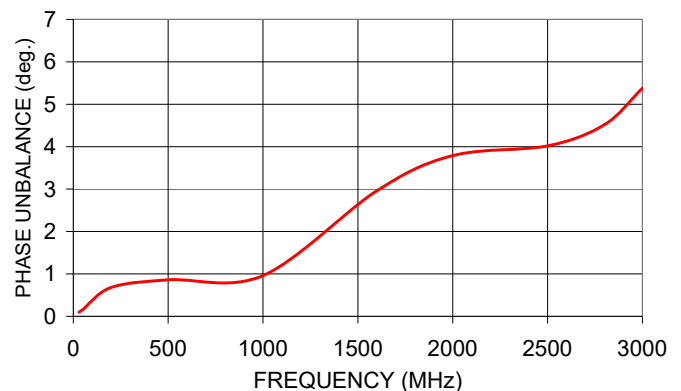
INPUT RETURN LOSS



AMPLITUDE UNBALANCE



PHASE UNBALANCE



NOTES

- 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.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
- 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

