



Mini-Circuits

top hat[®]
SURFACE MOUNT
RF Transformer

50Ω 0.5 to 400 MHz

TTCM4-4X+

FEATURES

- Wideband, 0.5 to 400 MHz
- Excellent amplitude (0.1 dB typ.) and phase unbalance (1° typ.)
- Plastic base with solder plated leads
- Aqueous washable

APPLICATIONS

- Impedance matching



Generic photo used for illustration purposes only

CASE STYLE: DB1627

+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)			4		Ohm
Frequency Range		0.5		400	MHz
Insertion Loss	0.5 - 400	—	3	—	dB
	1.3 - 160	—	2	—	
	5 - 100	—	1	—	
Amplitude Unbalance	5 - 100	—	0.1	—	dB
	1.3 - 160	—	0.1	—	
Phase Unbalance	5 - 100	—	1	—	Degree
	1.3 - 160	—	1	—	

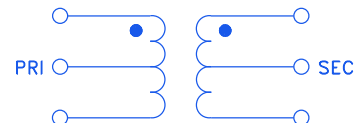
* Insertion Loss is referenced to mid-band loss, 0.65 dB typ.

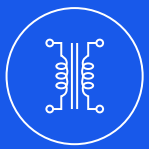
MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-20°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	250 mW
DC Current	30 mA

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

CONFIGURATION B



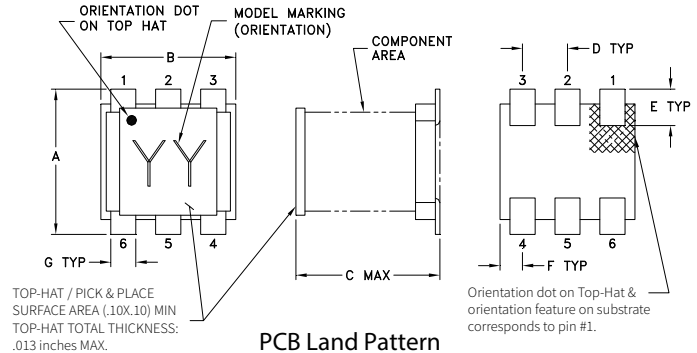
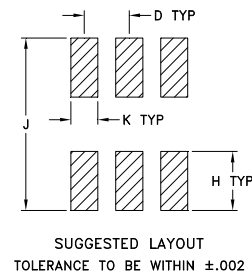


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TTCM4-4X+**50Ω****0.5 to 400 MHz****PIN CONNECTIONS**

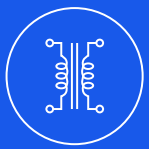
PRIMARY DOT	4
PRIMARY	6
PRIMARY CT	5**
SECONDARY DOT	3
SECONDARY	1
SECONDARY CT	2

** Used only in balanced to balanced configuration.

PRODUCT MARKING: GA**OUTLINE DRAWING****PCB Land Pattern****OUTLINE DIMENSIONS (Inches)**

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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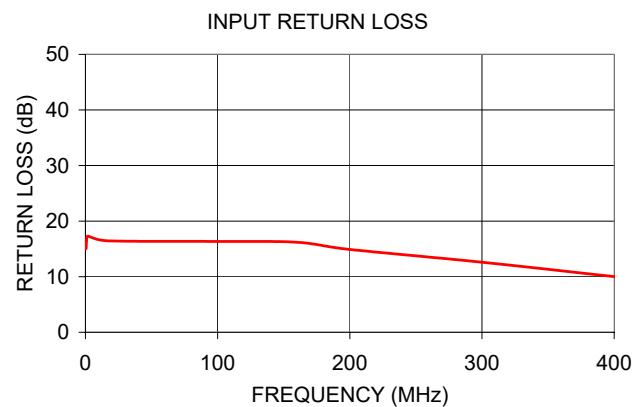
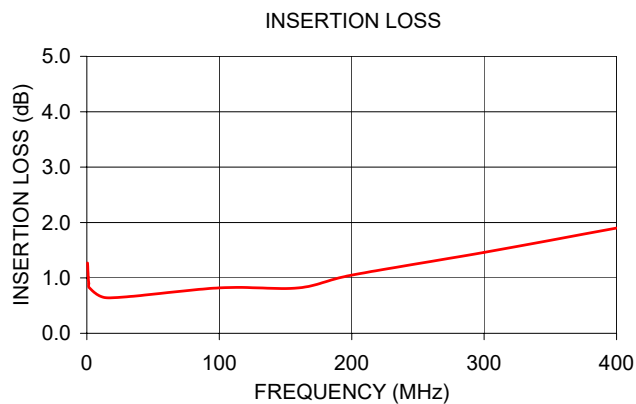
TTCM4-4X+

50Ω

0.5 to 400 MHz

TYPICAL PERFORMANCE DATA

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	Amplitude Unbalance (dB)	Phase Unbalance (deg)
0.50	1.27	15.05	0.02	0.21
1.00	1.02	16.86	0.02	0.16
1.50	0.90	17.24	0.02	0.11
2.00	0.82	17.30	0.03	0.04
16.00	0.64	16.47	0.04	0.12
100.00	0.82	16.33	0.01	0.43
160.00	0.82	16.19	0.10	0.50
200.00	1.05	14.91	0.16	0.34
300.00	1.46	12.61	0.38	0.93
400.00	1.90	10.01	0.61	4.56



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

