



Mini-Circuits

SURFACE MOUNT



RF Transformer

TC1-1-13M-17+

75Ω 70 to 2700 MHz

FEATURES

- Suitable for tin/lead and RoHS solder systems
- Wideband, 70 to 2700 MHz
- Balanced transmission line
- Good return loss
- Excellent amplitude unbalance and phase unbalance
- Aqueous washable



Generic photo used for illustration purposes only

CASE STYLE: AT224-3

+RoHS Compliant

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

APPLICATIONS

- Balanced to unbalanced transformation
- Push-pull amplifiers
- PCS/DCS
- MMDS

ELECTRICAL SPECIFICATIONS AT +25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio			1		Ohm
Frequency Range		70		2700	MHz
Insertion Loss* (average)	70-2700			2	dB
Amplitude Unbalance*	70-2700			2	dB
Phase Unbalance	70-2700			11	deg.
Return Loss	70-2700	14			dB

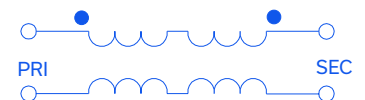
*Frequency where amplitude unbalance=0dB-2100 MHz

MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	0.25W
DC Current	30mA

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

CONFIG. G



REV. A
ECO-022263
TC1-1-13M-17+
MCL NY
240626





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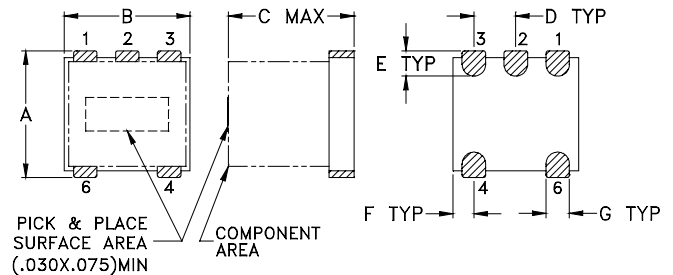
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PIN CONNECTIONS

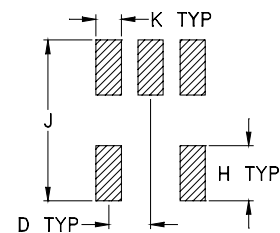
PRIMARY DOT	6
PRIMARY	4
SECONDARY DOT	1
SECONDARY	3
NOT USED	2

PRODUCT MARKING: N/A

OUTLINE DRAWING



PCB Land Pattern

Suggested Layout,
Tolerance to be within ± 0.002 OUTLINE DIMENSIONS $\left(\begin{smallmatrix} \text{Inch} \\ \text{mm} \end{smallmatrix} \right)$

A	B	C	D	E	F
.150	.150	.150	.050	.030	.025
3.81	3.81	3.81	1.27	0.76	0.64
G	H	J	K		wt
.028	.065	.190	.030		grams
0.71	1.65	4.83	0.76		0.10

TAPE & REEL INFORMATION: F17



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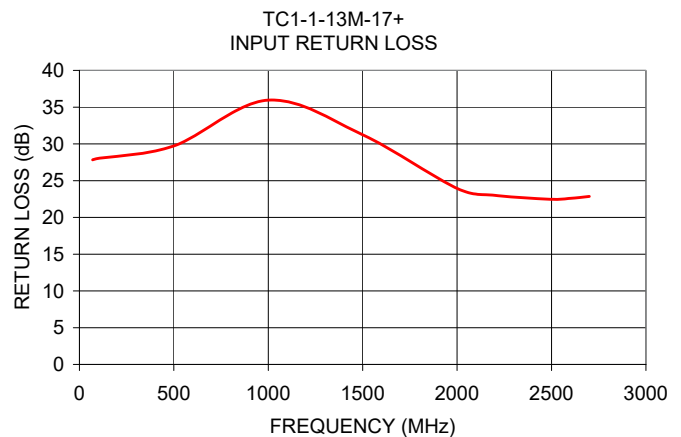
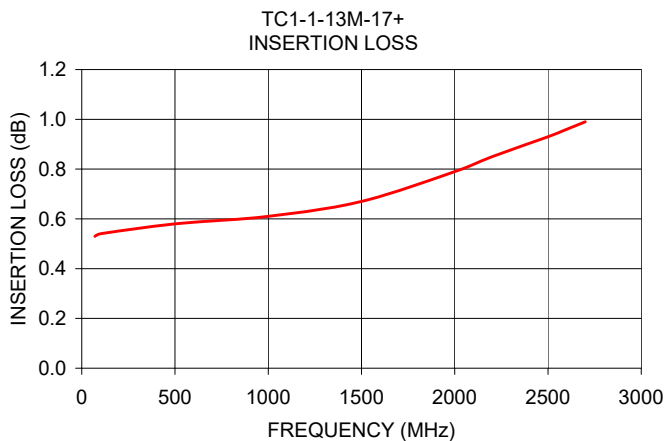
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TYPICAL PERFORMANCE DATA

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
70.0	0.53	27.83	1.66	0.07
100.0	0.54	28.03	1.68	0.30
500.0	0.58	29.73	1.57	1.86
1000.0	0.61	35.95	1.14	3.98
1500.0	0.67	31.24	0.58	5.81
2000.0	0.79	23.95	0.09	6.79
2200.0	0.85	23.00	0.24	6.72
2500.0	0.93	22.46	0.59	6.30
2600.0	0.96	22.59	0.69	6.07
2700.0	0.99	22.85	0.80	5.72



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

