

Surface Mount RF Transformer

50Ω 2 to 800 MHz

TCM9-1X+
Upgraded Version*

- * Addition of Top-hat® feature Benefits
- Allows faster pick-and-place
- Enables visual identification marking

TCM9-1+



Generic photo used for illustration purposes only

CASE STYLE: DB714

+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

- excellent amplitude unbalance, 0.15 dB typ. and phase unbalance, 1 deg typ. in 1 dB bandwidth
- plastic base with solder plated leads
- aqueous washable

Applications

- impedance matching
- balanced to unbalanced transformation

Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio (<i>secondary/primary</i>)			9		Ohm
Frequency Range		2		280	MHz
Insertion Loss*	2 - 280	—	3	—	dB
	3 - 150	—	2	—	
	5 - 100	—	1	—	

* Insertion Loss is referenced to mid-band loss, 0.9 dB typ.

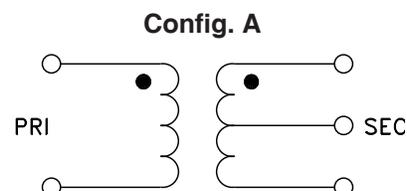
Maximum Ratings

Parameter	Ratings
Operating Temperature	-20°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	0.25W
DC Current	30mA

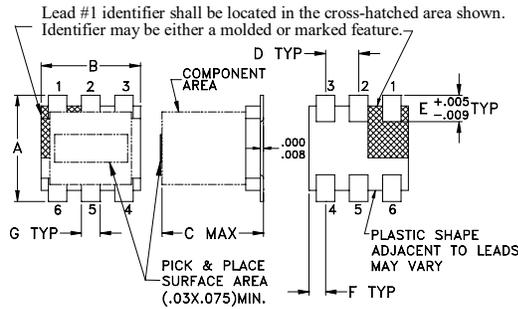
Permanent damage may occur if any of these limits are exceeded.

Pin Connections

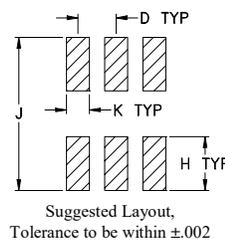
Function	Pin Number
PRIMARY DOT	6
PRIMARY	4
SECONDARY DOT	1
SECONDARY	3
SECONDARY CT	2
NOT USED	5



Outline Drawing



PCB Land Pattern



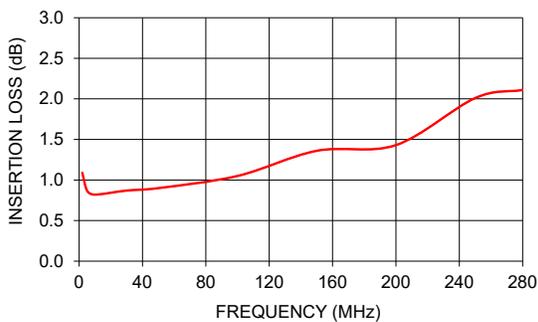
Outline Dimensions (Inch/mm)

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	

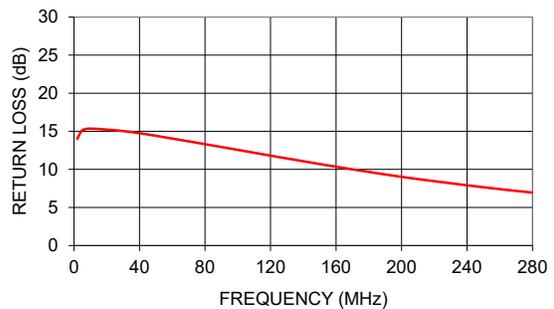
Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)
2	1.09	13.99
5	0.87	15.12
10	0.82	15.35
30	0.87	15.03
50	0.90	14.41
100	1.05	12.56
150	1.36	10.70
200	1.43	9.02
250	2.01	7.65
280	2.11	6.95

INSERTION LOSS



RETURN LOSS



Additional 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/MCLStore/terms.jsp