Engineering Development Model

RF Transformer TC16-ED12901/1

Impedance Ratio : 16

Important Note

This model has been designed, built and tested in our engineering department. Performance data represents model capability.
At present it is a non-catalog model. On request, we can supply a final specification sheet, part number and price/delivery information.

Please click "Back", and then click "Contact Us" for Applications support.

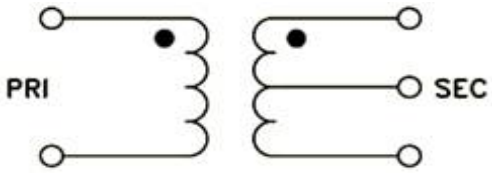
CASE STYLE : AT224-3

ELECTRICAL SPECIFICATIONS 50Ω @ +25°C					
Parameter		**Min.**	**Typ.**	**Max.**	**Units**
Frequency		1		280	MHz
Insertion Loss *	**3 dB Bandwidth**		1 - 280		MHz
	2 dB Bandwidth		2 - 230		MHz
	1 dB Bandwidth		4 - 180		MHz

Note: * Insertion Loss is referenced to mid-band loss, 1.03dB typ.

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

Configuration : A



PIN CONNECTIONS	
PRIMARY DOT	6
PRIMARY	4
SECONDARY DOT	1
SECONDARY	3
SECONDARY CT	2

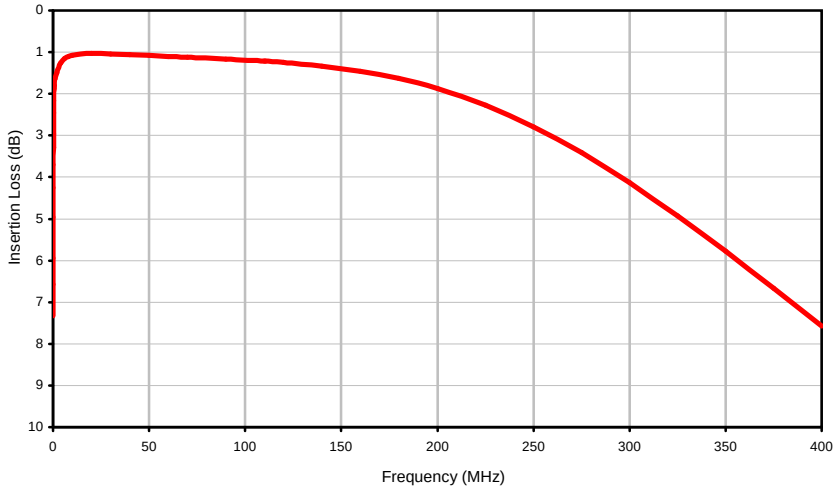
RF Transformer TC16-ED12901/1

Typical Performance Data

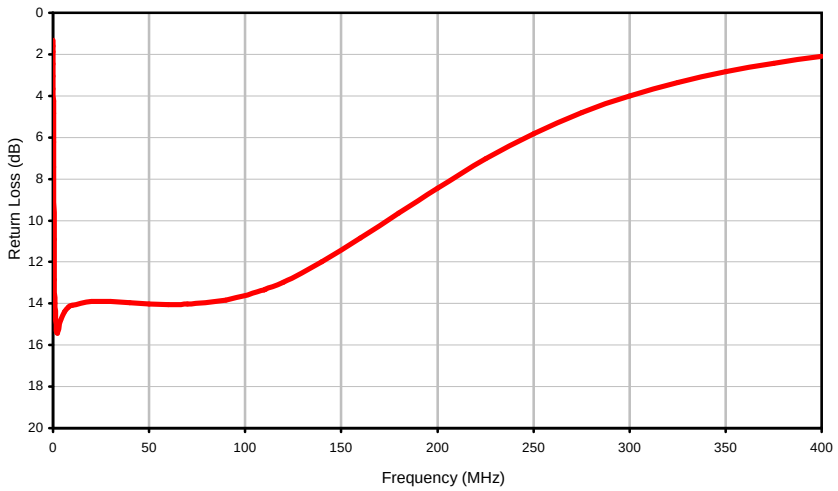
FREQUENCY (MHz)	INSERTION LOSS (dB)	RETURN LOSS (dB)
0.08	7.33	1.33
0.09	6.57	1.60
0.10	5.95	1.88
0.12	4.96	2.46
0.14	4.25	3.06
0.16	3.70	3.66
0.18	3.29	4.26
0.20	2.97	4.84
0.25	2.46	6.21
0.30	2.17	7.43
0.50	1.79	10.90
0.70	1.69	12.84
0.90	1.64	14.00
2.00	1.49	15.40
4.00	1.26	14.79
6.00	1.15	14.39
8.00	1.10	14.18
10.00	1.07	14.07
20.00	1.03	13.90
30.00	1.04	13.91
40.00	1.06	13.96
50.00	1.08	14.01
60.00	1.10	14.04
70.00	1.12	14.03
90.00	1.16	13.83
110.00	1.21	13.33
110.59	1.21	13.31
120.00	1.24	12.96
140.00	1.33	12.00
160.00	1.46	10.86
180.00	1.63	9.64
200.00	1.87	8.44
225.00	2.27	7.04
250.00	2.79	5.83
275.00	3.41	4.82
300.00	4.13	4.00
325.00	4.93	3.35
350.00	5.78	2.83
375.00	6.67	2.43
400.00	7.58	2.11

Typical Performance Curves

Insertion Loss



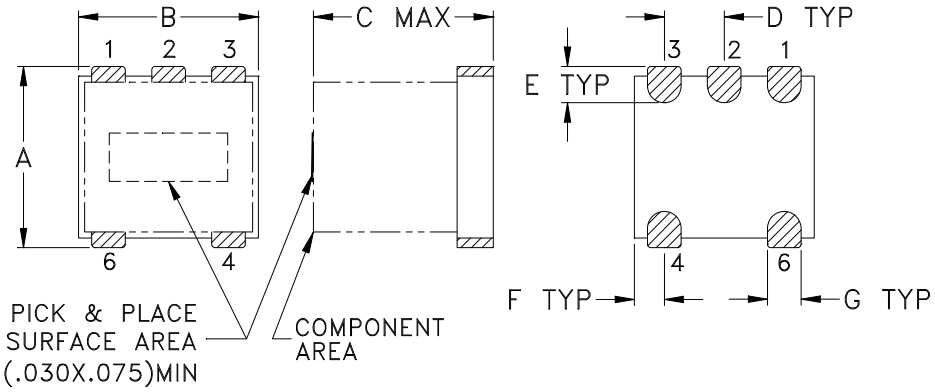
Return Loss



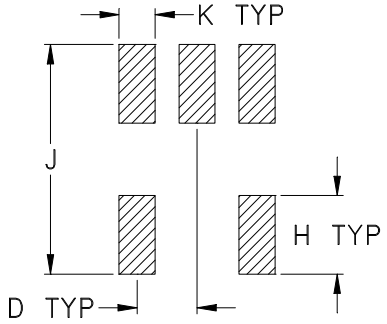
Case Style AT

Outline Dimensions

AT224-3



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

CASE #	A	B	C	D	E	F	G	H	J	K	L	WT. GRAMS
AT224-3	.150 (3.81)	.150 (3.81)	.150 (3.81)	.050 (1.27)	.030 (0.76)	.025 (0.64)	.028 (0.71)	.065 (1.65)	.190 (4.83)	.030 (0.76)	-- --	.10

Dimensions are in inches (mm). Tolerances: 2 Pl. ± .01; 3 Pl. ± .005

Notes:

1. Open style, ceramic base.
2. Termination finish: 3.15-5.12 µ inch (.08-.130 microns) Gold over 78–236 µ inch (1.98-6.0 microns) Nickel plate.

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RF/IF MICROWAVE COMPONENTS

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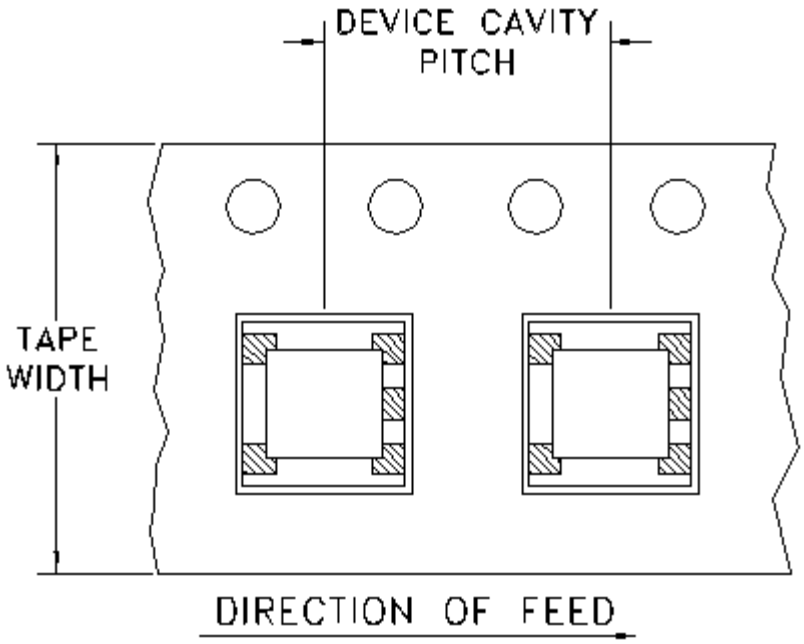
Tape & Reel Packaging TR-F17

DEVICE ORIENTATION IN T&R



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel	
12	8	7	Small quantity standards (see note)	20
				50
				100
				200
				500
		13	Standard	1000
				2000

Note: Please Consult individual model data sheet to determine device per reel availability.

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf

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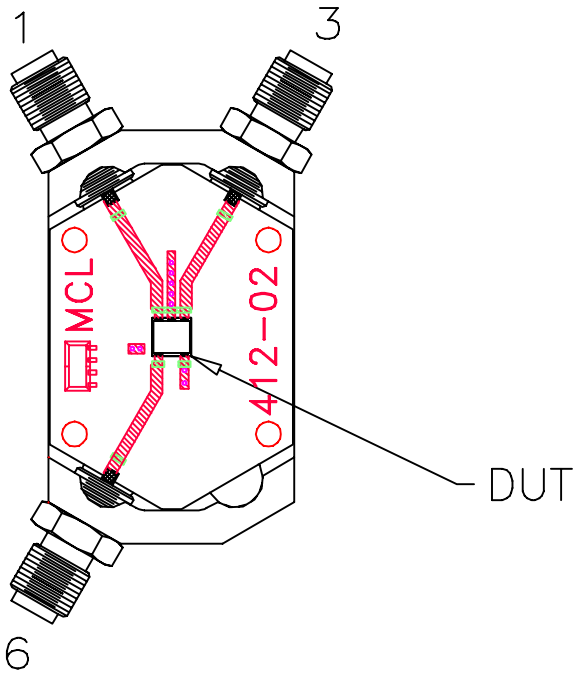
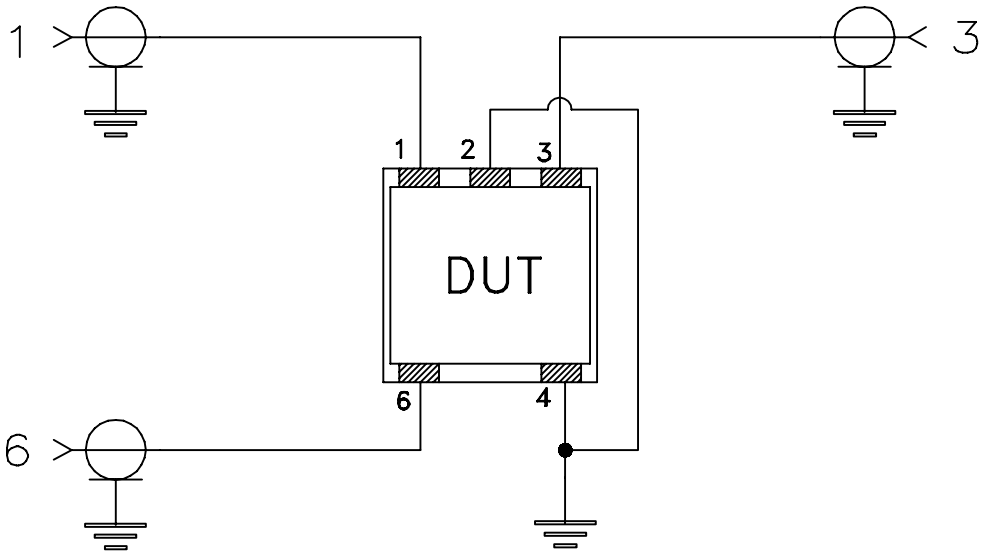
Evaluation Board and Circuit

For Pin Connections refer to Data Sheet of the DUT



TB-145



Schematic Diagram

Notes:

1. 50 Ohm SMA Female connectors.
2. PCB Material: Rogers RO4350B or its equivalent, Dielectric Constant=3.5, Thickness=.020"

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Environmental Specifications ENV02

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

Specification	Test/Inspection Condition	Reference/Spec
Operating Temperature	-20° to 85°C Ambient Environment	Individual Model Data Sheet
Storage Temperature	-55° to 100° C Ambient Environment	Individual Model Data Sheet
Humidity	90 to 95% RH, 240 hours, 50°C	MIL-STD-202, Method 103, Condition A, Except 50°C and end-point electrical test done within 12 hours
Thermal Shock	-55° to 100°C, 100 cycles	MIL-STD-202, Method 107, Condition A-3, except +100°C
Solder Reflow Heat	Sn-Pb Eutetic Process: 225°C peak Pb-Free Process 245° - 250°C peak	J-STD-020, Table 4-1, 4-2 and 5-2, Figure 5-1
Solderability	10X Magnification	J-STD-002, 95% Coverage
Vibration (High Frequency)	20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36)	MIL-STD-202, Method 204, Condition D
Mechanical Shock	50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes	MIL-STD-202, Method 213, Condition A
Marking Resistance to Solvents	Isopropyl alcohol + mineral spirits at 25°C; terpene defluxer at 25°C; distilled water + proylene glycol monomethyl ether + monoethanolamine at 63°C to 70°C	MIL-STD-202, Method 215

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