### Engineering Development Model

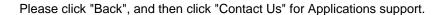
### **RF Transformer**

### TC2-ED10896/1

Impedance Ratio: 2

#### **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.



3 dB Bandwidth

2 dB Bandwidth

1 dB Bandwidth

**ELECTRICAL SPECIFICATIONS** 

Min.

2

2 - 700



**CASE STYLE: AT224** 

MHz

@ +25°C		
Тур.	Max.	Units
	2400	MHz
2 - 2400		MHz
2 - 1900		MHz

#### Notes:

**Parameter** 

Frequency

Insertion Loss \*

<sup>\*</sup> Insertion Loss is referenced to mid-band loss, 1.01dB 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				

PIN CONNECTIONS				
PRIMARY	6			
SECONDARY	1*			
COMMON	3			

# **Configuration: D** O SEC

#### Notes:

\* 1pF Capacitor should be placed across the secondary.

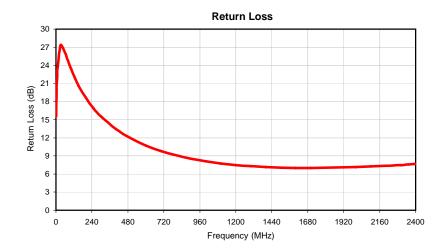
### Typical Performance Data

FREQUENCY MHz	INSERTION LOSS (dB)	RETURN LOSS (dB)		
	(==)	(==)		
2.00	1.10	15.58		
5.00	1.01	19.98		
8.00	1.03	22.44		
10.00	1.05	23.58		
30.00	1.12	27.28		
50.00	1.14	26.75		
70.00	1.15	25.46		
90.00	1.16	24.10		
100.00	1.17	23.47		
150.00	1.20	20.69		
200.00	1.24	18.59		
250.00	1.29	16.91		
300.00	1.33	15.54		
400.00	1.46	13.45		
500.00	1.60	11.91		
600.00	1.75	10.73		
700.00	1.89	9.82		
800.00	2.04	9.10		
900.00	2.19	8.53		
1000.00	2.32	8.09		
1100.00	2.43	7.74		
1200.00	2.51	7.49		
1300.00	2.60	7.29		
1400.00	2.70	7.14		
1500.00	2.81	7.06		
1600.00	2.89	7.02		
1700.00	2.93	7.00		
1800.00	2.96	7.03		
1900.00	3.01	7.08		
2000.00	3.06	7.14		
2100.00	3.13	7.24		
2200.00	3.17	7.36		
2300.00	3.20	7.50		
2350.00	3.14	7.60		
2400.00	3.25	7.68		



### Typical Performance Data



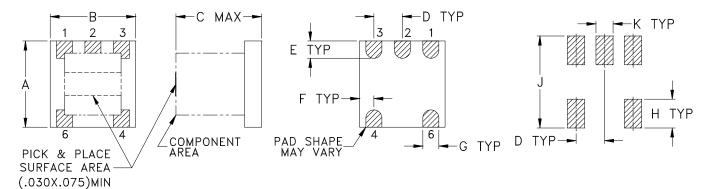




### **Outline Dimensions**

**AT224** 

### **PCB Land Pattern**



Suggested Layout, Tolerance to be within  $\pm .002$ 

CASE #	A	В	C	D	Е	F	G	Н	J	K	L	WT. GRAMS
AT224	.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:**

- Open style, ceramic base.
- Termination finish:

For RoHS Case Styles: 2-10  $\mu$  inch (.05-.25 microns) Gold over 100-300  $\mu$  inch (2.54-7.62 microns) Nickel plate. All models, (+) suffix.

For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.

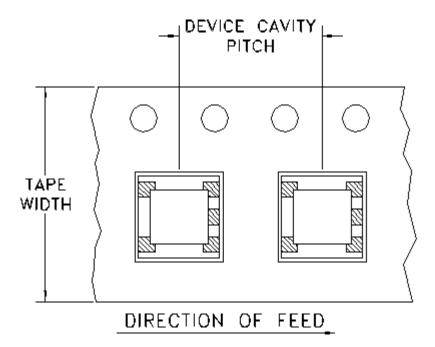




P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 For detailed performance specs & shopping online see Mini-Circuits web site The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: www.minicircuits.com

## Tape & Reel Packaging TR-F17

### DEVICE ORIENTATION IN T&R



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices	s per Reel
			Small	20
			quantity	50
		7	standards	100
12	8		(see note)	200
				500
		12	Ctondond	1000
		13	Standard	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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RF/IF MICROWAVE COMPONENTS



#### **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		

ENV02 Rev: A

02/25/11

M130240 File: ENV02.pdf

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