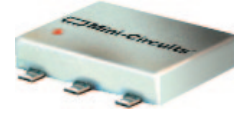


Surface Mount

# RF Transformer

75Ω 5 to 300 MHz

## ADT2-32-1+



CASE STYLE: CD542  
PRICE: Contact Sales Dept.

**+RoHS Compliant**

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

### Maximum Ratings

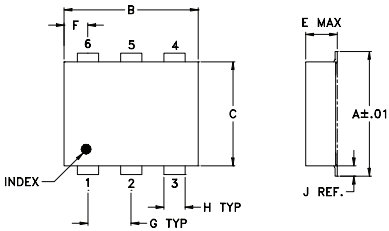
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	26 dBm(0.40W)
DC Current(Into Secondary CT)	300mA

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

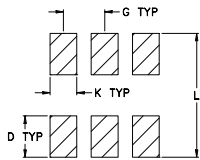
### Pin Connections

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

### Outline Drawing



### PCB Land Pattern



Suggested Layout,  
Tolerance to be within ±.002

### Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.272	.310	.220	.100	.112	.055	.100
6.91	7.87	5.59	2.54	2.84	1.40	2.54
H	J	K	L			wt
.030	.026	.065	.300			grams
0.76	0.66	1.65	7.62			0.20

### Features

- excellent return loss, 25 dB typ.
- excellent amplitude unbalance, 0.6 dB typ. and phase unbalance, 4 deg typ.
- aqueous washable
- protected under US patent 6,133,525

### Applications

- impedance matching
- balanced amplifier

### Electrical Specifications at 25°C

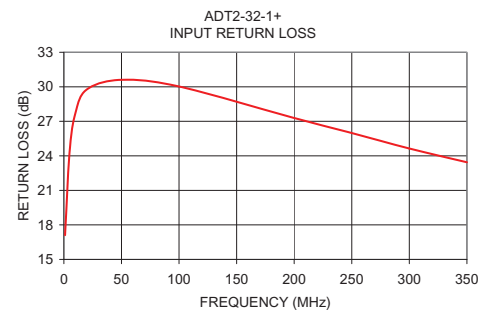
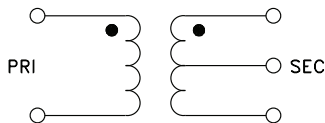
Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio (secondary/primary)			2		Ohm
Frequency Range		5		300	MHz
Insertion Loss*	5-300		0.4	0.6	dB
Amplitude Unbalance	5-300		0.8	0.9	dB
Phase Unbalance	5-300		4	9	Degree
Return Loss	5-300	16			dB
IP3 (6 MHz Tone spacing at 6dBm)	16	50			dBm
	50				
	150				
	200				
	300				

\* Insertion Loss is referenced to mid-band loss, 0.4 dB.

### Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
1.0	0.81	17.11	0.13	0.27
5.0	0.50	24.38	0.07	0.33
10.0	0.43	27.70	0.02	0.25
20.0	0.41	29.78	0.01	0.11
50.0	0.43	30.61	0.03	0.90
100.0	0.48	30.03	0.08	1.96
200.0	0.53	27.29	0.26	3.91
250.0	0.56	25.98	0.40	4.78
300.0	0.60	24.64	0.58	5.60
350.0	0.65	23.44	0.79	6.33

### Config. A



For detailed performance specs & shopping online see web site

P.O. Box 350166, Brooklyn, New York 11235-0003 (718) 934-4500 Fax (718) 332-4661 The Design Engineers Search Engine Provides ACTUAL Data Instantly at [minicircuits.com](http://minicircuits.com)

Notes: 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet 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](http://www.minicircuits.com/MCLStore/terms.jsp).

# RF Transformer

# ADT2-32-1+

## Typical Performance Data

FREQUENCY (MHz)	AVERAGE INSERTION LOSS (dB)	INPUT RETURN LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (deg.)
1.0	0.81	17.11	0.13	0.27
3.0	0.60	21.99	0.08	0.27
5.0	0.50	24.38	0.07	0.33
7.0	0.45	26.11	0.05	0.32
10.0	0.43	27.70	0.02	0.25
12.0	0.42	28.40	0.01	0.18
16.0	0.42	29.35	0.00	0.03
20.0	0.41	29.78	0.01	0.11
40.0	0.42	30.58	0.03	0.66
50.0	0.43	30.61	0.03	0.90
60.0	0.44	30.63	0.04	1.12
80.0	0.46	30.44	0.05	1.56
100.0	0.48	30.03	0.08	1.96
150.0	0.50	28.45	0.16	3.00
175.0	0.52	28.07	0.20	3.44
200.0	0.53	27.29	0.26	3.91
225.0	0.55	26.56	0.33	4.35
250.0	0.56	25.98	0.40	4.78
275.0	0.59	25.31	0.48	5.20
300.0	0.60	24.64	0.58	5.60
325.0	0.63	24.03	0.68	5.97
350.0	0.65	23.44	0.79	6.33



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The Design Engineers Search Engine Provides ACTUAL Data Instantly From MINI-CIRCUITS At: [www.minicircuits.com](http://www.minicircuits.com)

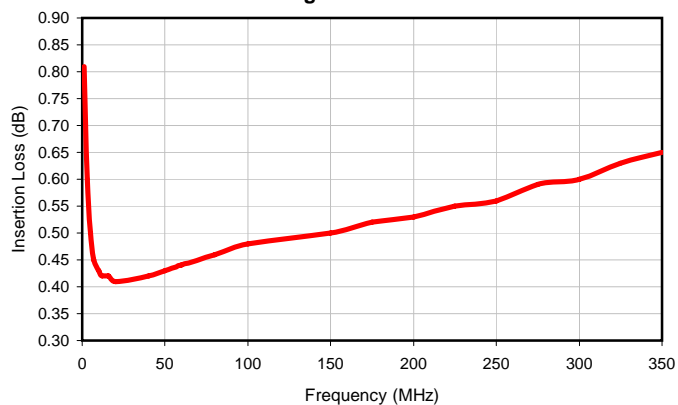


IF/RF MICROWAVE COMPONENTS

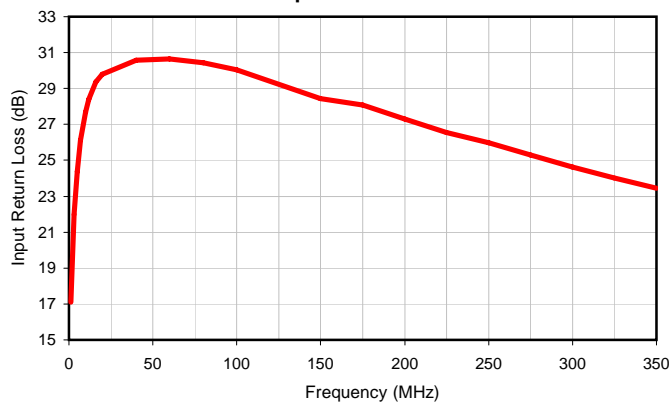
REV. OR  
ADT2-32-1+  
6/26/2012  
Page 1 of 1

## Typical Performance Data

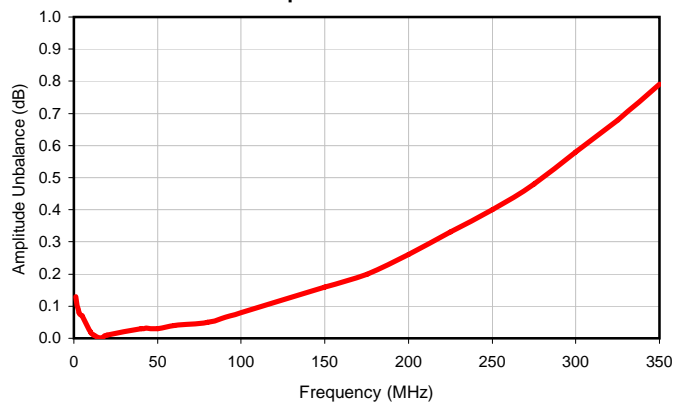
### Average Insertion Loss



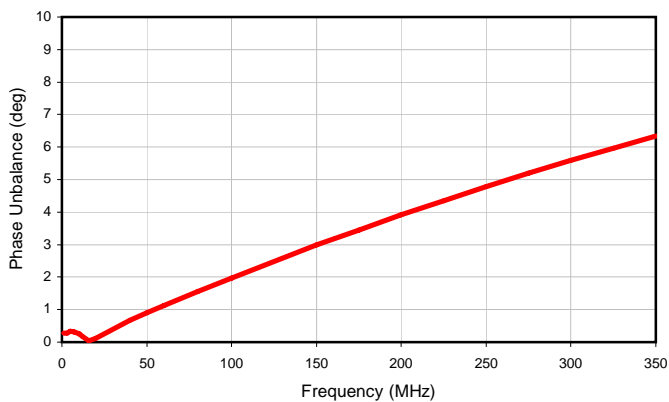
### Input Return Loss



### Amplitude Unbalance



### Phase Unbalance

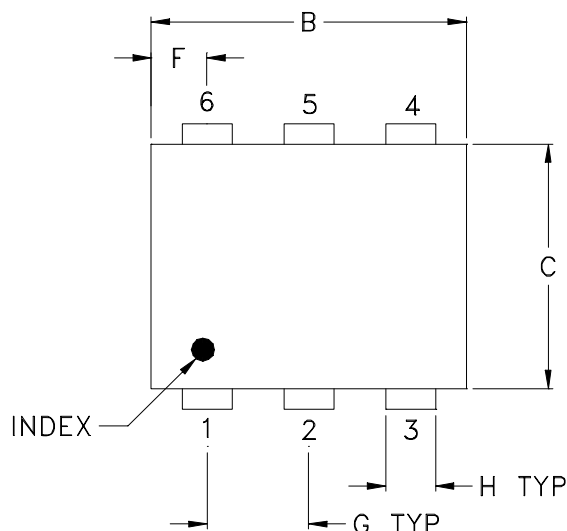


# Case Style

# CD

CD541  
CD542  
CD636  
CD637

## Outline Dimensions



## PCB Land Pattern



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

CASE#	A	B	C	D	E	F	G	H	J	K	L	WT, GRAM
CD541					.082 (2.08)							.15
CD542	.272 (6.91)	.310 (7.87)	.220 (5.58)	.100 (2.54)	.112 (2.84)	.055 (1.40)	.100 (2.54)	.030 (0.76)	.026 (0.66)	.065 (1.65)	.300 (7.62)	.20
CD636					.162 (4.11)							.25
CD637					.206 (5.23)							.40

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

### Notes:

- Case material: Plastic.
- Termination finish:
  - For RoHS Case Styles: Tin plate over Nickel plate. All models, (+) suffix.
  - For RoHS-5 Case Styles: Tin-Lead plate. All models, no (+) suffix.

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# Tape & Reel Packaging TR-F34



Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel see note	
16	12	7	Small quantity standard (see note)	20
				50
				100
				200
		13	Standard	500
				1000

Note: Availability of small reel quantity varies by model.  
Refer to pricing and availability on individual model dashboard.

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.

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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	-40° 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