

RF Transformer

ADT1-6T

50Ω 0.03 to 125 MHz

Maximum Ratings

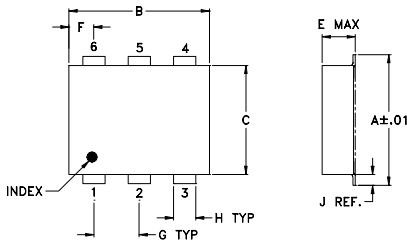
Operating Temperature	-20°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	0.5W
DC Current	30mA

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

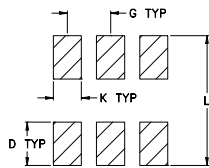
Pin Connections

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

Outline Drawing



PCB Land Pattern



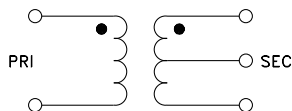
Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch/mm)

A	B	C	D	E	F	G
.272	.310	.220	.100	.206	.055	.100
6.91	7.87	5.59	2.54	5.23	1.40	2.54
H	J	K	L	wt		
.030	.026	.065	.300	grams		
0.76	0.66	1.65	7.62	0.40		

Demo Board MCL P/N: TB-430

Config. A



Features

- excellent amplitude unbalance, 0.1 dB typ. and phase unbalance, 1 deg. typ. in 1dB bandwidth
- excellent return loss, 18 dB typ. in 1 dB bandwidth
- aqueous washable
- protected under US patent 6,133,525

Applications

- impedance matching
- balanced amplifier



Generic photo used for illustration purposes only

CASE STYLE: CD637

Transformer Electrical Specifications

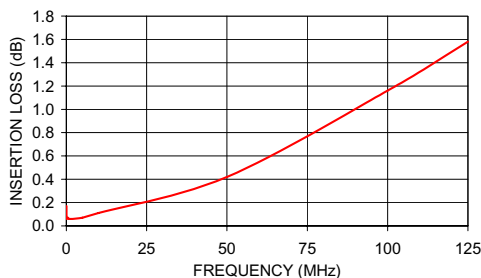
Ω RATIO	FREQUENCY (MHz)	INSERTION LOSS*			PHASE UNBALANCE (Deg.) Typ.		AMPLITUDE UNBALANCE (dB) Typ.	
		3 dB MHz	2 dB MHz	1 dB MHz	1 dB bandwidth	2 dB bandwidth	1 dB bandwidth	2 dB bandwidth
1	0.03-125	0.03-125	0.04-75	0.05-50	1	1	0.1	0.2

* Insertion Loss is referenced to mid-band loss, 0.1 dB typ.

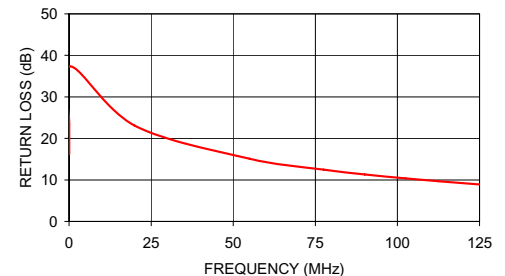
Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
0.03	0.17	16.36	0.01	0.06
0.05	0.08	20.69	0.00	0.04
0.10	0.06	26.79	0.00	0.01
0.50	0.07	38.06	0.00	0.02
1.00	0.06	39.09	0.00	0.03
5.00	0.07	32.08	0.00	0.10
10.00	0.11	27.04	0.01	0.19
50.00	0.42	14.63	0.13	0.89
100.00	1.16	9.25	0.52	1.93
125.00	1.58	7.66	0.83	2.58

ADT1-6T
INSERTION LOSS



ADT1-6T
INPUT RETURN LOSS



Notes

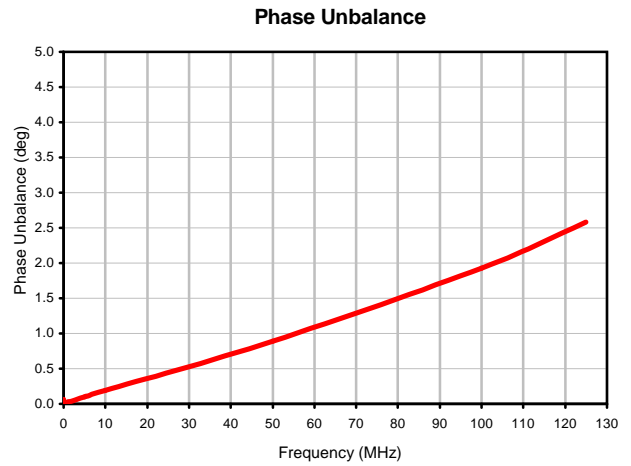
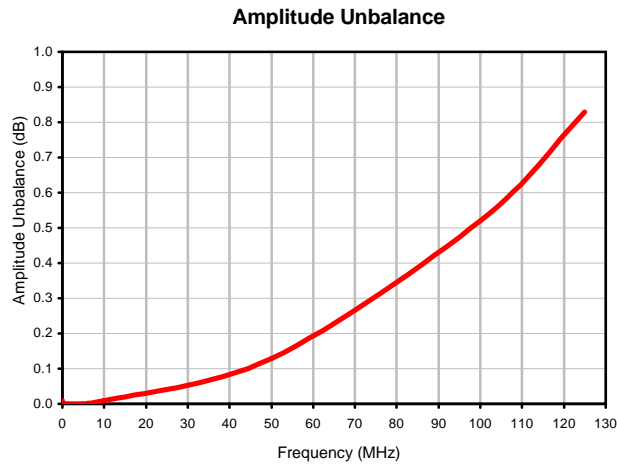
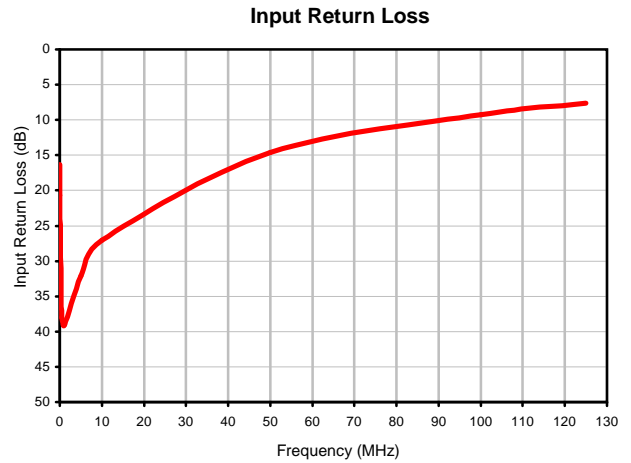
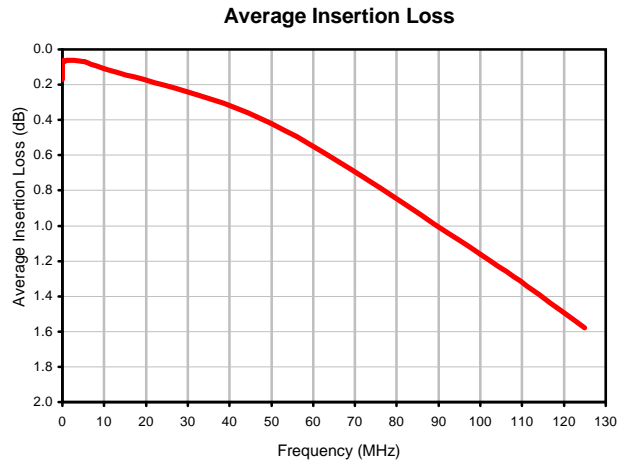
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Typical Performance Data

FREQUENCY (MHz)	AVERAGE INSERTION LOSS (dB)	INPUT RETURN LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (deg)
0.03	0.17	16.36	0.01	0.06
0.05	0.08	20.69	0.00	0.04
0.10	0.06	26.79	0.00	0.01
0.50	0.07	38.06	0.00	0.02
1.00	0.06	39.09	0.00	0.03
5.00	0.07	32.08	0.00	0.10
10.00	0.11	27.04	0.01	0.19
50.00	0.42	14.63	0.13	0.89
100.00	1.16	9.25	0.52	1.93
125.00	1.58	7.66	0.83	2.58

Typical Performance Curves



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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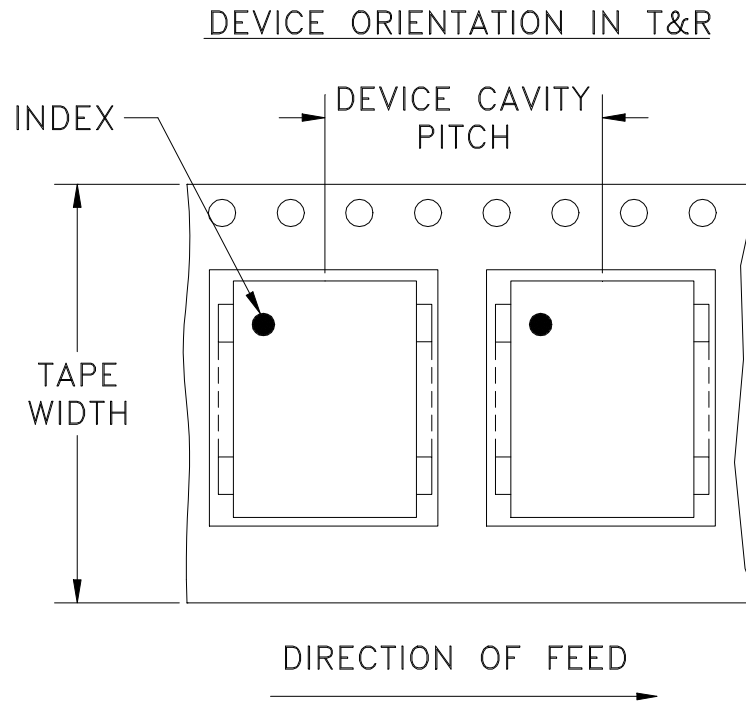
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Tape Width, mm	Device Cavity Pitch, mm	Reel Size, inches	Devices per Reel
16	12	13	900

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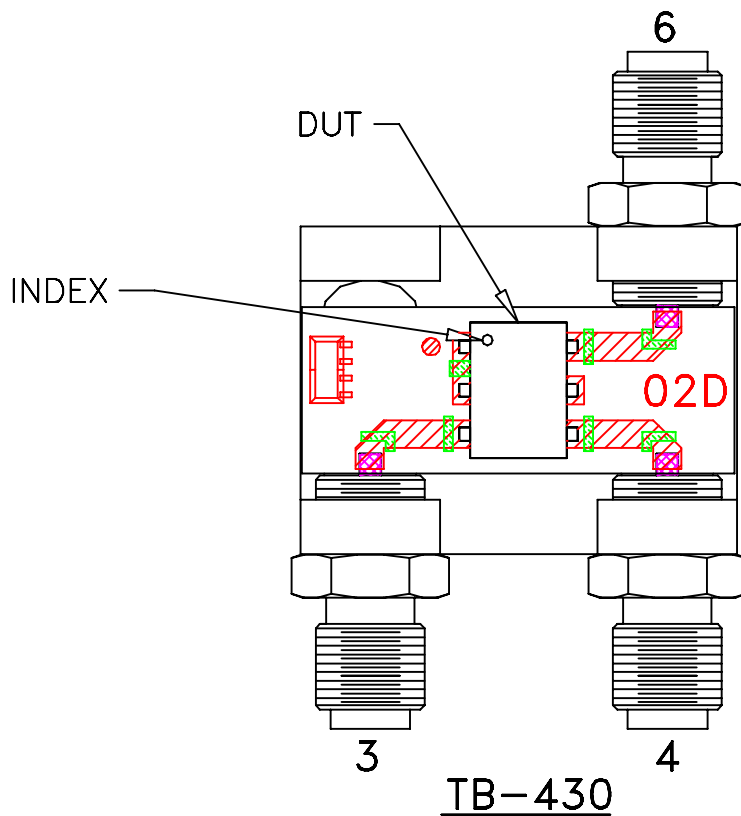
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Evaluation Board and Circuit

For Pin Connections refer to Data Sheet of the DUT



Schematic Diagram

Notes:

1. SMA Female connectors.
2. PCB Material: Rogers R04350 or equivalent, Dielectric Constant=3.5, Thickness=.030 inch.
3. Must use ENA/PNA type agilent's network analyzers with impedance conversion option to convert ports to appropriate impedances.

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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	-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