Surface Mount

RF Transformer

ADT2-71T+

50Ω 0.005 to 70 MHz

CASE STYLE: CD637

The Big Deal

- Low insertion loss, 0.9 dB
- Low unbalance, 0.5 dB, 3˚
- Small size, 0.27 x 0.31 x 0.22”

Product Overview

Mini-Circuits’ ADT2-71T+ is a 50Ω DC isolated surface-mount transformer with a secondary/primary impedance ratio of 2:1 and a center tap on the secondary winding. This model covers the 0.005 to 70 MHz band with low insertion loss (0.9 dB) as well as low phase unbalance (3˚) and amplitude unbalance (0.5 dB). The unit comes enclosed in a miniature, 6-lead plastic package measuring just 0.27 x 0.31 x 0.22”, ideal for dense circuit board layouts.

Key Features

Feature	Advantages
DC isolation	Provides DC isolation between circuits and efficient AC transmission, eliminating the need for external DC biasing components.
Secondary center tap	Allows DC feed up to 30 mA and DC bias without adding bias tees into the signal chain.
Low insertion loss, 0.9 dB	Excellent transmission of signal power from input to output.
Low phase and amplitude unbalance, 3˚, 0.5 dB	Low phase and amplitude unbalance can improve a system’s electromagnetic compatibility by rejecting unwanted common-mode noise.
Small footprint, 0.27 x 0.31 x 0.22”	Accommodates tight space requirements for dense PCB layouts.

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Maximum 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

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

Features

- wideband, 0.005 to 70 MHz
- excellent amplitude unbalance, 0.2 dB typ. and phase unbalance, 2 deg. typ. in 1 dB bandwidth
- aqueous washable
- plastic base with leads

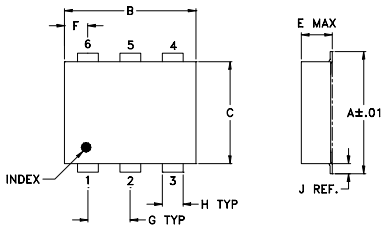
+RoHS Compliant

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

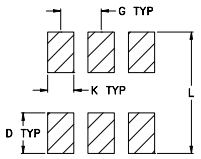
Applications

- impedance matching
- balanced to unbalanced transformation
- push-pull amplifiers

Outline Drawing



PCB Land Pattern



Suggested Layout,
Tolerance to be within ±.002

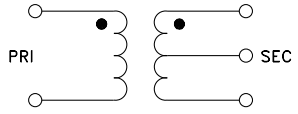
Outline Dimensions (inch / mm)

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



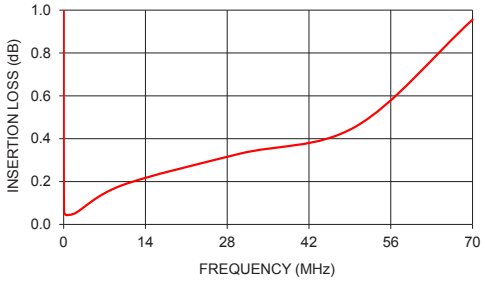
Electrical Specifications @25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio (secondary/primary)			2		
Frequency Range		0.005	—	70	MHz
Insertion Loss	0.01 - 50	—	0.4	1.3	dB
	0.005 - 70	—	0.9	1.8	
Amplitude Unbalance	0.01 - 50	—	0.2	0.5	dB
	0.005 - 70	—	0.5	1.0	
Phase Unbalance	0.01 - 50	—	1.0	5.0	Degree
	0.005 - 70	—	3.0	8.0	

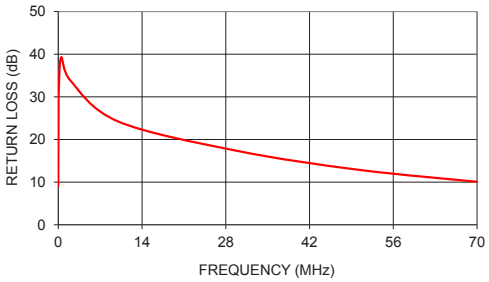
Typical Performance Data

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
0.005	1.00	9.12	0.00	0.03
0.010	0.39	13.90	0.00	0.02
0.050	0.07	26.83	0.00	0.02
0.100	0.05	32.43	0.00	0.03
0.500	0.04	39.29	0.00	0.03
2.000	0.05	33.89	0.00	0.06
10.000	0.18	24.23	0.02	0.24
30.000	0.33	17.30	0.09	0.73
50.000	0.46	12.93	0.25	1.55
70.000	0.96	10.08	0.54	2.82

ADT2-71T+
INSERTION LOSS



ADT2-71T+
INPUT RETURN LOSS



Notes

A. 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.
B. Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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