

Surface Mount

# RF Transformer

ADT2-71T+

50Ω 0.005 to 70 MHz

## 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"



CASE STYLE: CD637

## 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.

### 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.  
C. The parts covered by this specification document 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)



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50Ω 0.005 to 70 MHz

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## Maximum Ratings

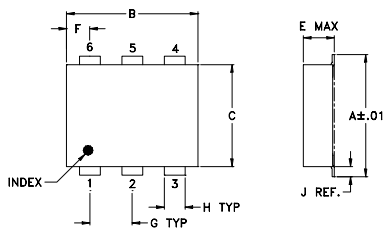
Operating Temperature	-20°C to 85°C
Storage Temperature	-55°C to 100°C
RF Power	0.25W
DC Current	30mA

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

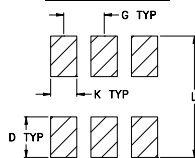
## Pin Connections

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

## Outline Drawing



### PCB Land Pattern



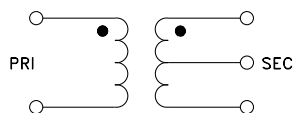
Suggested Layout,  
Tolerance to be within ±.002

## 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

- 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

## Applications

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



CASE STYLE: CD637

### +RoHS Compliant

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



Available Tape and Reel  
at no extra cost

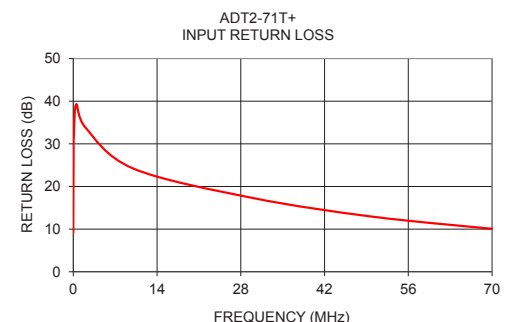
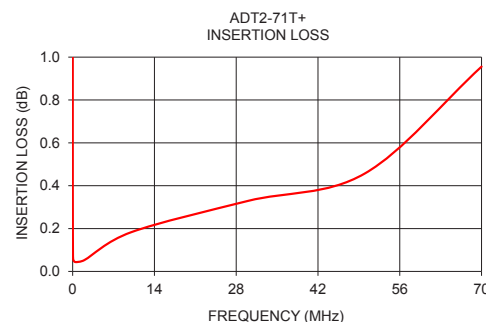
Reel Size	Devices/Reel
13"	900

## 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 0.005 - 70	— —	0.4 0.9	1.3 1.8	dB
Amplitude Unbalance	0.01 - 50 0.005 - 70	— —	0.2 0.5	0.5 1.0	dB
Phase Unbalance	0.01 - 50 0.005 - 70	— —	1.0 3.0	5.0 8.0	Degree

## 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



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