Balanced to Unbalanced

RF Transformer

TC1.33-282+

100 to 75Ω 5 to 2800 MHz

CASE STYLE: AT224-1

The Big Deal

- Very wide bandwidth, 5 to 2800 MHz
- Very good return loss over entire band
- Convenient 100/75Ω matching over a wide range of frequencies

Product Overview

The TC1.33-282+ is a mini wideband tri-filar transformer, measuring approximately 4 mm on all sides. The plastic substrate, 5-pad design is aqueous washable and RoHS compliant, featuring a square core and all welded wire construction for repeatability and reliability in balanced-to-unbalanced 100/75Ω implementations.

Feature	Advantages
Very wide bandwidth	5-2800 MHz bandwidth useful for CATV (forward & return), medical wireless and D2A/A2D, and communications applications
Excellent amplitude and phase unbalance	0.3 dB amplitude and 6° phase unbalance aid rejection of even harmonics (in push-pull amplifiers) and common mode signals (when used as a balun)
Good return loss	Efficient signal path across 100/75Ω transitions
Low and flat insertion loss	Flatness ±0.1 dB across 50-1000 MHz CATV bands preserves gain flatness after impedance transformation

Balanced to Unbalanced

RF Transformer

100 to 75Ω 5 to 2800 MHz

TC1.33-282X+ Upgraded Version*

TC1.33-282+

Generic photo used for illustration purposes only

CASE STYLE: AT224-1

*Addition of Top hat™ feature
Benefits
- Allows faster pick-and-place
- Enables visual identification marking

+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
7"	20, 50, 100, 200, 500
13"	1000, 2000

Maximum Ratings

Operating Temperature	-40°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	6
PRIMARY	4
SECONDARY DOT	1
SECONDARY	3
NOT USED	2

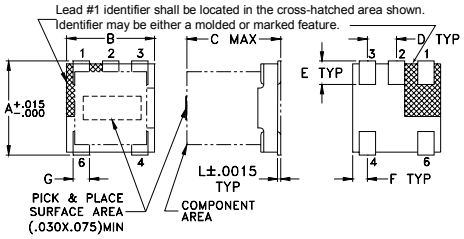
Features

- suitable for tin/lead and RoHS solder systems
- wideband, 5 to 2800 MHz
- balanced transmission line
- good return loss, 20 dB typ. at 1 dB band
- excellent amplitude unbalance, 0.3 dB typ.
- aqueous washable

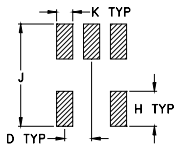
Applications

- balanced to unbalanced transformation
- push-pull amplifiers
- PCS/DCS
- cable TV
- cellular

Outline Drawing AT224-1



PCB Land Pattern



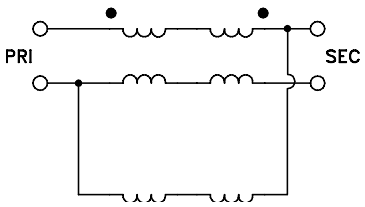
Suggested Layout,
Tolerance to be within ±.002

Outline Dimensions (inch / mm)

A	B	C	D	E	F
.150	.150	.160	.050	.040	.025
3.81	3.81	4.06	1.27	1.02	0.64

G	H	J	K	L	wt
.028	.065	.190	.030	.007	grams
0.71	1.65	4.83	0.76	0.18	0.15

Config. K



Electrical Specifications at 25°C, 75Ω

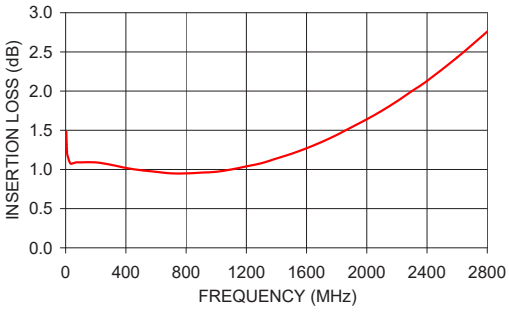
Ω RATIO (Secondary/Primary)	FREQUENCY (MHz)	INSERTION LOSS*			PHASE UNBALANCE (Deg.) Typ.		AMPLITUDE UNBALANCE (dB) Typ.	
		3 dB MHz	2 dB MHz	1 dB MHz	1 dB bandwidth	2 dB bandwidth	1 dB bandwidth	2 dB bandwidth
1.33	5-2800	5-2800	30-2000	50-1500	6	6	0.3	1.0

*Insertion Loss is referenced to mid-band loss, 1.0 dB typ. Measured in 75Ω system.

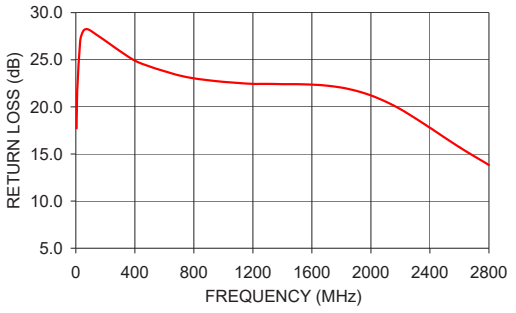
Typical Performance Data, 75Ω

FREQUENCY (MHz)	INSERTION LOSS (dB)	INPUT R. LOSS (dB)	AMPLITUDE UNBALANCE (dB)	PHASE UNBALANCE (Deg.)
5.00	1.48	17.72	0.38	3.28
10.00	1.20	21.95	0.21	2.17
30.00	1.08	27.05	0.11	0.55
50.00	1.08	28.04	0.09	0.06
100.00	1.09	28.09	0.08	1.09
500.00	0.99	24.29	0.21	5.00
1000.00	0.97	22.66	0.07	6.34
1500.00	1.20	22.41	0.71	5.18
2000.00	1.64	21.22	1.49	1.64
2400.00	2.13	17.79	2.00	3.40
2800.00	2.76	13.83	2.31	10.70

INSERTION LOSS



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.
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

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for Audio Transformers / Signal Transformers ***category:***

Click to view products by Mini-Circuits ***manufacturer:***

Other Similar products are found below :

CX2041NLT MGPWT-00449-P PE-64961 H1302FNLT H5008FNL H5012FNL H5020FNLT H5077NLT H5084FNLT B78476A9558A003 1812WBT2-4 1879479-1 HX2260FNL HX5014FNL EX2024FNL FL1066 T1137NLT T3012NL PE-65812FNL PE-65848FNLT H1174FNL H1302FNL H5015FNL H5019EFNL H5062FNLT CX2047LNL MGPWT-00059-P MGPWT-00266-P MGPWT-00278-P MGPWT-00431-P TTC-100 TTC-143-H TTC-5032-1 BX1194WNLT HX1234NLT HX5008FNLT HX5019FNL HX5084NL 3-1879385-5 TX1263NLT 4-1879391-0 T1142NL HX6101FNL HX5084FNL HX1148NL HX5020FNLT HX5014FNLT T1124NL 1879732-1 2-1879391-5