

Surface Mount

RF Transformer

TRC1-1K122-75+

75Ω 20 to 1250 MHz 1:1 Ratio

The Big Deal

- Low insertion loss, 0.9 dB typ.
- Good return loss, 23 dB typ.
- Low unbalance, 0.2 dB, 4°
- Power handling up to 2.0W



CASE STYLE: GU2644

Product Overview

The TRC1-1K122-75+ is a 75Ω surface mount transmission line transformer with a 1:1 secondary/primary impedance ratio covering the 20 to 1250 MHz band, meeting bandwidth requirements for DOCSIS® 3.1 compliant systems and equipment, among other applications. This model handles RF input power up to 2W and provides low insertion loss, good return loss and low unbalance. Measuring only 0.12 x 0.17 x 0.13", the unit features core and wire construction mounted on a 4-pad plastic base, ideal for dense PCB layouts.

Key Features

Feature	Advantages
Wideband, 20 to 1250 MHz	TRC1-1K122-75+ supports a variety of applications including CATV and DOCSIS 3.1 systems and equipment.
Low insertion loss, 0.9 dB	Enables excellent signal power transmission from input to output.
Good return loss, 23 dB typ.	Excellent matching for 75Ω systems with minimal signal reflection.
Low unbalance, 0.2 dB, 4°	Low unbalance can improve a system's electromagnetic compatibility by rejecting unwanted common-mode noise.
Small footprint, 0.12 x 0.17"	Accommodates tight space requirements for dense PCB layouts.

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Features

- wideband, 20 to 1250 MHz
- balanced transmission line
- good return loss, 23 dB typ.
- excellent amplitude unbalance, 0.2 dB typ. and phase unbalance, 4 deg typ.
- plastic base with leads
- aqueous washable

Applications

- balanced to unbalanced transformation
- push-pull amplifiers
- PCS/DCS
- MMDS
- DOCSIS 3.1



Generic photo used for illustration purposes only

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+RoHS Compliant

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

Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio			1		
Frequency Range		20	—	1250	MHz
Insertion Loss (Average)	20 - 1000	—	0.9	1.4	dB
	1000 - 1250	—	0.68	1.0	
Amplitude Unbalance	20 - 1250	—	0.2	1.0	dB
Phase Unbalance	20 - 1250	—	4	10	Degree
Input Return Loss	20 - 1250	14	23	—	dB
Input Power	20 - 1250	—	—	2.0	Watt

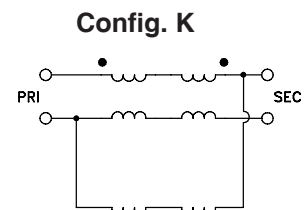
Maximum Ratings

Parameter	Ratings
Operating Temperature	-40°C to 85°C
Storage Temperature	-55°C to 100°C
DC Current	300mA

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

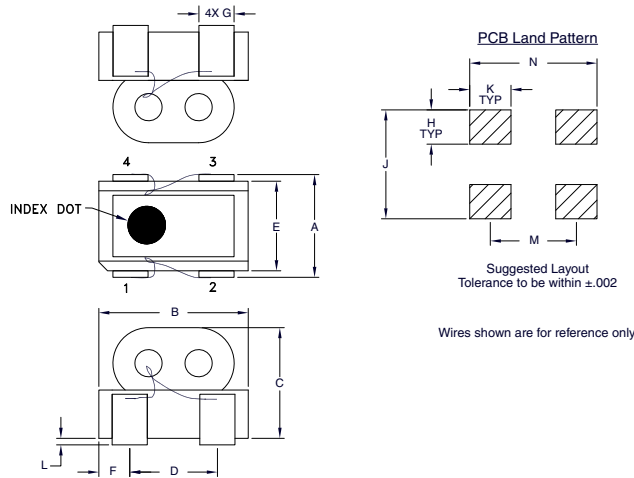
Pin Connections

Function	Pin Number
PRIMARY DOT (INPUT)	1
PRIMARY (GND)	2
SECONDARY DOT (OUTPUT)	3
SECONDARY (OUTPUT)	4



TRC1-1K-122-75+

Outline Drawing

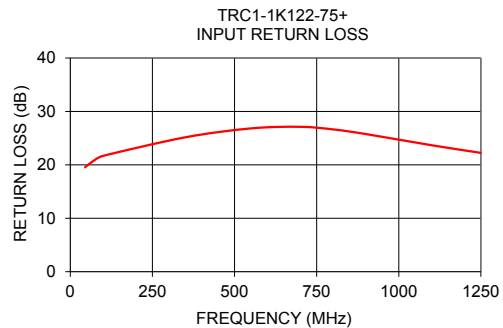
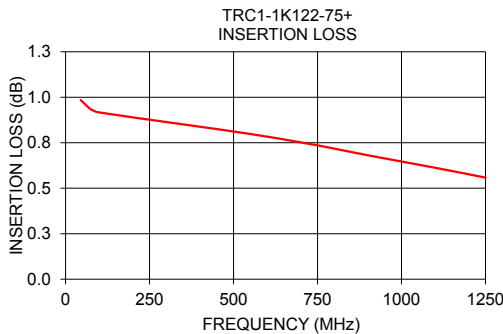


Outline Dimensions (inch mm)

A	B	C	D	E	F	G
.117	.170	.130	.100	.102	.035	.040
2.97	4.32	3.30	2.54	2.59	0.89	1.02
H	J	K	L	M	N	wt
.039	.124	.047	.007	0.098	.145	grams
0.99	3.15	1.19	0.18	2.49	3.68	0.10

Typical Performance Data

Frequency (MHz)	Insertion Loss (Avg.) (dB)	Input R. Loss (dB)	Amplitude Unbalance (dB)	Phase Unbalance (Deg.)
20.00	0.98	17.13	0.06	0.20
75.00	0.93	20.94	0.08	0.73
100.00	0.92	21.69	0.09	0.91
350.00	0.85	25.15	0.12	2.65
550.00	0.80	26.82	0.09	3.78
700.00	0.75	27.12	0.06	4.39
800.00	0.72	26.63	0.03	4.66
900.00	0.68	25.76	0.02	4.93
1100.00	0.61	23.67	0.11	5.12
1250.00	0.56	22.24	0.20	5.18



Additional 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