

Ceramic

RF Transformer

TCO1-462+

50Ω 3300 to 5900 MHz 1:1 Ratio

The Big Deal

- Tiny size, 0402
- Industry leading combination of size/bandwidth
- Good Power handling



CASE STYLE: NK0402C

Product Overview

Mini-Circuits' TCO1-462+ is a tiny ceramic RF balun transformer with an impedance ratio of 1:1, covering a variety of wireless communications applications from 3300 to 5900 MHz. This model provides low insertion loss, low phase unbalance (relative to 180°), low amplitude unbalance, and RF input power handling up to 2W. Fabricated using LTCC technology, the unit comes housed in a tiny, rugged ceramic package suitable for harsh operating environments.

Key Features

Feature	Advantages
2W power handling	Supports a wide range of power requirements
Tiny size, 0402	Accommodates tight space requirements for dense PCB layouts.
LTCC construction	LTCC process enables tiny size and low cost, suitable for high-volume production. Rugged ceramic package provides excellent reliability in harsh operating environments.
Wrap-around terminations	Provides excellent solderability and easy visual inspection

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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



Available Tape and Reel at no extra cost

Reel Size	Devices/Reel
7"	20, 50, 100, 200, 500, 1000, 4000

Features

- miniature size 0402 (0.039"[1.0mm] x 0.020"[0.5mm] x 0.015"[0.37mm])
- low insertion loss
- LTCC construction
- aqueous washable

Applications

- WLAN/Wi-Fi
- 5G sub 6 GHz
- LTE

Electrical Specifications at 25°C

Parameter	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio			1		
Frequency Range		3300	—	5900	MHz
Insertion Loss ¹	3300 - 5900	—	0.8	—	dB
Amplitude Unbalance	3300 - 4200	—	1.7	—	dB
	4200 - 5900	—	0.7	—	dB
Phase Unbalance ²	3300 - 5900	—	10	—	Degree
Unbalance Return Loss	3300 - 5900	—	13	—	dB

1. Tested on Evaluation Board TB-TCO1-462+

2. Relative to 180°

Maximum Ratings

Parameter	Ratings
Operating Temperature	-55°C to 125°C
Storage Temperature*	-55°C to 125°C
RF Power**	2W at 25°C

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

* Refer to product storage temperature after installation.

Suggestion for T&R unused product storage condition: +5~+35°C, Humidity 45~75%RH, 12 Month max.

** Derate linearly to 0.5W at 125°C.

Pad Connections

Function	Pad Number
PRIMARY DOT (Unbalanced Port)	1
PRIMARY (GND)	4
SECONDARY DOT (Balanced)	2
SECONDARY (Balanced)	3

Configuration G

