Ceramic

Bandpass Filter & Balun BBFCG2-532+

50Ω 5000 to 5700 MHz

The Big Deal

- Tiny size, (0805)
- Compact design includes Balun & Filter in one package
- Low cost

CASE STYLE: GE0805C-2

Product Overview

Mini-Circuits' BBFCG2-532+ is a tiny ceramic RF balun filter with an impedance ratio of 1:2, covering a variety of wireless communications applications from 5000 to 5700 MHz. This model provides low insertion loss, low phase unbalance (relative to 180°), low amplitude unbalance, and RF input power handling up to 2W. It provides DC isolation from input to output allowing it to be used for DC biasing of external circuits at the output. Fabricated using LTCC technology, the unit comes housed in a tiny, rugged ceramic package (0.079" x 0.049" x 0.037") suitable for harsh operating environments.

Key Features

Feature	Advantages
Compact Design	Integrates fiter and balun in one tiny package
2W power handling	Supports a wide range of power requirements
DC Isolated from input to output	Can be used to DC bias external circuits at the output.
Tiny size, 0805	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.

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Generic photo used for illustration purposes only

CASE STYLE: GE0805C-2

+RoHS Compliant

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

Features

- Small size (0.079"x0.049"x0.037")
- Temperature stable
- Hermetically sealed

Applications

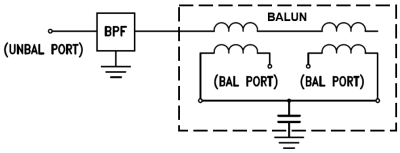
- ISM Band
- WiFi / WLAN

Electrical Specifications at 25°C

Parameter		F#	Frequency (MHz)	Min.	Typ.	Max.	Unit
Impedance Ratio					2		
Pass Band	Insertion Loss[1]	F1-F2	5000 - 5700	—	—	3	dB
	Return Loss	F1-F2	5000 - 5700	9.5	—	—	dB
Stop Band, Lower	Rejection	DC - F3	10 - 3000	30	—	—	dB
Stop Band, Upper	Rejection	F4-F5	8200 - 11000	20	—	—	dB
Amplitude Unbalance		F1-F2	5000 - 5700	—	2	—	dB
Phase Unbalance		F1-F2	5000 - 5700	—	5	15	degree

1. Tested on Evaluation Board TB-BBFCG2-532+

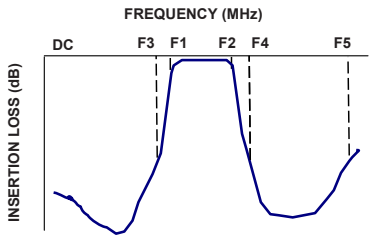
Functional Schematic

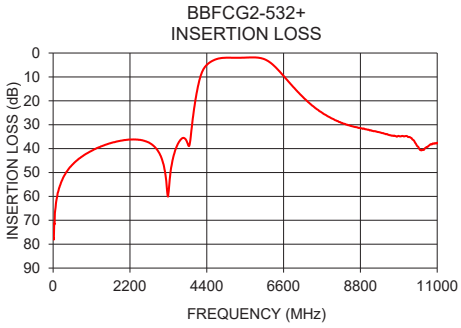


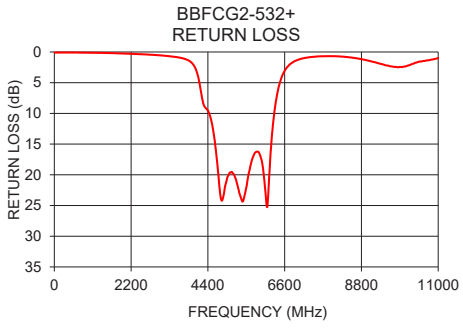
Maximum Ratings	
Operating Temperature	-55°C to 125°C
Storage Temperature[2]	-55°C to 125°C
RF Power Input[3]	2W at 25°C

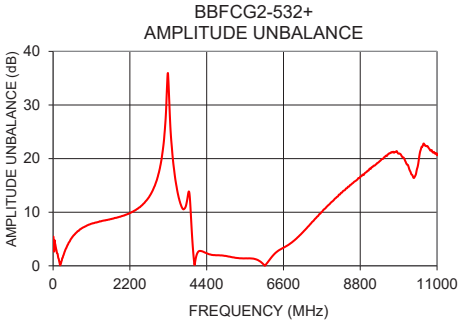
2. Refer to product storage temperature after installation
   Suggestion for T&R unused product storage condition:
   +5 ~ +35 °C, Humidity 45~75%RH, 12 month Max
3. Derate linearly to 0.5W at 125°C.
   Permanent damage may occur if any of these limits exceeded.

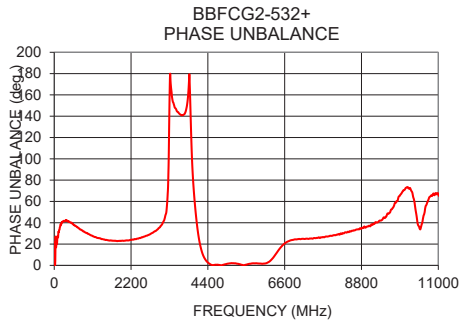
Typical Frequency Response











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

Typical Performance Data

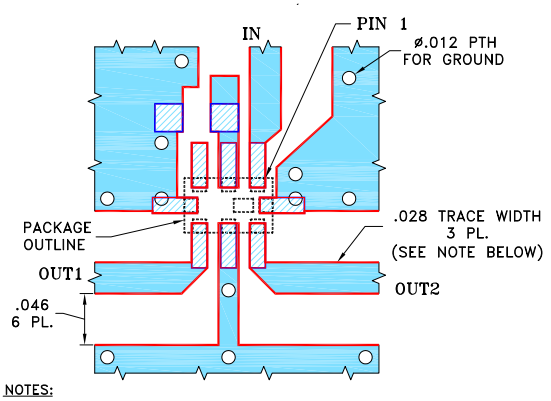
Frequency (GHz)	Insertion Loss (dB)	Return Loss (dB)	Amplitude Unbalance (dB)	Phase Unbalance (Deg,)
10	77.38	0.10	5.44	21.45
1000	41.74	0.13	7.61	29.18
2000	36.54	0.25	9.33	23.13
3000	40.89	0.54	16.63	35.07
4000	27.45	2.21	3.74	68.86
5000	1.96	19.95	1.77	1.75
5700	1.84	17.01	1.36	1.94
6000	2.33	19.91	0.45	1.66
7000	16.14	1.23	5.28	24.74
8200	28.89	0.73	13.30	29.95
9000	32.07	1.41	17.66	36.74
11000	37.53	1.00	20.63	66.73

Pad Connections

UNBALANCED PORT	1
BALANCED PORT	5,7
GROUND	4,6,8
NC	3
NC or DC Feed	2

Product Marking: N/A

Evaluation Board MCL P/N: TB-BBFCG2-532+
Suggested PCB Layout (PL-551)

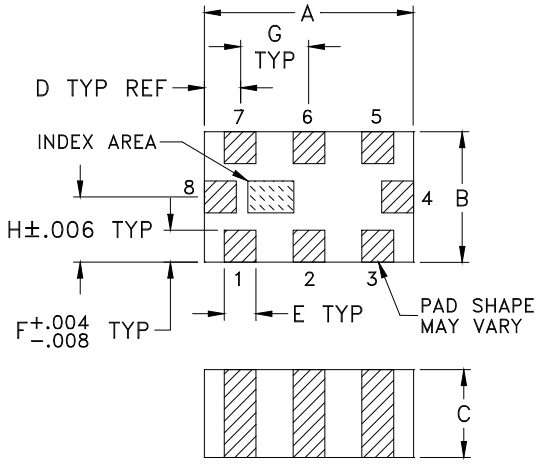


NOTES:
1. TRACE WIDTH IS SHOWN FOR FR4, GRADE IT-180TC (ITEQ CORP.) WITH DIELECTRIC THICKNESS .016±.0015. COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

Outline Drawing



Outline Dimensions (inch / mm)

A	B	C	D	E
.079	.049	.037	.014	.012
2.01	1.24	0.94	0.36	0.30

F	G	H	wt
.012	.026	.025	grams
0.30	0.66	0.64	.008