



Bandpass Filter & Balun **BBFCG2-362+**

50Ω 3250 to 3950 MHz

THE BIG DEAL

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



Generic photo used for illustration purposes only

CASE STYLE: GE0805C-15

+RoHS Compliant

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

APPLICATIONS

- Telecommunications
- 5G sub 6GHz

PRODUCT OVERVIEW

Mini-Circuits' BBFCG2-362+ is a tiny ceramic RF balun filter with an impedance ratio of 1:2, covering a variety of wireless communications applications from 3250 to 3950 MHz. This model provides low insertion loss, low phase unbalance (relative to 180°), low amplitude unbalance. 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 filter and balun in one tiny package
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.



CERAMIC

Bandpass Filter & Balun **BBFCG2-362+**

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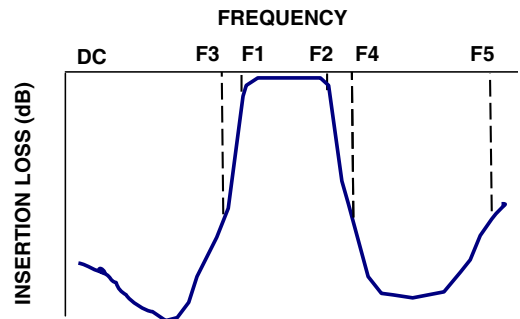
ELECTRICAL SPECIFICATIONS AT 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Units
Impedance Ratio	-	-	2			
Insertion Loss	F1-F2	3250 - 3950	-	-	3	dB
Return Loss	Unbalanced Port	F1-F2	8.5	-	-	dB
	Balanced Port	F1-F2	8.5	-	-	dB
Stopband Rejection	DC-F3	0 - 2498	27	-	-	dB
		2498 - 2598	21	-	-	
		2598 - 2648	15	-	-	
	F4-F5	7846 - 9848	27	-	-	
Amplitude Unbalance ±	F1-F2	3250 - 3950	-1.5	-	1.5	dB
Phase Unbalance	F1-F2	3250 - 3950	-13	-	13	Degree

MAXIMUM RATINGS

Parameter	Ratings
Operating Temperature	-55°C to 125°C
Storage Temperature	-55°C to 125°C
RF Power Input	0.5W at 25°C

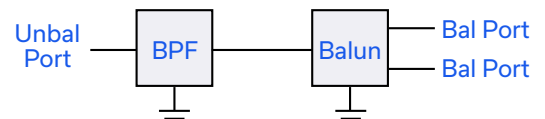
TYPICAL FREQUENCY RESPONSE



DC INTERFACE TABLE

Unbalance Port - GND	DC short
Unbalance Port - Balance Ports	DC open
Balance port - GND	DC open
Balance port-Balance Port	DC short

FUNCTIONAL SCHEMATIC





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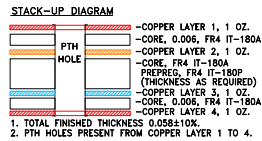
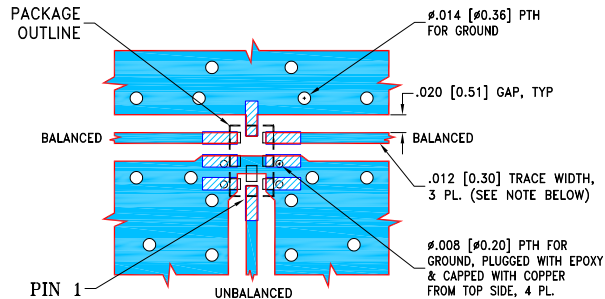
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PAD CONNECTIONS

UNBALANCED PORT	1
BALANCED PORT	4,6
GROUND	2,3,7,8
NOT CONNECT OR GND	5

PRODUCT MARKING: N/A

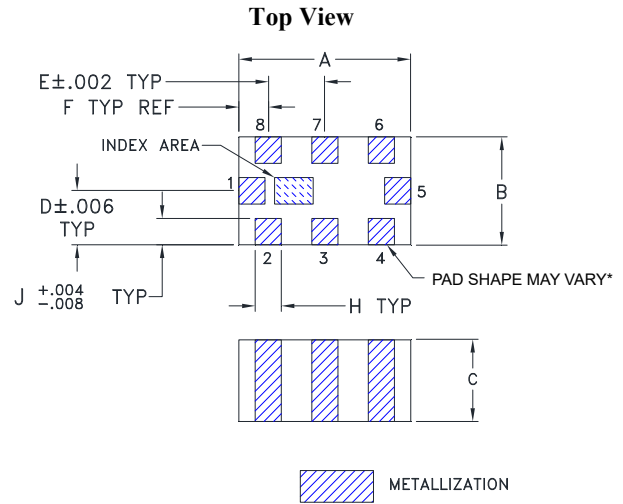
EVALUATION BOARD MCL P/N: TB-BBFCG2-362+
SUGGESTED PCB LAYOUT (PL-711)



NOTES:
1. TRACE WIDTH AND GAP ARE SHOWN FOR LAYER 1 (SEE MULTILAYER STACK-UP DIAGRAM). FOR OTHER MATERIALS TRACE WIDTH AND GAP MAY NEED TO BE MODIFIED.
2. COPPER LAYERS 2,3,4 OF THE PCB ARE CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).
- DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

OUTLINE DRAWING



*During the manufacturing process, the pad shape may not be rectangular and may take on a more semi-circle shape. However, the pad dimensions reflect this, with the pad shape being within the specified lengths. The metallization compensates accordingly and so performance will not be affected. In addition, solderability will not be influenced by the pad shape.

OUTLINE DIMENSIONS (Inches / mm)

A	B	C	D	E	F	G	H	J	wt
.079	.049	.037	.025	.026	.014	.110	.012	.010	grams
2.00	1.25	0.95	0.63	0.65	0.35	2.80	0.30	0.25	.008



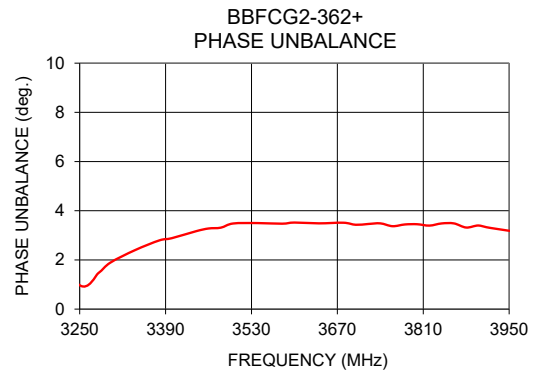
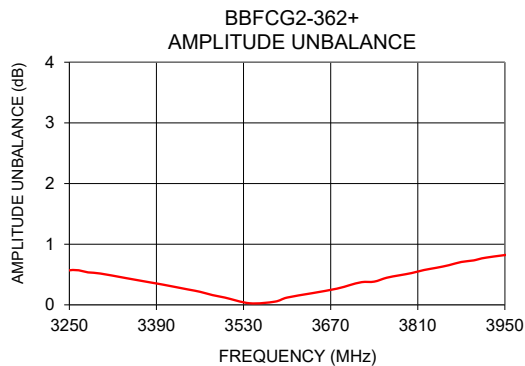
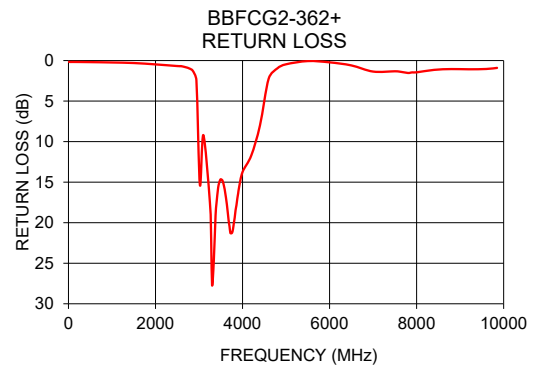
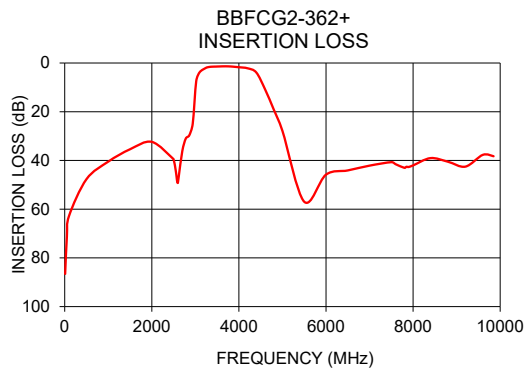
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TYPICAL PERFORMANCE DATA

Frequency (MHz)	Insertion Loss (dB)	Return Loss (dB)	Amplitude Unbalance (dB)	Phase Unbalance (Deg.)
10	86.57	0.16	14.06	171.60
1000	40.48	0.24	36.79	140.94
2498	39.44	0.68	14.37	168.83
2598	49.26	0.71	1.42	150.04
3250	1.93	17.50	0.57	0.97
3920	1.59	15.66	0.78	3.30
5500	56.94	0.06	0.08	167.53
6000	45.83	0.22	3.73	179.96
7000	42.13	1.36	2.20	178.31
8000	42.04	1.45	1.68	177.96
9200	42.54	1.08	1.06	172.86
9848	38.28	0.90	2.75	178.80



- 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.
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