

LTCC

Bandpass Filter & Balun

50Ω 2400 to 2500 MHz

BFGE1-252R+



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

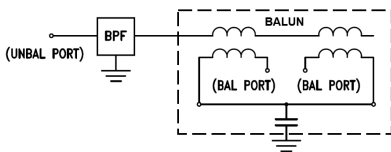
Features

- Low amplitude unbalance 0.3 dB typ.
- Small size (0.079"x0.049"x0.037")
- Temperature stable
- Hermetically sealed

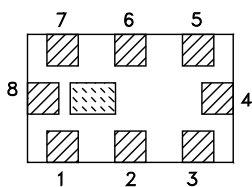
Applications

- ISM Band
- Bluetooth
- Zigbee
- WiFi / WLAN

Simplified Schematic



Top View



Pad Connections

Unbalanced Port	1
Balanced Port	5, 7
GND	4, 6, 8
NC	3
NC or DC Feed	2

Electrical Specifications at 25°C

Parameter	F#	Frequency (MHz)	Min.	Typ.	Max.	Unit	
Impedance Ratio				1			
Pass Band	Insertion Loss ¹	F1-F2	2400 - 2500	—	1.9	2.3	dB
	Return Loss	F1-F2	2400 - 2500	9.5	25	—	dB
Stop Band, Lower	Rejection		DC - 1000	35	44	—	dB
			1000 - 2000	31	39	—	dB
Stop Band, Upper	Rejection		4800 - 5000	34	49	—	dB
			7200 - 7500	23	34	—	dB
Amplitude Unbalance		2400 - 2500	—	0.3	1.5	dB	
Phase Unbalance		2400 - 2500	—	1.5	10	degree	

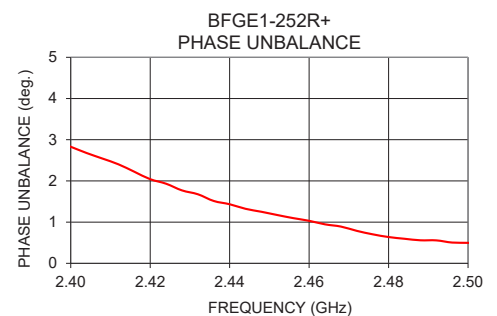
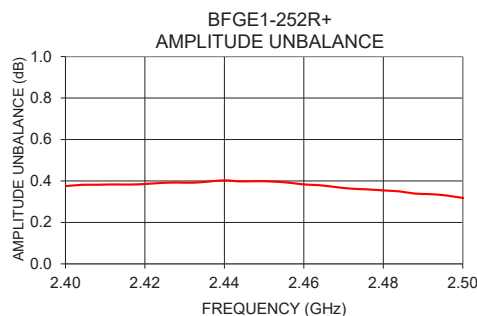
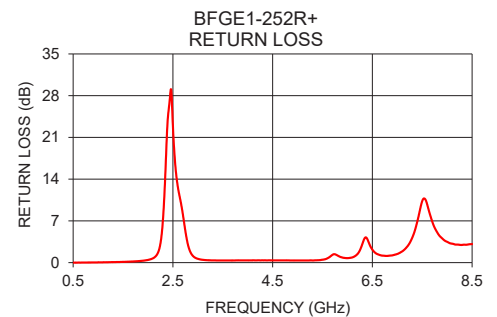
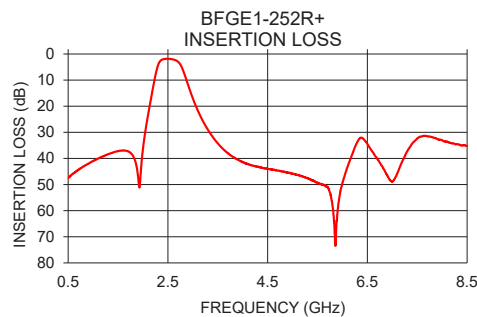
1. Tested on Evaluation Board TB-1034+

Maximum Ratings

Operating Temperature	-40°C to +85°C
Storage Temperature*	-40°C to +85°C
RF Power Input**	1W @25°C

* 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

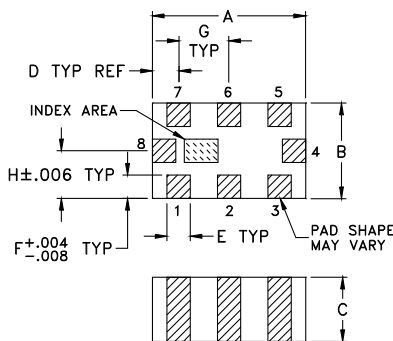
**Derate linearly to 0.5W at 85°C.



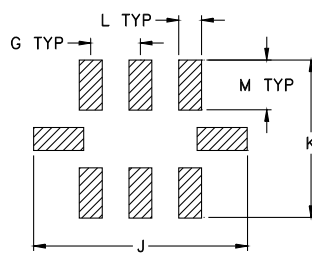
Typical Performance Data

Frequency (GHz)	Insertion Loss (dB)	Return Loss (dB)	Amplitude Unbalance (dB)	Phase Unbalance (Deg.)
0.50	47.45	0.01	5.69	156.12
0.70	44.41	0.01	5.95	161.63
1.00	41.01	0.04	6.31	165.18
1.50	37.18	0.13	6.50	167.44
2.00	36.33	0.45	3.63	156.15
2.40	2.05	24.38	0.38	2.83
2.45	1.87	28.71	0.40	1.17
2.50	1.83	22.94	0.32	0.50
3.50	34.20	0.35	3.82	175.71
4.80	45.05	0.37	1.36	179.32
4.90	45.38	0.37	1.36	179.13
5.00	45.90	0.36	1.35	178.90
5.90	60.87	0.85	0.25	177.26
7.20	41.18	2.70	0.24	174.36
7.50	32.30	10.33	0.14	174.80
8.50	35.24	3.11	0.42	175.67

Outline Drawing

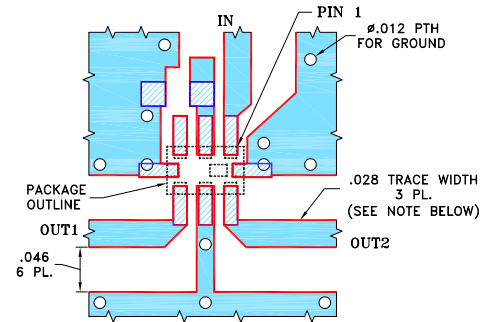


PCB Land Pattern



Suggested Layout,
Tolerance to be within .002

Demo Board MCL P/N: TB-1034+ Suggested PCB Layout (PL-551)



NOTES:

- 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.
 - 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 Dimensions (inch/mm)

A	B	C	D	E	F	G
.079	.049	.037	.014	.012	.012	.026
2.01	1.24	0.94	0.36	0.30	0.30	0.66
H	J	K	L	M	wt	
.025	.134	.104	0.014	.039	grams	
0.64	3.40	2.64	0.36	0.99	.008	

Additional Notes

- 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.
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