

# Ceramic Bandpass Filter

50Ω 4900 to 5920 MHz

BPGE-542R+



Generic photo used for illustration purposes only

CASE STYLE: GE0805C-3

## Features

- Miniature size 0805 (0.079" [2.0mm] x 0.049" [1.25mm] x 0.037" [0.95mm])
- Low cost
- Aqueous washable

+RoHS Compliant

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

## Applications

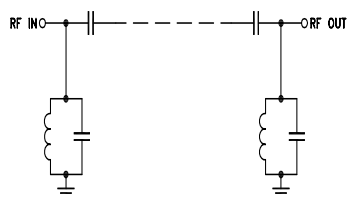
- ISM Band
- WLAN
- Bluetooth
- Zigbee

## Electrical Specifications<sup>1</sup> at 25°C

| Parameter        | F#               | Frequency (MHz) | Min. | Typ. | Max. | Unit |
|------------------|------------------|-----------------|------|------|------|------|
| Pass Band        | Center Frequency | —               | —    | 5400 | —    | dB   |
|                  | Insertion Loss   | F1-F2           | —    | 0.9  | 1.9  | dB   |
|                  | VSWR             | F1-F2           | —    | 1.2  | 2.0  | :1   |
| Stop Band, Lower | Insertion Loss   | DC-F3           | 30   | 49   | —    | dB   |
| Stop Band, Upper | Insertion Loss   | F4-F5           | 25   | 32   | —    | dB   |
|                  |                  | F6-F7           | 5    | 30   | —    | dB   |

1. Tested on Evaluation Board TB-1028+.

## Functional Schematic



## Maximum Ratings

|                                  |               |
|----------------------------------|---------------|
| Operating Temperature            | -40°C to 85°C |
| Storage Temperature <sup>2</sup> | -40°C to 85°C |
| RF Power Input <sup>3</sup>      | 2W at 25°C    |

2. Refer to product storage temperature after installation

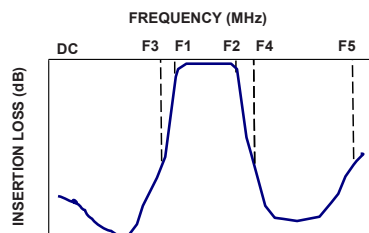
Suggestion for T&R unused product storage condition:

+5 ~ +35 °C, Humidity 45~75%RH, 12 month Max

3. Derate linearly to 1W at 85°C

Permanent damage may occur if any of these limits exceeded.

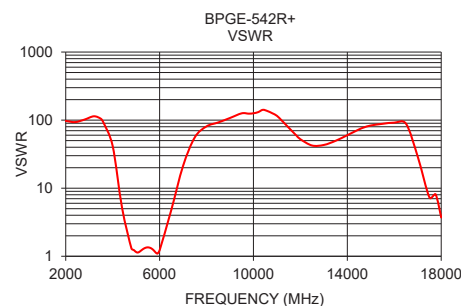
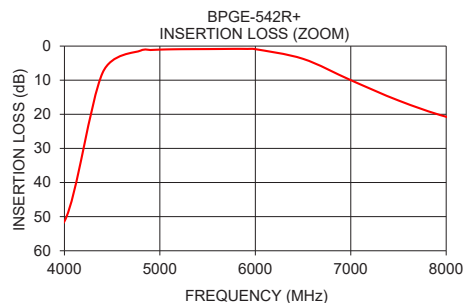
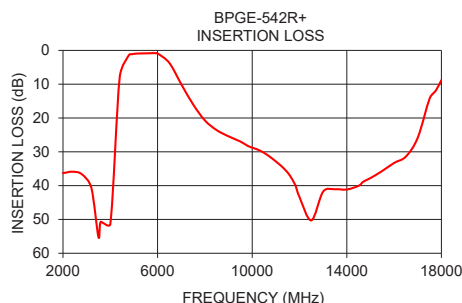
## Typical Frequency Response



## Typical Performance Data<sup>4</sup> at 25°C

| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 2000            | 36.30               | 97.37     |
| 3500            | 55.21               | 104.57    |
| 4000            | 51.38               | 41.74     |
| 4900            | 1.15                | 1.24      |
| 5920            | 0.83                | 1.10      |
| 7000            | 9.99                | 21.26     |
| 8000            | 20.71               | 80.91     |
| 9800            | 28.19               | 124.41    |
| 10000           | 28.76               | 126.10    |
| 11000           | 32.84               | 115.63    |
| 11840           | 40.13               | 59.03     |
| 13000           | 41.76               | 43.18     |
| 14000           | 41.14               | 60.10     |
| 14700           | 38.82               | 77.89     |
| 16000           | 33.28               | 91.79     |
| 17760           | 11.93               | 8.14      |
| 18000           | 8.81                | 3.71      |

4. Measured with Agilent E5071B network analyzer using impedance conversion and port extension.



## 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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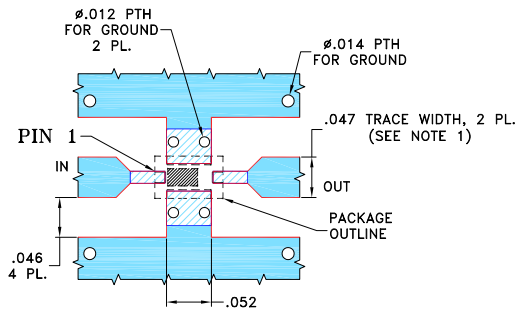
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Pad Connections

|        |     |
|--------|-----|
| INPUT  | 1   |
| OUTPUT | 3   |
| GROUND | 2,4 |

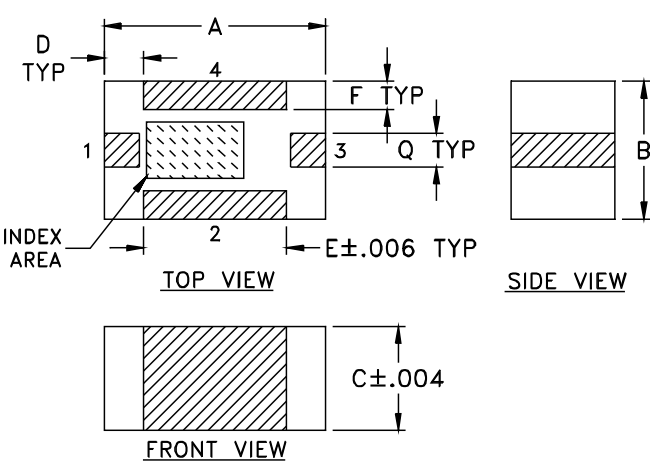
Product Marking: N/A

Evaluation Board MCL P/N: TB-BPGE-542R+  
Suggested PCB Layout (PL-566)



- NOTES:
- TRACE WIDTH IS SHOWN FOR ROGERS R04233 WITH DIELECTRIC THICKNESS .020±.0015. COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH AND 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 Drawing



Outline Dimensions ( inch mm )

| A    | B    | C    | D    | E    | F    | Q    | wt    |
|------|------|------|------|------|------|------|-------|
| .079 | .049 | .037 | .014 | .051 | .010 | .012 | grams |
| 2.01 | 1.24 | 0.94 | 0.36 | 1.30 | 0.25 | 0.30 | .020  |

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