

Ceramic Bandpass Filter

BFCQ-2802+

50Ω 27.5 to 29.5 GHz

The Big Deal

- Innovative and industry leading
- 5G n257 bandpass filter
- Low Insertion Loss – Mid band 2.0dB typical
- Surface mountable pick and place standard case style
- Small size 2.5mm x 2.0mm
- High quality distributed filter topology
- Wide rejection band



CASE STYLE: NL1008C-6

Product Overview

The BFCQ-2802+ LTCC Bandpass Filter covers the 5G n257 band. This corresponds to a passband of 27.5 to 29.5 GHz, with as low as 2dB passband loss, and up to 40dB stopband rejection. This model handles up to 1W RF input power and provides a wide operating temperature range from -55 to +125°C. Utilizing a proprietary LTCC material system and a distributed filter topology, this filter is able to achieve repeatable performance on a lot-to-lot basis, up to mmWave frequencies.

Key Features

| Feature | Advantages |
|--|---|
| 5G n257 band compatible | Designed for 5G Telecommunications, n257 band, 27.5 – 29.5 GHz |
| Proprietary mmWave compatible LTCC material system | Low loss and repeatable performance on a lot-to-lot basis up to mmWave frequencies. |
| Cost effective | LTCC is scalable technology that allows for cost reduction at volume. |
| Small size (2.5mm x 2.0mm) | Allows for high layout density of circuit boards, while minimizing effects of parasitics. |
| Surface Mountable | Suitable for very high volume automated assembly process. |

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



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BFCQ-2802+



Generic photo used for illustration purposes only

CASE STYLE: NL1008C-6

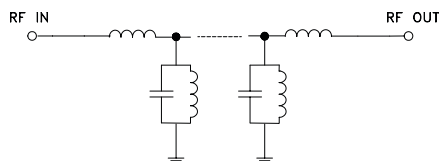
Features

- Standard miniature 1008 package case style
- 5G n257 band compatible
- Shielded construction preventing filter from de-tuning
- Reduced footprint area by employing LGA (land grid array)
- Suited for very high-volume production
- Surface mountable

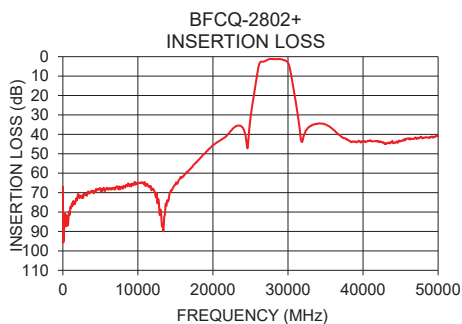
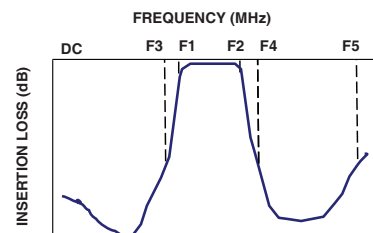
Applications

- 5G Telecommunications

Functional Schematic



Typical Frequency Response

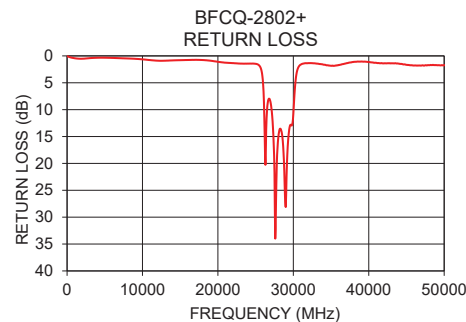
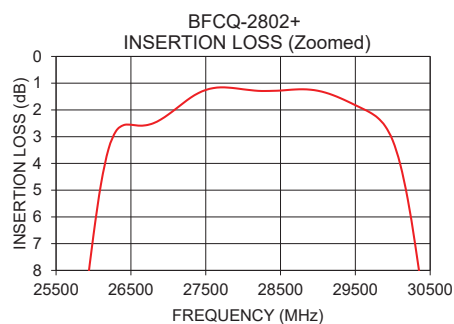


| Maximum Ratings | |
|-----------------------|----------------|
| Operating Temperature | -55°C to 125°C |
| Storage Temperature | -55°C to 125°C |
| RF Power Input | 1W |

Permanent damage may occur if any of these limits exceeded.

Typical Performance Data at 25°C

| Frequency (MHz) | Insertion Loss (dB) | Return Loss (dB) |
|-----------------|---------------------|------------------|
| 10 | 66.98 | 0.06 |
| 3000 | 70.76 | 0.42 |
| 6000 | 68.51 | 0.38 |
| 9000 | 65.69 | 0.54 |
| 15000 | 65.83 | 0.80 |
| 21000 | 43.02 | 1.26 |
| 24400 | 42.08 | 1.44 |
| 27500 | 1.25 | 21.77 |
| 28400 | 1.29 | 13.91 |
| 29500 | 1.82 | 13.29 |
| 35000 | 34.85 | 1.83 |
| 39000 | 43.79 | 1.04 |
| 41000 | 43.18 | 1.29 |
| 44000 | 44.49 | 1.44 |
| 50000 | 40.96 | 1.73 |



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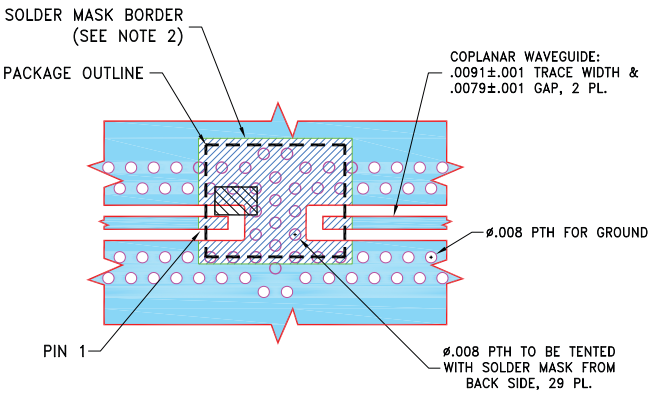
REV. OR
ECO-007929
BFCQ-2802+
DL/CP
210604
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Pad Connections

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

Product Marking: NT

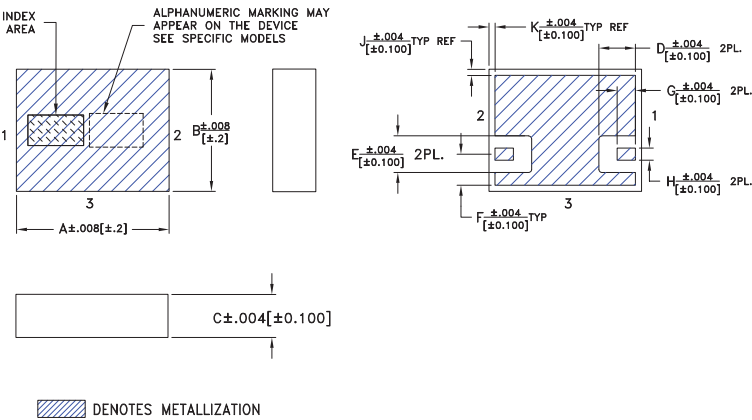
Evaluation Board MCL P/N: TB-BFCQ-2802C+
Suggested PCB Layout (PL-707)



- NOTES:
1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR MEGTRON-7 R5785(N); DIELECTRIC THICKNESS: .0049±.001; CLOTH STYLE: 2116; COPPER: HVLP/HVLP. FOR OTHER MATERIALS LINE WIDTH & GAP MAY NEED TO BE MODIFIED.
 2. SOLDER MASK OPENING FOR COMPONENT SOLDERING HAS BEEN INCREASED AGAINST PCB LAND PATTERN RECOMMENDATIONS PER NL1008C-6 AND CAN BE DEVIATED FROM THIS DRAWING TO COMPLY WITH CUSTOMERS' DESIGN RULES.
 3. 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 | G | H | J | K | wt |
|------|------|------|------|------|------|------|------|------|------|-------|
| .098 | .079 | .028 | .024 | .024 | .020 | .012 | .008 | .004 | .004 | grams |
| 2.49 | 2.01 | 0.71 | 0.6 | 0.6 | 0.51 | 0.3 | 0.2 | 0.1 | 0.1 | .019 |

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