

50Ω

25.2 to 26.6 GHz

## The Big Deal

- Innovative and industry leading
- 5G n258 bandpass filter
- Low Insertion Loss – Mid band 2.5dB 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-2552+ LTCC Bandpass Filter covers the 5G n258 band. This corresponds to a passband of 25.2 to 26.6 GHz, with as low as 2.5dB 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 n258 band compatible                            | Designed for 5G Telecommunications, n258 band, 25.2 – 26.6 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

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# Ceramic Bandpass Filter

50Ω 25.2 to 26.6 GHz

BFCQ-2552+



Generic photo used for illustration purposes only

CASE STYLE: NL1008C-6

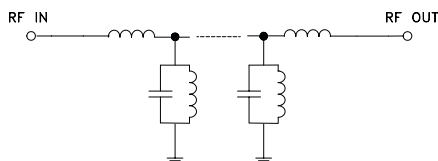
## Features

- Standard miniature 1008 package case style
- 5G n258 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



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

| Parameter        | F#                | Frequency (GHz) | Min.        | Typ. | Max. | Unit |
|------------------|-------------------|-----------------|-------------|------|------|------|
| Pass Band        | Center Frequency  | —               | —           | 25.8 | —    | GHz  |
|                  | Insertion Loss    | F1-F2           | 25.2 - 26.6 | 2.5  | 3.3  | dB   |
|                  | Return Loss (In)  | F1-F2           | 25.2 - 26.6 | 13   | —    | dB   |
|                  | Return Loss (Out) | F1-F2           | 25.2 - 26.6 | 13   | —    | dB   |
| Stop Band, Lower | Insertion Loss    | DC-F3           | 0.1 - 18    | 40   | 55   | dB   |
|                  |                   | DC-F3           | 18 - 22.2   | 20   | 35   |      |
| Stop Band, Upper | Insertion Loss    | F4-F5           | 29.5 - 32   | 20   | 35   | dB   |
|                  |                   | F4-F5           | 32 - 45     | 35   | 44   |      |
|                  |                   | F4-F5           | 45 - 50     | 30   | 40   |      |

1. Measured on Mini-Circuits Test Board TB-BFCQ-2552C+ with feedline losses removed by normalization of S12 and S21 traces to measurement of TB thru-line.

## Maximum Ratings

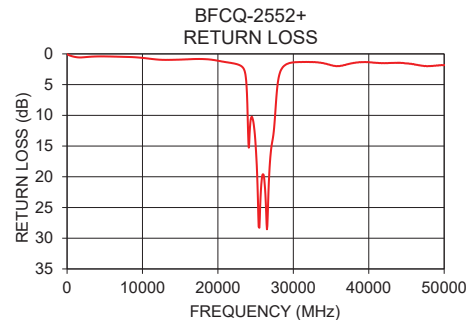
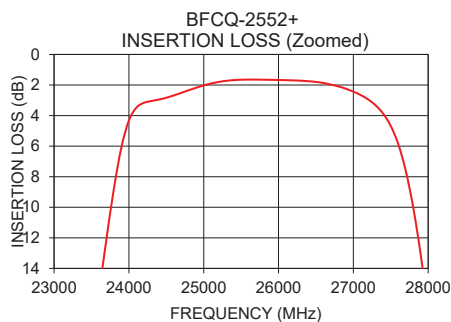
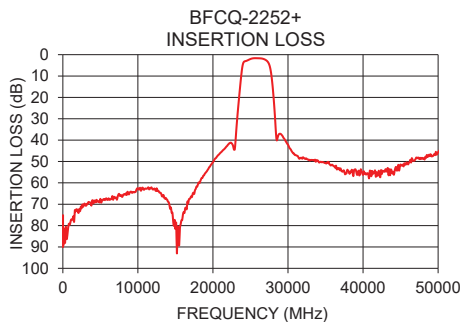
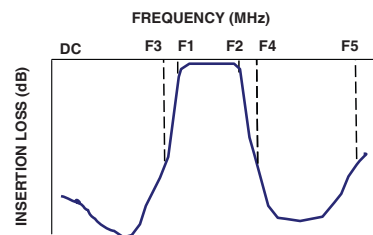
|                       |                |
|-----------------------|----------------|
| Operating Temperature | -55°C to 125°C |
| Storage Temperature   | -55°C to 125°C |
| RF Power Input        | 1W             |

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              | 90.06               | 0.06             |
| 3000            | 70.46               | 0.47             |
| 6000            | 67.83               | 0.43             |
| 9000            | 64.21               | 0.55             |
| 15000           | 81.63               | 0.93             |
| 21400           | 44.52               | 1.41             |
| 23000           | 40.72               | 1.91             |
| 25200           | 1.80                | 19.62            |
| 25800           | 1.65                | 20.57            |
| 26600           | 1.87                | 26.38            |
| 30500           | 45.26               | 1.34             |
| 33000           | 49.27               | 1.37             |
| 40000           | 56.27               | 1.35             |
| 45000           | 51.38               | 1.54             |
| 50000           | 45.61               | 1.82             |

## Typical Frequency Response



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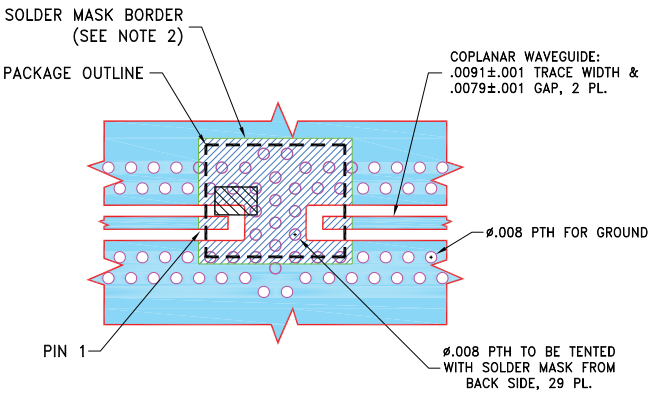
REV. OR  
ECO-007929  
BFCQ-2552+  
DL/CP  
210601  
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Pad Connections

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

Product Marking: NV

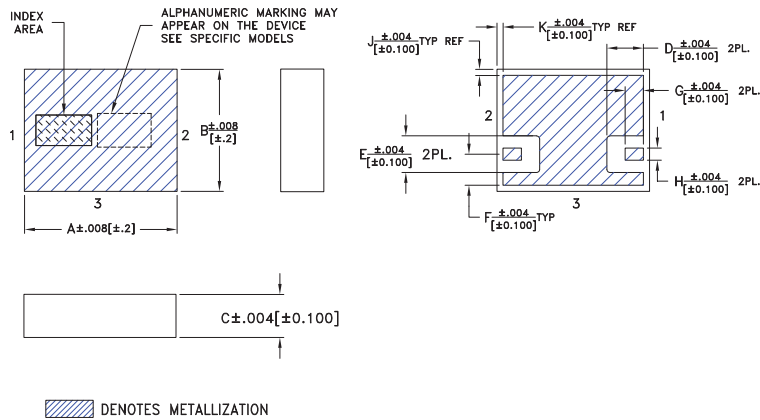
Evaluation Board MCL P/N: TB-BFCQ-2552C+  
Suggested PCB Layout (PL-707)



- NOTES:
1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR MEGTRON-7 R5785(N); DIELECTRIC THICKNESS: .0049±.001; CLOTH STYLE: Z116; 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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