



LTCC SURFACE MOUNT

Bandpass Filter

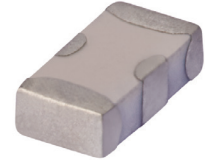
BFCN-2840+

50Ω

2750 to 2930 MHz

THE BIG DEAL

- Good Rejection, 25 dB Typ.
- 1206 Surface Mount Footprint
- Power Handling: 1.5 Watts

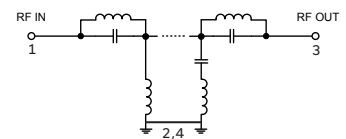


Generic photo used for illustration purposes only

APPLICATIONS

- Harmonic Rejection
- Transmitters / Receivers
- WiMAX

FUNCTIONAL DIAGRAM



PRODUCT OVERVIEW

Mini-Circuits' BFCN-2840+ LTCC Band Pass Filter is constructed with multiple layers in order to achieve a miniature size and high repeatability of performance. Wrap-around terminations minimize variations in performance due to parasitics. Covering 180 MHz passband, these units offer low insertion loss and good rejection.

KEY FEATURES

| Features | Advantages |
|-------------------------|---|
| Small Size, 1206 | Allows for high layout density of circuit boards, while minimizing the effects of parasitics |
| Wrap around termination | Provides excellent solderability and easy visual inspection capability. |
| LTCC construction | Provides a rugged package that is well suited for tough environments including high humidity and high temperature extremes. |
| Rugged Power handling | Handles up to 1.5 Watts in a small package. |



ELECTRICAL SPECIFICATIONS^{1,2} AT +25°C

| Parameter | F# | Frequency (MHz) | Min. | Typ. | Max. | Units |
|------------------|-------------------------------|-----------------|-------------|------|------|-------|
| Passband | Center Frequency ³ | — | — | 2840 | — | MHz |
| | Insertion Loss | F1-F2 | 2750 - 2930 | — | 7 | dB |
| | Return Loss | F1-F2 | 2750 - 2930 | 6.0 | 12.7 | dB |
| Stop Band, Lower | Rejection | DC-F3 | DC - 1500 | — | 25 | dB |
| | | DC-F4 | DC - 1550 | 20 | — | |
| Stop Band, Upper | Rejection | F5-F6 | 4000 - 4050 | 20 | — | dB |
| | | F6-F7 | 4050 - 6000 | — | 25 | |

1. Tested in Evaluation Board P/N TB-BFCN-2840+.

2. This component should not be used as a DC-block. In applications where DC voltage and/or current is present at either the input or output ports, external DC blocking capacitors are required.

3. Typical variation ± 5%

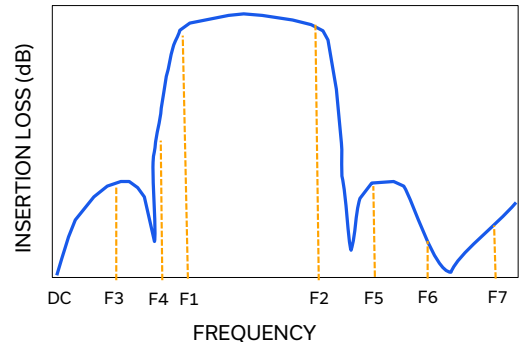
ABSOLUTE MAXIMUM RATINGS⁴

| Parameter | Ratings |
|--------------------------|----------------|
| Operating Temperature | -55°C to 100°C |
| Storage Temperature | -55°C to 100°C |
| Input Power ⁵ | 1.5W @25°C |

4. Permanent damage may occur if any of these limits are exceeded.

5. Power rating applies only to signals within the passband. Power rating above +25°C operating temperature decreases linearly to 0.25W at +100°C.

TYPICAL FREQUENCY RESPONSE





LTCC SURFACE MOUNT

Bandpass Filter

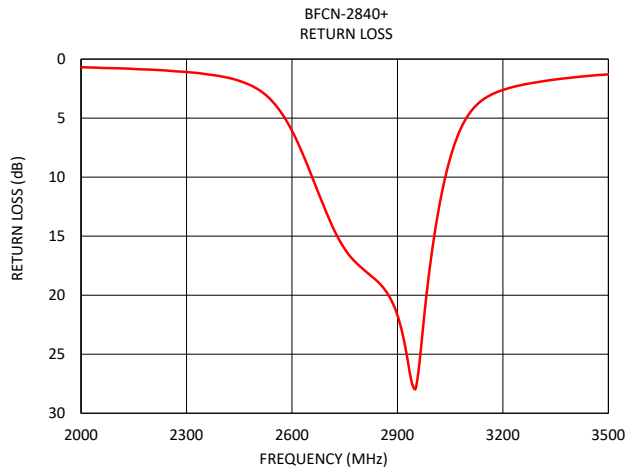
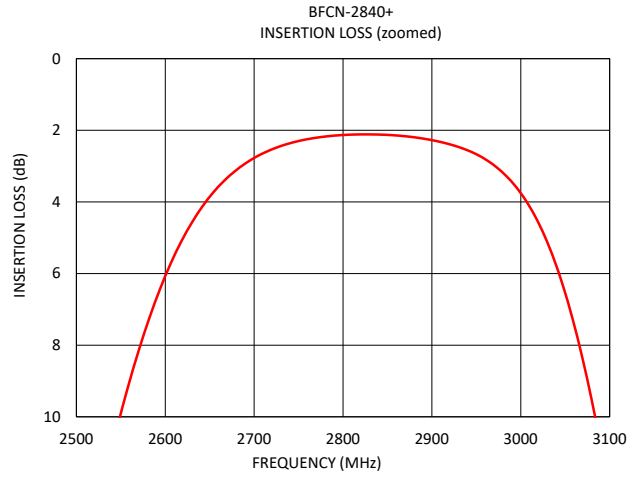
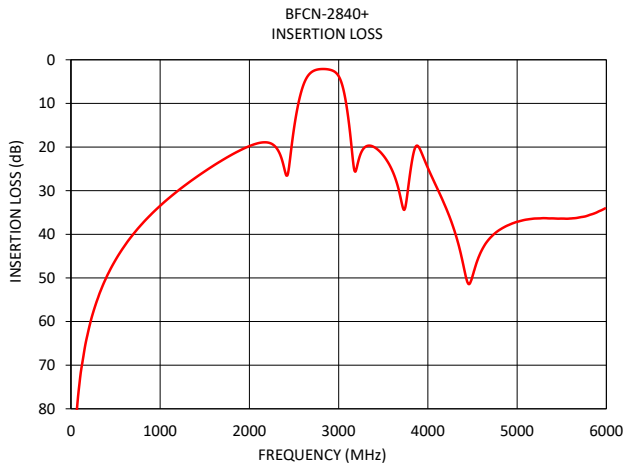
BFCN-2840+

Mini-Circuits

50Ω

2750 to 2930 MHz

TYPICAL PERFORMANCE GRAPHS AT +25°C





FUNCTIONAL DIAGRAM

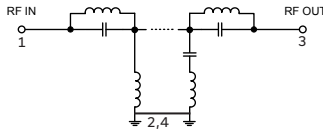
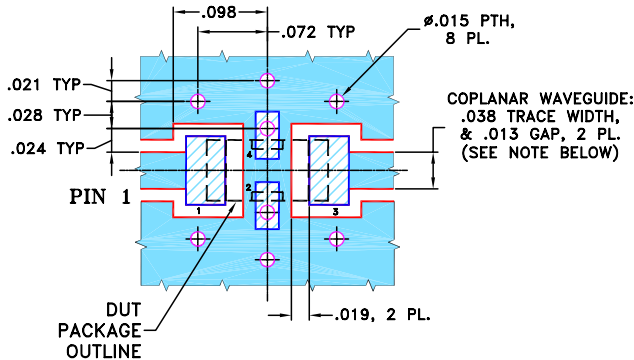


Figure 1. BFCN-2840+ Functional Diagram

PAD DESCRIPTION

| Function | Pad Number | Description |
|------------------|------------|---|
| RF1 ² | 1 | Connects to RF Input Port |
| RF2 ² | 3 | Connects to RF Output Port |
| GROUND | 2,4 | Connects to Ground on PCB, (See drawing PL-137) |

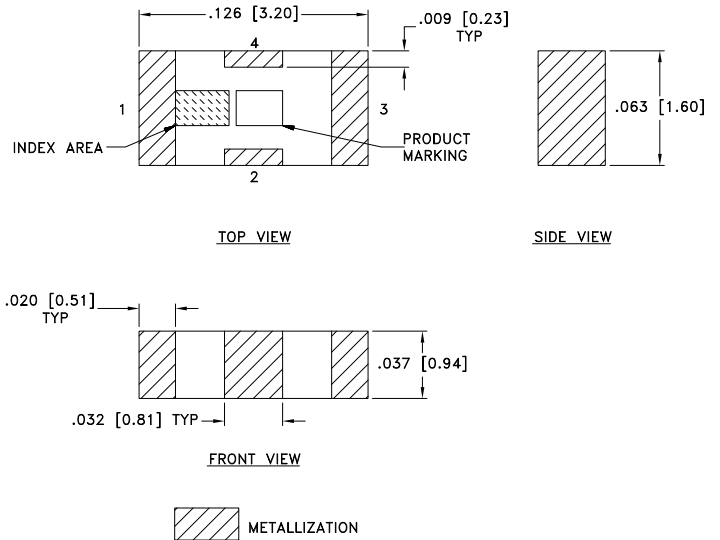
SUGGESTED PCB LAYOUT (PL-137)



- NOTES:**
1. COPLANAR WAVEGUIDE PARAMETERS ARE SHOWN FOR ROGERS RO4350B WITH THICKNESS $.020" \pm .0015"$. COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.
 2. 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

Figure 2. Suggested PCB Layout PL-137

CASE STYLE DRAWING



Weight: .020 grams.
Dimensions are in inches (mm). Tolerances: 2 Pl. $\pm .01$; 3 Pl. $\pm .005$

PRODUCT MARKING*: N/A

*Marking may contain other features or characters for internal lot control.



LTCC SURFACE MOUNT

Bandpass Filter

BFCN-2840+

Mini-Circuits

50Ω

2750 to 2930 MHz

ADDITIONAL DETAILED INFORMATION IS AVAILABLE ON OUR DASH BOARD.

[CLICK HERE](#)

| | |
|---------------------------------|---|
| Performance Data & Graphs | Data Graphs S-Parameter (S2P Files) Data Set (.zip file) De-embedded to device pads |
| Case Style | FV1206 Lead Finish: Nickel Tin |
| RoHS Status | Compliant |
| Tape and Reel | TR-F71 |
| Suggested Layout for PCB Design | PL-137 |
| Evaluation Board | TB-BFCN-2840+ Gerber File |
| Environmental Rating | ENV06 |

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-Circuits' 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/terms/viewterm.html

