Bandpass Filter

BFCO-252+

2400 to 2500 MHz 50O

The Big Deal

- Very good rejection
- Rugged, ceramic construction
- Tiny size



Product Overview

Mini-Circuits' BFCO-252+ is a LTCC Bandpass Filter with a passband from 2400 to 2500 MHz, supporting a variety of applications. This model provides a very good stopband rejection due to strategically constructed layout with minimal interaction between components. It provides a wide operating temperature range from -55 to +125°C. Housed in a tiny 0402 ceramic form factor with wrap-around terminations, the filter is ideal for dense PCB layouts and with minimal performance variation due to parasitics.

Key Features

| Feature | Advantages | | | |
|--------------------------|---|--|--|--|
| Ultra-wide stopband | The LTCC lowpass filter provides a very good stopband rejection suitable for high end applications. | | | |
| LTCC Construction | Provides repeatable performance in a rugged, ceramic package well suited for tough environments such as high humidity and temperature extremes. | | | |
| Tiny size | Saves space in dense circuit board layouts and minimizes the effects of parasitics. | | | |
| Wrap-around terminations | Provides excellent solderability and easy visual inspection | | | |

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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-Circuit 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

50O 2400 to 2500 MHz

BFCO-252+



Generic photo used for illustration purposes only

CASE STYLE: NK0402C-1

+RoHS Compliant

Max.

Unit

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

Features

- Miniature size 0402 (0.039"[1.0mm] x 0.020"[0.5mm] x 0.015"[0.37mm])
- High rejection up to 8.5 GHz
- Low cost
- Aqueous washable

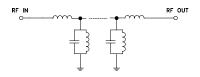
Applications

- ISM Band
- WLAN
- Bluetooth

Frequency (MHz) Тур. Center Frequency 2450 dB Pass Band F1-F2 dΒ Insertion Loss 2400-2500 37 F1-F2 dB Return Loss 2400-2500 12 DC-F3 DC-1500 30 35 dΒ Stop Band, Lower Insertion Loss F3-F4 1500-1800 25 dΒ 20 F4-F5 3200-4500 17 23 dΒ Stop Band, Upper Insertion Loss F5-F6 4500-8500 16 dΒ

Parameter

Functional Schematic



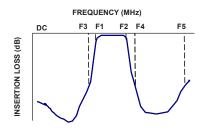
| Maximum Ratings | | | | |
|-----------------------|----------------|--|--|--|
| Operating Temperature | -55°C to 125°C | | | |
| Storage Temperature* | -55°C to 125°C | | | |
| RF Power Input** | 2W at 25°C | | | |

Permanent damage may occur if any of these limits exceeded. *Refer to product storage temperature after installation

Suggestion for T&R unused product storage condition:

+5 ~ +35 °C, Humidity 45~7370....,
** Derate linearly to 0.5W at 125°C +35 °C, Humidity 45~75%RH, 12 month Max

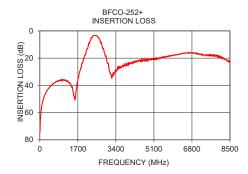
Typical Frequency Response

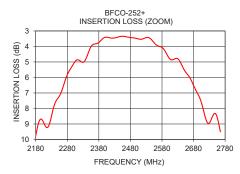


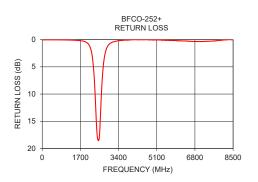
Typical Performance Data at 25°C

Electrical Specifications at 25°C

| Frequency (MHz) | Insertion Loss (dB) | Return Loss (dB) |
|--------------------|------------------------|---------------------|
| 10 | 73.88 | 0.05 |
| 100 | 54.11 | 0.04 |
| 500 | 40.18 | 0.04 |
| 1000 | 36.83 | 0.06 |
| 1500 | 45.53 | 0.13 |
| 1800 | 29.20 | 0.25 |
| 2000 | 18.21 | 0.59 |
| 2400 | 3.41 | 14.21 |
| 2500 | 3.49 | 18.55 |
| 3000 | 22.70 | 0.77 |
| 3200 | 33.41 | 0.39 |
| 4500 | 22.48 | 0.02 |
| 5000 | 21.04 | 0.08 |
| 6000 | 18.00 | 0.21 |
| 7000 | 16.67 | 0.34 |
| 8500 | 22.37 | 0.04 |







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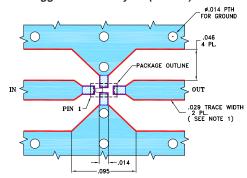
^{1.} Tested on Evaluation Board TB-BFCO-252+

Pad Connections

| INPUT | 3 |
|--------|-----|
| OUTPUT | 1 |
| GROUND | 2.4 |

Product Marking: N/A

Evaluation Board MCL P/N: TB-BFCO-252+ Suggested PCB Layout (PL-552)

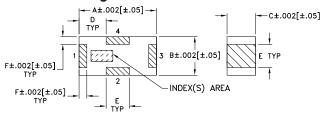


- NOTES:

 1. TRACE WIDTH IS SHOWN FOR FR4, GRADE IT-180TC (ITEQ CORP.)
 WITH DIELECTRIC THICKNESS .016±.0015. COPPER: 1/2 02. EACH SIDE.
 FOR OTHER MATERIALS TRACE WIDTH & GAP MAY NEED TO BE MODIFIED.
 2. BOTTOM SIDE OF THE PE
- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER).

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK.

Outline Drawing



Outline Dimensions (inch)

| wt | F | Е | D | С | В | Α |
|-------|------|------|------|------|------|------|
| grams | .004 | .012 | .014 | .015 | .020 | .039 |
| 0007 | 0.10 | 0.30 | 0.36 | 0.38 | 0.51 | 0.99 |

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