

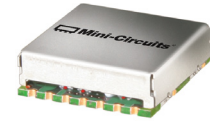
# Surface Mount Band Stop Filter

## BSF-C174223+

50Ω 174 to 223 MHz

### The Big Deal

- High rejection, 44 dB typical
- Good VSWR, 1.3:1 typical in passband
- Stopband (174 to 223 MHz)
- Miniature shielded package



CASE STYLE: HU1186

### Product Overview

The BSF-C174223+ is stopband filter fabricated using SMT Technology. Covering 174 to 223 MHz stopband, this units offer good rejection. This unit uses a miniature high Q capacitors and wire welded inductors for high reliability. It has repeatable performance across production lots and consistent performance across temperature.

### Key Features

| Feature                                   | Advantages                                                                                                                     |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| High rejection, 44 dB typical             | BSF-C174223+ enables the filter to attenuate spurious signals and reject harmonics for broadband of frequencies.               |
| Good VSWR, 1.3:1 typical in the pass-band | This filter maintains typical VSWR over a passband frequency range which provided good interface when used with other devices. |
| Shielded package                          | Shielded package (Size of .087" x 0.80" x 0.25") reduced interface with and from the surrounding components.                   |



For detailed performance specs  
& shopping online see web site

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IFIRF MICROWAVE COMPONENTS

**Notes:** 1. Performance and quality attributes and conditions not expressly stated in this specification sheet are intended to be excluded and do not form a part of this specification sheet. 2. Electrical specifications and performance data contained herein are based on Mini-Circuit's applicable established test performance criteria and measurement instructions. 3. The parts covered by this specification sheet 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](http://www.minicircuits.com/MCLStore/terms.jsp).

# Surface Mount Band Stop Filter

## BSF-C174223+

50Ω 174 to 223 MHz



CASE STYLE: HU1186  
PRICE: \$39.95 ea. QTY (1-9)

### Features

- High rejection, 44 dB typical
- Good VSWR, 1.3:1 typical in passband
- Aqueous washable
- Miniature shield package

### Applications

- FM radio
- Receivers / Transmitters
- Lab use

### Electrical Specifications at 25°C

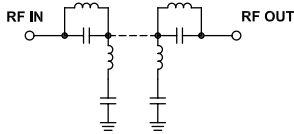
| Parameter        | F#             | Frequency (MHz) | Min.     | Typ. | Max. | Unit |    |
|------------------|----------------|-----------------|----------|------|------|------|----|
| Pass Band, Lower | Insertion Loss | DC-F1           | DC - 130 | -    | 0.6  | 1.2  | dB |
|                  | VSWR           | DC-F1           | DC - 130 | -    | 1.3  | 1.7  | :1 |
| Stop Band        | Rejection      | F4-F5           | 174-223  | 30   | 44   | -    | dB |
|                  | VSWR           | F4-F5           | 174-223  | -    | 6    | -    | :1 |
| Pass Band, Upper | Insertion Loss | F2-F3           | 330-1000 | -    | 0.6  | 1.2  | dB |
|                  | VSWR           | F2-F3           | 330-1000 | -    | 1.3  | 1.7  | :1 |

### Maximum Ratings

|                       |                |
|-----------------------|----------------|
| Operating Temperature | -40°C to 85°C  |
| Storage Temperature   | -55°C to 100°C |
| RF Power Input        | 250 mW max.    |

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

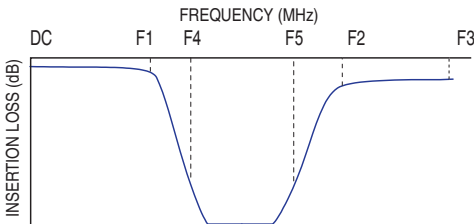
### Functional Schematic



### Typical Performance Data at 25°C

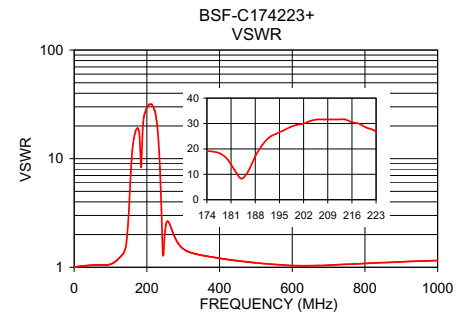
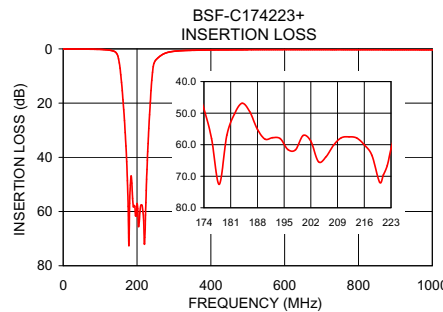
| Frequency (MHz) | Insertion Loss (dB) | VSWR (:1) |
|-----------------|---------------------|-----------|
| 1.0             | 0.02                | 1.00      |
| 5.0             | 0.02                | 1.01      |
| 30.0            | 0.08                | 1.03      |
| 88.0            | 0.16                | 1.03      |
| 114.0           | 0.30                | 1.13      |
| 130.0           | 0.58                | 1.26      |
| 150.0           | 3.67                | 2.58      |
| 160.0           | 15.42               | 8.77      |
| 168.0           | 30.86               | 13.81     |
| 174.0           | 48.66               | 16.72     |
| 200.0           | 57.09               | 14.50     |
| 223.0           | 61.29               | 22.29     |
| 228.0           | 41.06               | 18.30     |
| 238.0           | 15.37               | 7.73      |
| 254.0           | 3.66                | 2.90      |
| 280.0           | 1.42                | 1.52      |
| 330.0           | 0.61                | 1.20      |
| 500.0           | 0.32                | 1.08      |
| 800.0           | 0.33                | 1.11      |
| 1000.0          | 0.39                | 1.18      |

### Typical Frequency Response



**+ RoHS compliant in accordance with EU Directive (2002/95/EC)**

The +Suffix has been added in order to identify RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications.



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IFIRF MICROWAVE COMPONENTS

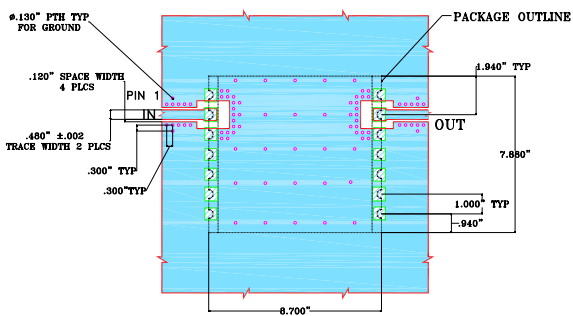
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REV. OR  
M131673  
BSF-C174223+  
EDU1290  
URJ  
110712  
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## Pin Connections

|               |                         |
|---------------|-------------------------|
| INPUT         | 2                       |
| OUTPUT        | 13                      |
| NOT CONNECTED | 6,9                     |
| GROUND        | 1,3,4,5,7,8,10,11,12,14 |

**Demo Board MCL P/N: TB-378+**  
**Suggested PCB Layout (PL-347)**

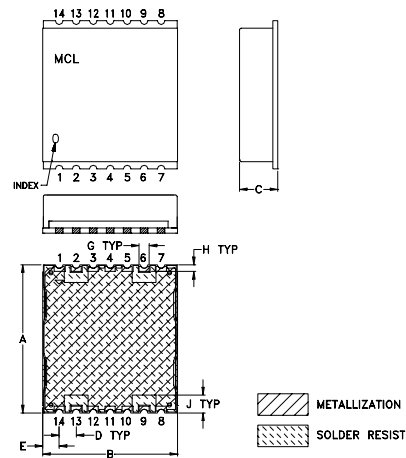


### NOTES:

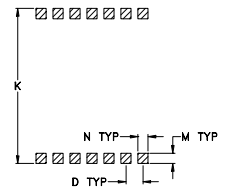
- TRACE WIDTH IS SHOWN FOR ROGERS R04350B WITH DIELECTRIC THICKNESS .030"±.003". COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
- BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

- DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)
- DENOTES COPPER LAND PATTERN FREE OF SOLDERMASK

## Outline Drawing



## PCB Land Pattern



Suggested Layout,  
 Tolerance to be within ±.002

## Outline Dimensions ( inch / mm)

| A     | B     | C    | D    | E    | F  | G     | H    |
|-------|-------|------|------|------|----|-------|------|
| .870  | .800  | .25  | .100 | .097 | -- | .060  | .040 |
| 22.10 | 20.32 | 6.35 | 2.54 | 2.46 | -- | 1.52  | 1.02 |
| J     | K     | L    | M    | N    | P  | wt    |      |
| .105  | .910  | --   | .060 | .060 | -- | grams |      |
| 2.67  | 23.11 | --   | 1.52 | 1.52 | -- | 2.85  |      |