*Engineering Development Model*

# Band Pass Filter BP-EDU0671

## Surface Mount

### Important Note

This model has been designed, built and tested in our engineering department. Performance data represents model capability.
At present it is a non-catalog model. On request, we can supply a final specification sheet, part number and price/delivery information.

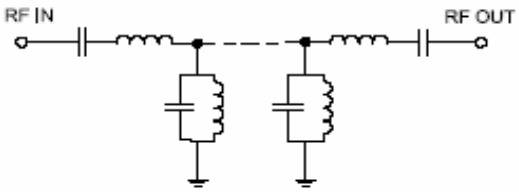
Please click "Back", and then click "Contact Us" for Applications support.

**CASE STYLE : HF1139**

| ELECTRICAL SPECIFICATIONS 50Ω @ +25°C | | | | |
|---|---|---|---|---|
| **Parameter** | **Min.** | **Typ.** | **Max.** | **Units** |
| **Passband (Loss < 1dB)** | 50 | | 90 | MHz |
| **Center Frequency** | | 70 | | MHz |
| **Stopband Low Band (Loss > 10 dB)** | DC | | 2 | MHz |
| **High Band (Loss > 20 dB)** | 137 | | 1500 | MHz |
| **Passband VSWR** | | 1.4 | | (:1) |
| **Stopband VSWR** | | 18 | | (:1) |

| MAXIMUM RATINGS | |
|---|---|
| **Operating Temperature** | -55°C to 85°C |
| **Storage Temperature** | -55°C to 100°C |
| **RF Power Input** | 0.75W at 25°C |

### Functional Schematic



# Band Pass Filter BP-EDU0671

## *Typical Performance Data*

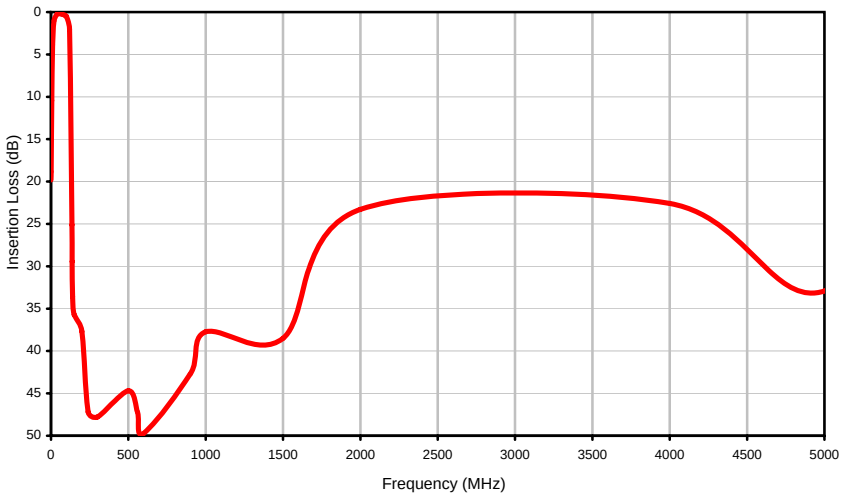
| FREQUENCY (MHz) | INSERTION LOSS (dB) | RETURN LOSS (dB) |
|---|---|---|
| 0.50 | 19.81 | 0.34 |
| 1.00 | 18.84 | 0.40 |
| 5.00 | 10.44 | 1.20 |
| 10.00 | 3.88 | 3.02 |
| 20.00 | 1.01 | 7.63 |
| 40.00 | 0.20 | 16.46 |
| 45.00 | 0.19 | 17.95 |
| 50.00 | 0.18 | 18.95 |
| 70.00 | 0.24 | 20.38 |
| 90.00 | 0.38 | 20.01 |
| 95.00 | 0.44 | 19.30 |
| 100.00 | 0.53 | 18.22 |
| 120.00 | 2.06 | 11.72 |
| 135.00 | 25.12 | 1.61 |
| 137.00 | 29.44 | 1.24 |
| 140.00 | 33.59 | 0.92 |
| 150.00 | 35.72 | 0.49 |
| 200.00 | 37.68 | 0.18 |
| 240.00 | 47.18 | 0.16 |
| 300.00 | 47.80 | 0.18 |
| 500.00 | 44.70 | 0.22 |
| 560.00 | 47.23 | 0.22 |
| 600.00 | 49.71 | 0.22 |
| 900.00 | 42.71 | 0.23 |
| 1000.00 | 37.72 | 0.24 |
| 1500.00 | 38.51 | 1.03 |
| 2000.00 | 23.29 | 0.84 |
| 4000.00 | 22.58 | 0.71 |
| 5000.00 | 32.91 | 0.78 |
| 6000.00 | 10.40 | 4.45 |

| FREQUENCY (MHz) | GROUP DELAY (nsec) |
|---|---|
| 0.50 | 9.56 |
| 1.00 | 10.00 |
| 5.00 | 12.95 |
| 10.00 | 12.29 |
| 20.00 | 8.06 |
| 40.00 | 5.68 |
| 45.00 | 5.53 |
| 47.00 | 5.49 |
| 50.00 | 5.47 |
| 70.00 | 5.88 |
| 90.00 | 7.47 |
| 93.00 | 7.90 |
| 95.00 | 8.18 |
| 100.00 | 9.15 |
| 120.00 | 21.39 |
| 135.00 | 14.46 |
| 137.00 | 23.34 |
| 140.00 | 27.69 |
| 150.00 | 3.75 |
| 200.00 | 1.96 |
| 240.00 | 0.62 |
| 300.00 | 0.54 |
| 500.00 | 0.58 |
| 560.00 | 0.30 |
| 900.00 | 0.38 |
| 1000.00 | 0.13 |
| 2000.00 | 0.94 |
| 4000.00 | 0.49 |
| 5000.00 | 0.97 |
| 6000.00 | 0.90 |

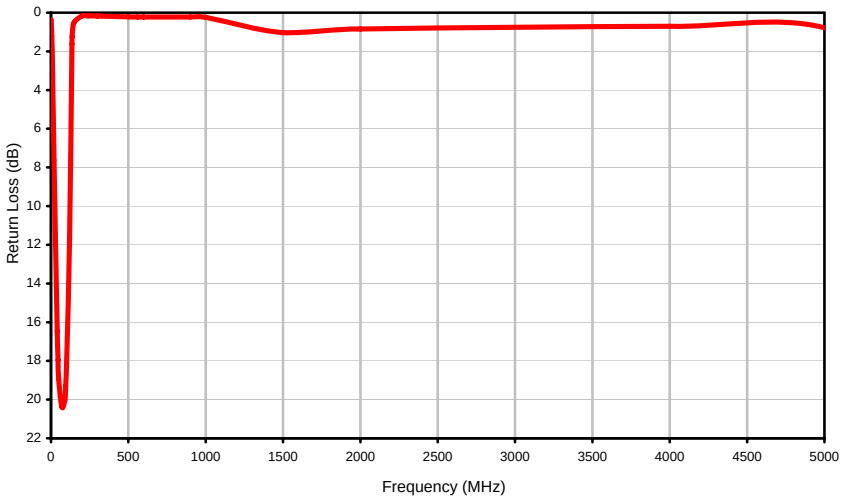
# Band Pass Filter BP-EDU0671

## *Typical Performance Curves*

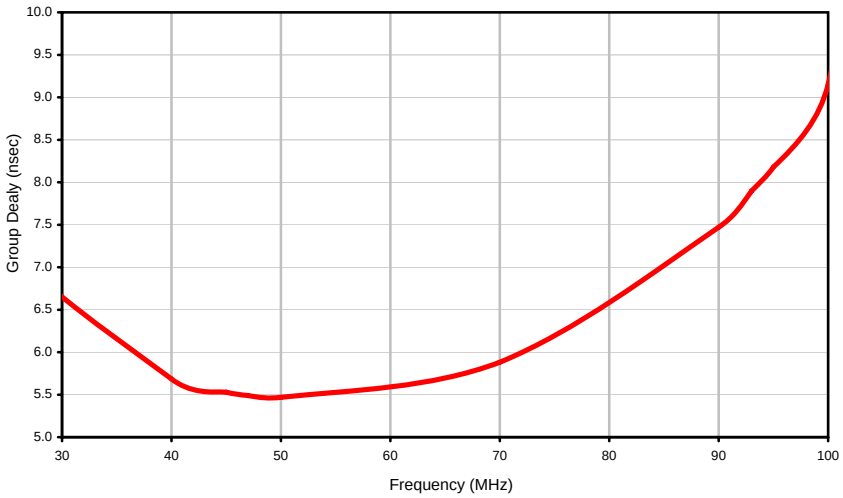
**Insertion Loss**




**Return Loss**



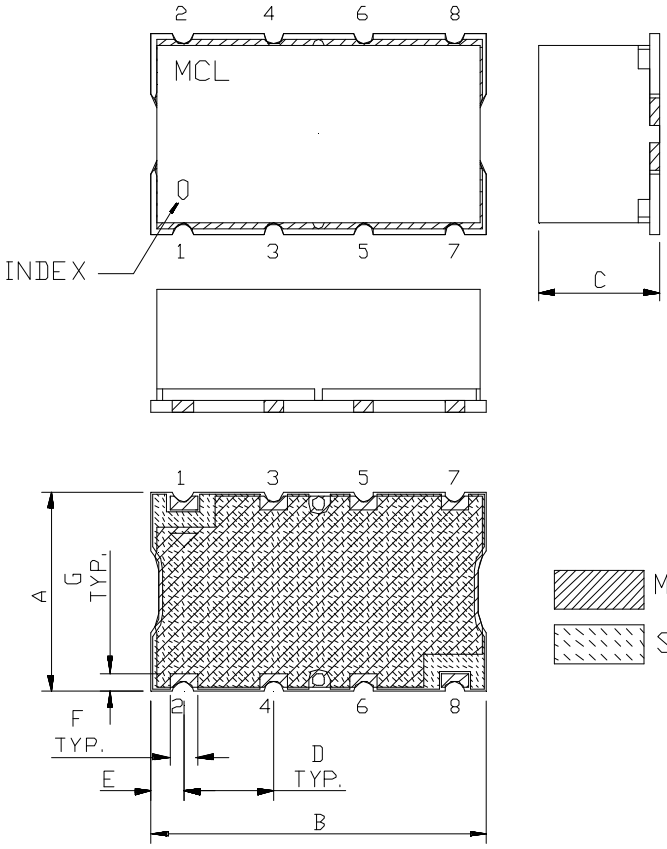

**Group Delay**



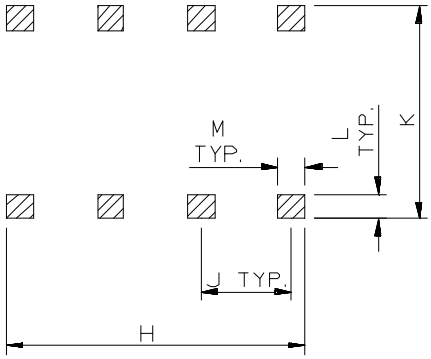
# Case Style HF

**HF1139**

## Outline Dimensions




## PCB Land Pattern




| CASE # | A | B | C | D | E | F | G | H | J | K | L | M | WT. GRAMS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HF1139 | .44 (11.18) | .74 (18.80) | .27 (6.86) | .200 (5.08) | .07 (1.78) | .060 (1.52) | .040 (1.02) | .660 (16.76) | .200 (5.08) | .470 (11.94) | .055 (1.40) | .060 (1.52) | 3.0 |

**Dimensions are in inches (mm). Tolerances: 2 Pl. ±.015"; 3 Pl. ±.01"**

### Notes:

1. Case material: Nickel-Silver alloy.
2. Base: Printed wiring laminate.
3. Termination finish:
   For RoHS Case Styles: 2-5 µ inch (.05-.13 microns) Gold over 120-240 µ inch (3.05-6.10 microns) Nickel plate.
   For RoHS-5 Case Styles: Tin-Lead plate.



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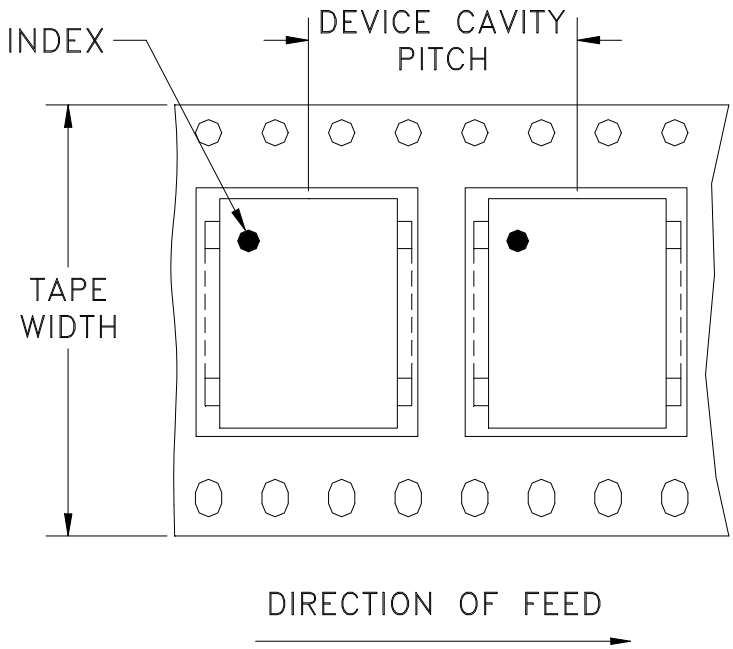
# Tape & Reel Packaging TR-F5

DEVICE ORIENTATION IN T&R




| Tape Width, mm | Device Cavity Pitch, mm | Reel Size, inches | Devices per Reel |
|---|---|---|---|
| 32 | 16 | 13 | 500 |

Mini-Circuits carrier tape materials provide protection from ESD (Electro-Static Discharge) during handling and transportation. Tapes are static dissipative and comply with industry standards EIA-481/EIA-541.

Go to: www.minicircuits.com/pages/pdfs/tape.pdf

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# Environmental Specifications ENV12

All Mini-Circuits products are manufactured under exacting quality assurance and control standards, and are capable of meeting published specifications after being subjected to any or all of the following physical and environmental test.

| Specification | Test/Inspection Condition | Reference/Spec |
|---|---|---|
| Operating Temperature | -40° to 85° C<br>Ambient Environment | Individual Model Data Sheet |
| Storage Temperature | -65° to 150° C<br>Ambient Environment | Individual Model Data Sheet |
| Autoclave | 15 psig, 100% RH, 121°C, 96 hours | JESD22-A102-C, Condition C |
| Temperature Cycling | -65° to 150°C, 100 cycles | JESD22-A104 |
| Temperature Humidity | 85°C/ 85% RH, 168 hours | JESD22-113 |
| Solder Reflow Heat | Sn-Pb Eutetic Process: 240°C peak<br>Pb-Free Process: 260°C peak | J-STD-020, Table 4-1, 4-2 and 5-2; Figure 5-1 |
| Moisture Sensitivity: Level 1 | Bake at 125°C for 24 hours<br>Soak at 85°C/85% RH for 168 hours, Reflow 3 cycles at 240°C peak (Non-RoHS) or 260°C (RoHS) | J-STD-020 |
| Solderability | 10X magnification, 95% coverage | JESD22-B102, Method 1: Dip and Look Test |
| Mechanical Shock | 50g, 11 ms, 1/2-sine, 18 shocks: 3 each direction, each of 3 axes | MIL-STD-202, Method 213, Condition A |
| Vibration (High Frequency) | 20g peak, 10-2000 Hz, 12 times in each of three perpendicular directions (total 36) | MIL-STD-202, Method 204, Condition D |


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