

- 3.8 X 3.8 X 1.0 mm Surface Mount Case
- Complies with Directive 2002/95/EC (RoHS)

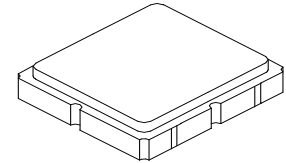


Absolute Maximum Ratings

| Rating | Value | Units |
|--|-----------------|-------|
| Maximum Incident Power in Passband | +15 | dBm |
| Maximum DC Voltage on any Non-ground Terminal | 3 | VDC |
| Storage Temperature Range in Tape and Reel | -45 to +85 | °C |
| Suitable for Lead-free Soldering - Maximum Soldering Profile | 260 °C for 30 s | |

SF2146D

**415.0 MHz
SAW Filter**



SM3838-8

Electrical Characteristics

| Characteristic | Sym | Notes | Min | Typ | Max | Units |
|-----------------------------------|------------|-------|----------|-----|-----|-------------------|
| Center Frequency | f_0 | 1 | | 415 | | MHz |
| 3 dB Bandwidth | BW_3 | | 25 | 32 | | MHz |
| Maximum Insertion loss at 415 MHz | IL_{MAX} | | | 4.0 | 4.5 | dB |
| Amplitude Ripple, 403 to 427 MHz | | | | 1.5 | 2.0 | dB _{p-p} |
| Attenuation: | | | | | | |
| 90 to 290 MHz | | | 41 | 50 | | dB |
| 290 to 328 MHz | | | 32 | 40 | | |
| 328 to 350 MHz | | | 42 | 50 | | |
| 350 to 375 MHz | | | 30 | 40 | | |
| 375 to 390 MHz | | | 17 | 20 | | |
| 445 to 475 MHz | | | 13 | 20 | | |
| 475 to 485 MHz | | | 35 | 40 | | |
| 485 to 900 MHz | | | 30 | 36 | | |
| Input/Output Impedance | | | 50 / 100 | | | Ω |
| Operating Temperature | | | -30 | | +85 | °C |

| | | | |
|--|---|------------------|--|
| Case Style | SM3838-8 3.8 x 3.8 mm Nominal Footprint | | |
| Lid Symbolization (Y=year, WW=week, S=shift) dot=pin 1 indicator | 777, YWWS | | |
| Standard Reel Quantity | Reel Size 7 Inch | 500 Pieces/Reel | |
| | Reel Size 13 Inch | 3000 Pieces/Reel | |

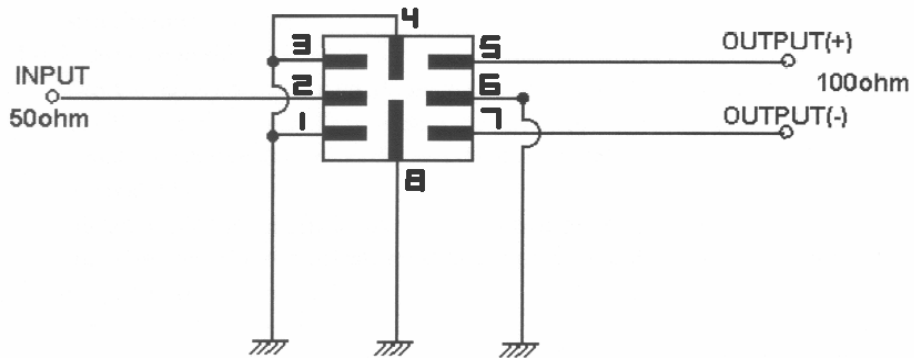


CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

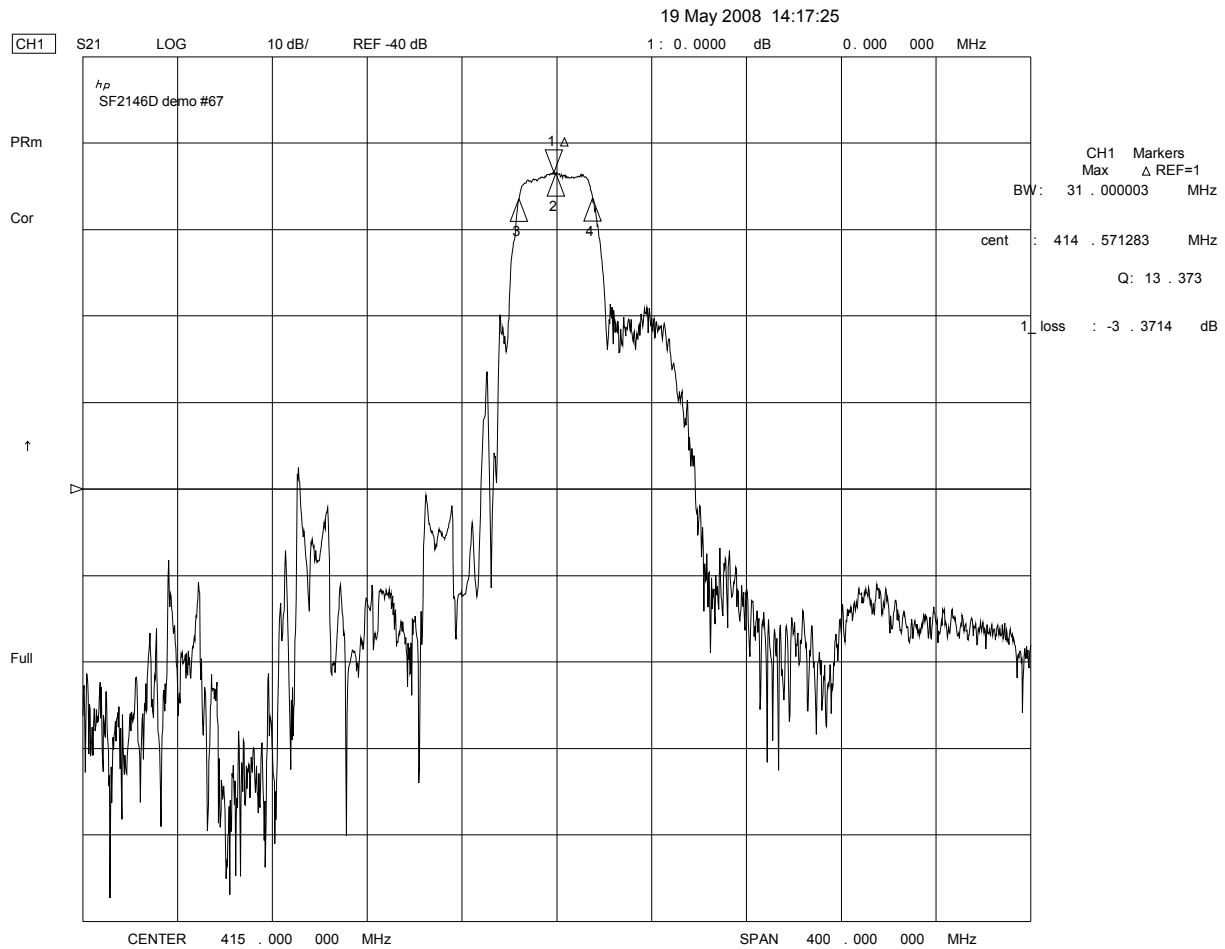
NOTES:

1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to the specified demonstration board with impedance matching to 50 Ω and measured with 50 Ω network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency, f_c .
3. Rejection is measured as attenuation below the minimum IL point in the passband. Rejection in final user application is dependent on PCB layout and external impedance matching design. See Application Note No. 42 for details.
4. The design, manufacturing process, and specifications of this filter are subject to change.
5. Either Port 1 or Port 2 may be used for either input or output in the design. However, impedances and impedance matching may vary between Port 1 and Port 2, so that the filter must always be installed in one direction per the circuit design.
6. US and international patents may apply.
7. Murata, stylized Murata logo, and Murata N.A., Inc. are registered trademarks of Murata Manufacturing Co., Ltd.

Test Circuit



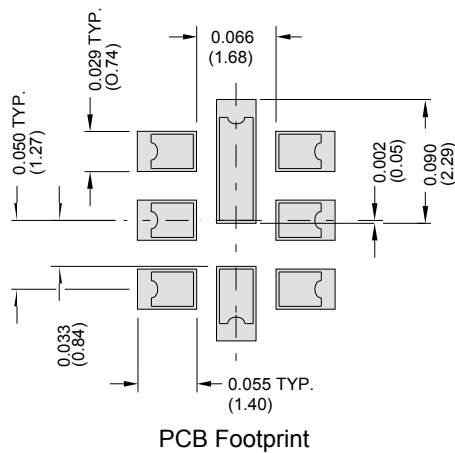
Frequency Response



SM3838-8 Case

8-Terminal Ceramic Surface-Mount Case

3.8 X 3.8 mm Nominal Footprint



| Case Dimensions | | | | | | |
|-----------------|------|------|------|--------|-------|-------|
| Dimension | mm | | | Inches | | |
| | Min | Nom | Max | Min | Nom | Max |
| A | 3.6 | 3.8 | 4.0 | 0.142 | 0.150 | 0.157 |
| B | 3.6 | 3.8 | 4.0 | 0.142 | 0.150 | 0.157 |
| C | 1.05 | 1.20 | 1.35 | 0.041 | 0.047 | 0.053 |
| D | 0.95 | 1.10 | 1.25 | 0.037 | 0.043 | 0.049 |
| E | 0.90 | 1.00 | 1.10 | 0.035 | 0.040 | 0.043 |
| F | 0.50 | 0.60 | 0.70 | 0.020 | 0.024 | 0.028 |
| G | 2.39 | 2.54 | 2.69 | 0.090 | 0.100 | 0.110 |
| H | 1.40 | 1.75 | 2.05 | 0.055 | 0.069 | 0.080 |

| Electrical Connections | | |
|------------------------|---------------------|------------|
| | Connection | Terminals |
| Port 1 | Input | 2 |
| Port 2 | Differential Output | 5, 7 |
| | Ground | All Others |

Dot Indicates Pin 1

| Materials | |
|--------------------|--|
| Solder Pad Plating | 0.3 to 1.0 μm Gold over 1.27 to 8.89 μm Nickel |
| Lid Plating | 2.0 to 3.0 μm Nickel |
| Body | Al_2O_3 Ceramic |
| Pb Free | |

TOP VIEW

BOTTOM VIEW

