

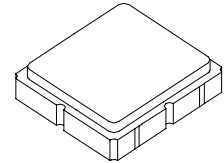


- 3.8 X 3.8 X 1.0 mm Surface Mount Case
- Complies with Directive 2002/95/EC (RoHS)



**SF2146D**

**415.0 MHz  
SAW Filter**



**SM3838-8**

**Absolute Maximum Ratings**

Rating	Value	Units
Maximum Incident Power in Passband	+15	dBm
Maximum DC Voltage on any Non-ground Terminal	TBD	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	

**Electrical Characteristics**

Characteristic	Sym	Notes	Min	Typ	Max	Units
Center Frequency	$f_O$	1		415		MHz
3 dB Bandwidth	BW <sub>3</sub>		25	32		MHz
Maximum Insertion loss at 415 MHz	IL <sub>MAX</sub>			4.0	4.5	dB
Amplitude Ripple, 403 to 427 MHz				1.5	2.0	dB <sub>P-P</sub>
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	

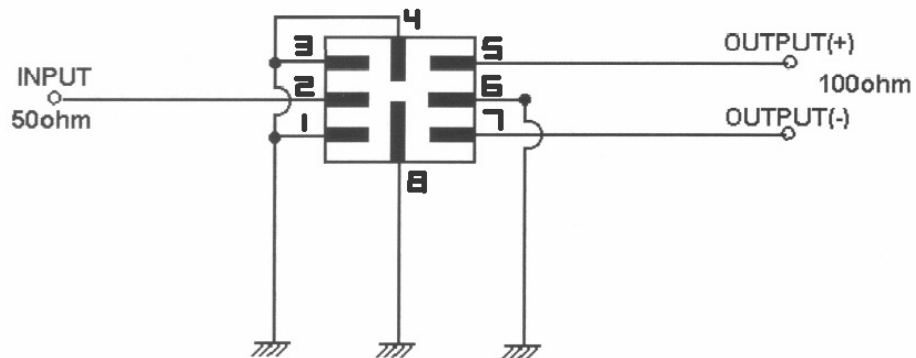


**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

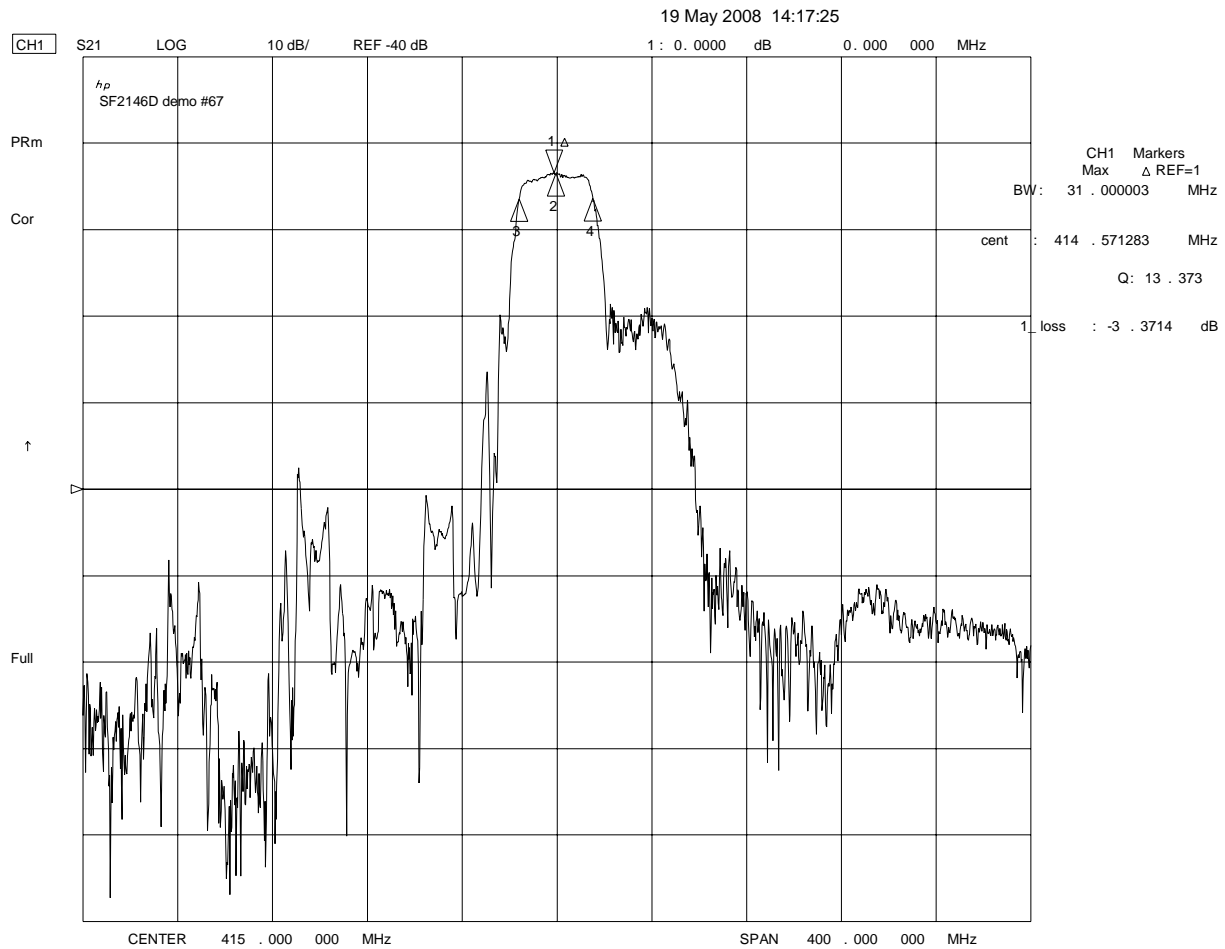
**Notes:**

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. RFM, stylized RFM logo, and RF Monolithics, Inc. are registered trademarks of RF Monolithics, Inc.

# Test Circuit



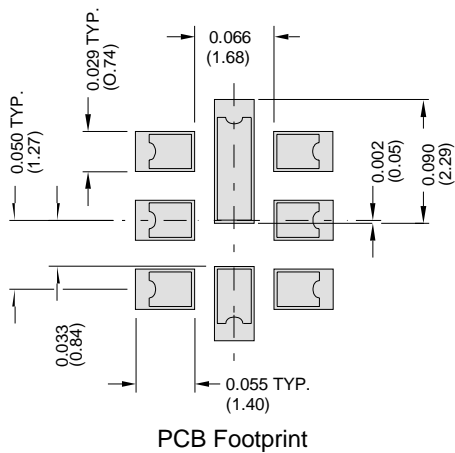
# Frequency Response



# 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

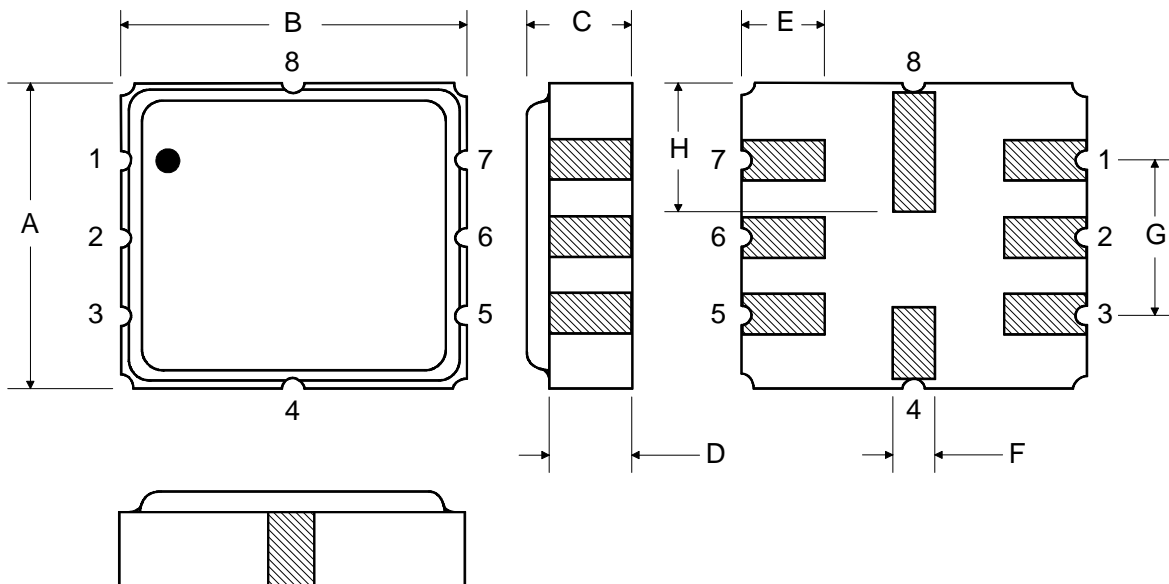
Electrical Connections		
	Connection	Terminals
Port 1	Input	2
Port 2	Differential Output	5, 7
	Ground	All Others

Dot Indicates Pin 1

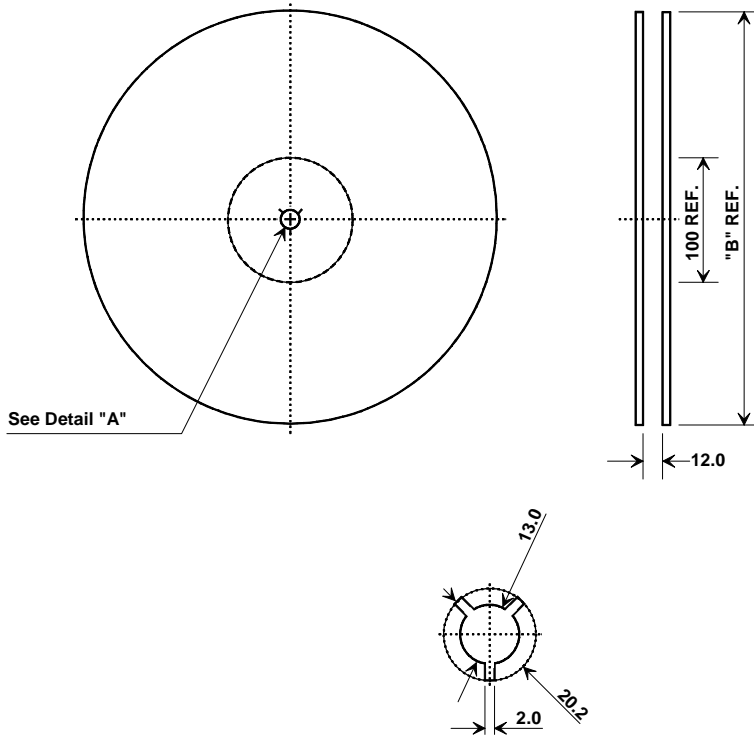
Materials	
Solder Pad Plating	0.3 to 1.0 $\mu\text{m}$ Gold over 1.27 to 8.89 $\mu\text{m}$ Nickel
Lid Plating	2.0 to 3.0 $\mu\text{m}$ Nickel
Body	$\text{Al}_2\text{O}_3$ Ceramic
Pb Free	

TOP VIEW

BOTTOM VIEW



## Tape and Reel Specifications



"B"		Quantity Per Reel
Inches	millimeters	
7	178	500
13	330	3000

## COMPONENT ORIENTATION and DIMENSIONS

Carrier Tape Dimensions	
Ao	4.25 mm
Bo	4.25 mm
Ko	1.30 mm
Pitch	8.0 mm
W	12.0 mm

