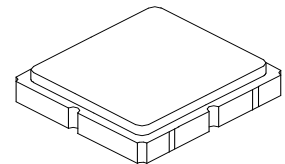


**SF2276D-2**

**453.75 MHz**  
**SAW Filter**



**SM3838-6**

- **Low-loss SAW Filter**
- **No Matching Required for 50 ohm Source/Load**
- **3.8 x 3.8 x 1.4 mm Surface-mount Package**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Moisture Sensitivity Level: 1**

**Absolute Maximum Ratings**

Rating	Value	Units
Maximum Incident Power in Passband	+10	dBm
Maximum DC Voltage on any Non-ground Terminals	5	VDC
Operable Temperature Range	-45 to +125	°C
Specification Temperature Range	-20 to +80	°C
Storage Temperature Range in Tape and Reel	-40 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	$f_c$			453.75		MHz
Insertion Loss, 450.0 to 457.5 MHz, -10 to +60 °C	IL			3.5	5.0	dB
Amplitude Ripple, 450.0 to 457.5 MHz, -10 to +60 °C				1.0	3.0	dB <sub>P-P</sub>
Input Return Loss, 450.0 to 457.5 MHz			5	6		dB
Output Return Loss, 450.0 to 457.5 MHz			5	6		dB
Rejection Referenced to 0 dB:						dB
300 to 350 MHz			27	30		
350 to 445 MHz			25	28		
460 to 470 MHz, -10 to +60 °C			8	15		
470 to 2000 MHz			16	18		
Single-ended Source Impedance	50 ohm					
Single-ended Load Impedance	50 ohm					
Case Style	SM3838-6 3.8 x 3.8 mm Nominal Footprint					
Lid Symbolization (Y=year, WW=week, S=shift) dot=pin 1 indicator	A24, <u>YWWS</u>					
Standard Reel Quantity	Reel Size 7 Inch	500 Pieces/Reel				
	Reel Size 13 Inch	3000 Pieces/Reel				

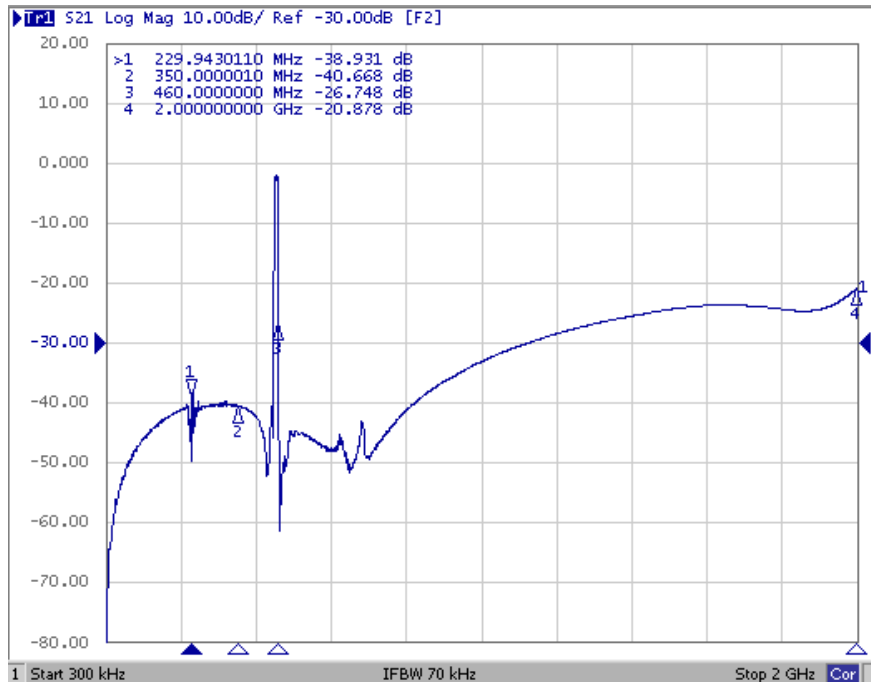
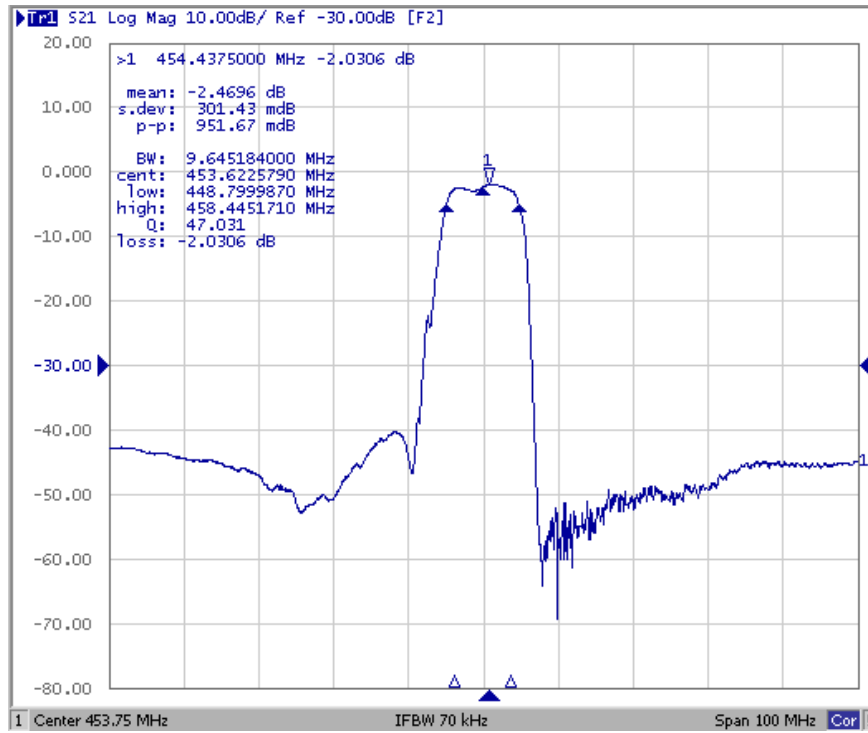
**Electrical Connections**

Connection	Terminals
Port 1	2
Port 2	5
Case Ground	All others

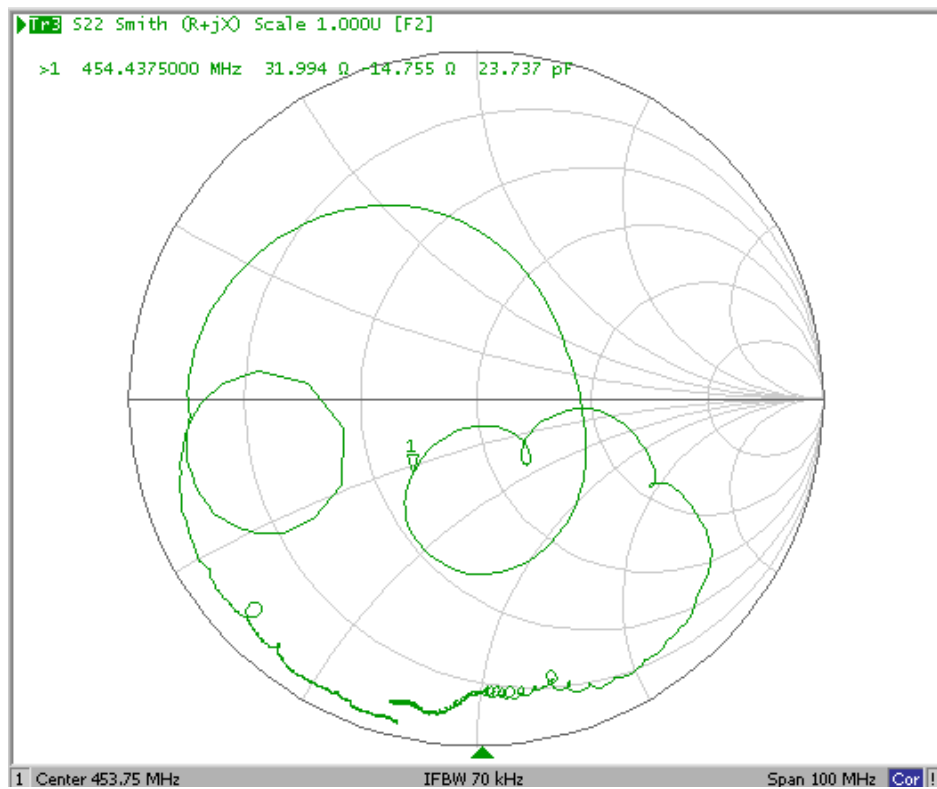
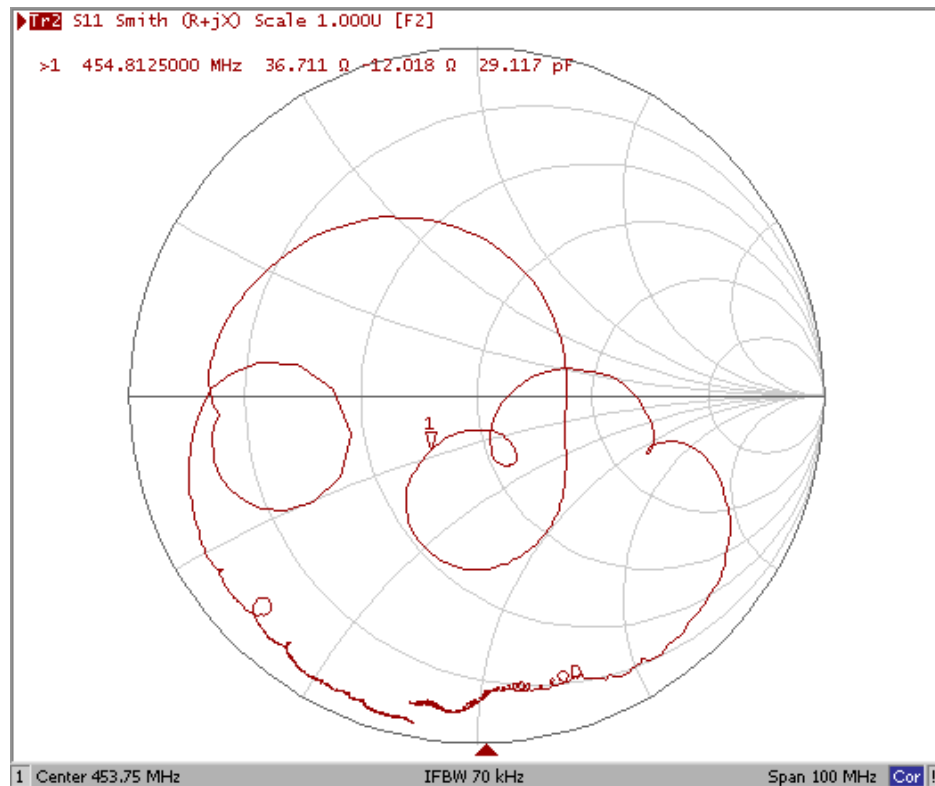
 **CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**  
**NOTES:**

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

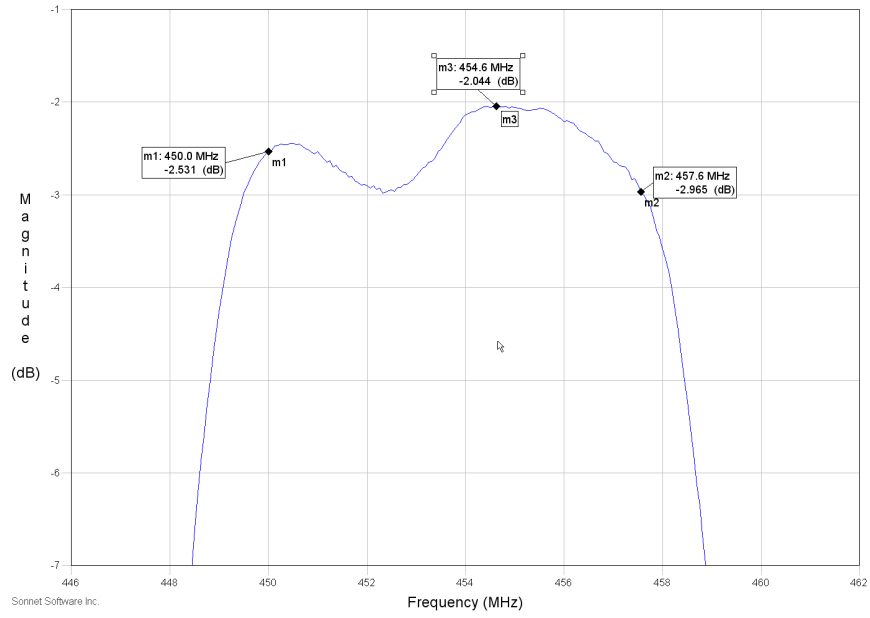
# Filter Response Plots



## Filter Input and Output Impedance Plots



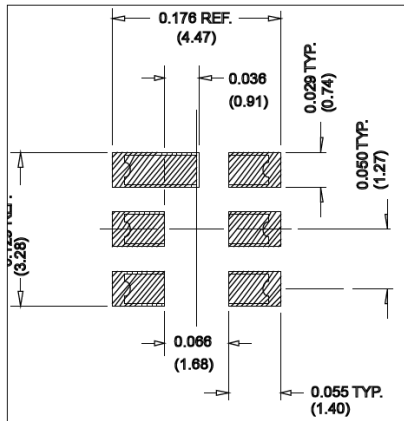
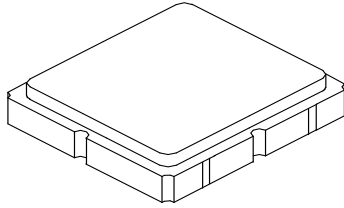
# Filter Passband Detail



# SM3838-6 Case

## 6-Terminal Ceramic Surface-mount Case

### 3.8 X 3.8 mm Nominal Footprint



Typical PCB Land Footprint

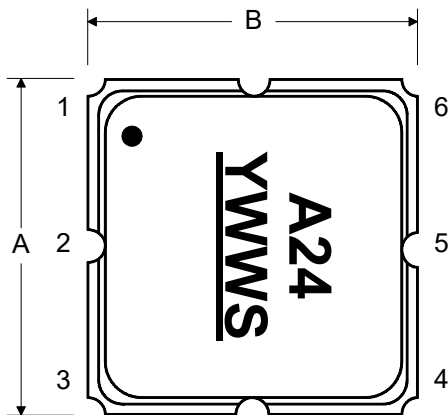
#### Case Dimensions

Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	3.60	3.80	4.00	0.140	0.150	0.016
B	3.60	3.80	4.00	0.140	0.150	0.016
C	1.07	1.25	1.43	0.050	0.060	0.067
D	0.95	1.10	1.25	0.037	0.043	0.050
E	2.39	2.54	2.69	0.090	0.100	0.110
G	0.90	1.00	1.10	0.035	0.040	0.043
H	1.90	2.00	2.10	0.750	0.080	0.830
I	0.50	0.60	0.70	0.020	0.024	0.028
J	1.70	1.80	1.90	0.067	0.070	0.075

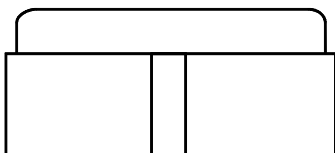
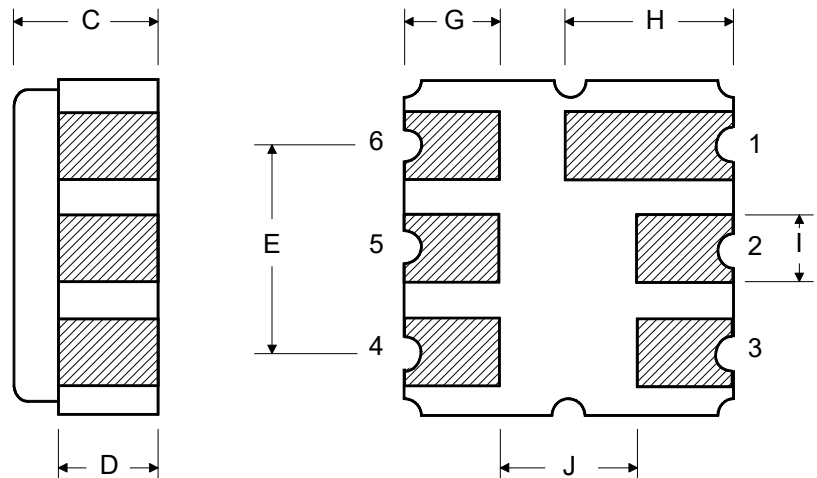
#### Materials

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

#### TOP VIEW



#### BOTTOM VIEW





## Recommended Reflow Profile

1. Preheating shall be fixed at 150~180°C for 60~90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50~80 seconds and at 260°C +0/-5°C peak (10 seconds).
4. Time: 5 times maximum.

