

- **Narrow-band SAW Filter**
- **Balanced/Single-ended Operation**
- **3.8 x 3.8 x 1.4 mm Surface-mount Package**
- **Complies with Directive 2002/95/EC (RoHS)**

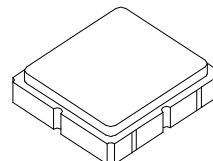


Absolute Maximum Ratings

Rating	Value	Units
Maximum Incident Power in Passband, Continuous	+15	dBm
Maximum DC Voltage on any Non-ground Terminals	3	VDC
Storage Temperature Range in Tape and Reel	-40 to +85	°C
Suitable for Lead-free Soldering - Maximum Soldering Profile	260 °C for 30 s	

SF2301D

241 MHz SAW Filter



SM3838-8

Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units
Center Frequency	f_C	1		241		MHz
Minimum Insertion Loss	IL_{MIN}			7.1	8.0	dB
3 dB Bandwidth	BW_3		200			kHz
Amplitude Ripple 240.92 to 241.08 MHz 240.90 to 241.10 MHz				1.0	1.7 2.2	dB _{P-P}
Group Delay Ripple 240.92 to 241.08 MHz 240.90 to 241.10 MHz				1.2	2.0 2.2	μs _{P-P}
Rejection Referenced to IL_{MIN} :		1, 2, 3				dB
232.5 to 240.6 MHz			28	40		
241.4 to 274 MHz			28	40		
10 to 232.5 MHz			44	50		
274 to 886.5 MHz			44	50		
Operating Temperature Range			-10		+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	A50, YWWS					
Standard Reel Quantity	Reel Size 7 Inch	500 Pieces/Reel				
	Reel Size 13 Inch	3000 Pieces/Reel				

Electrical Connections

Connection	Terminals
Input Port	5
Output Port	1
Ground	All others

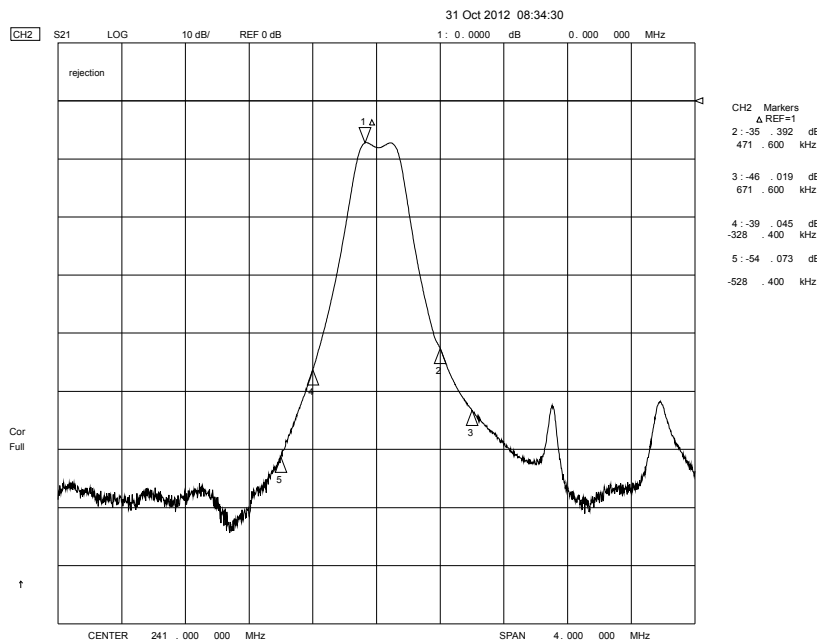
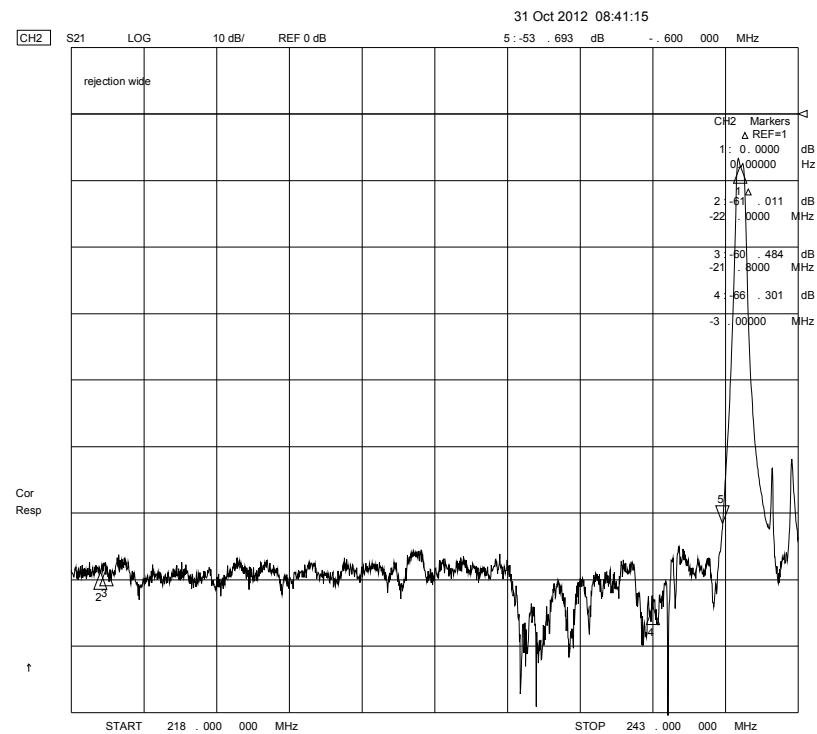


CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

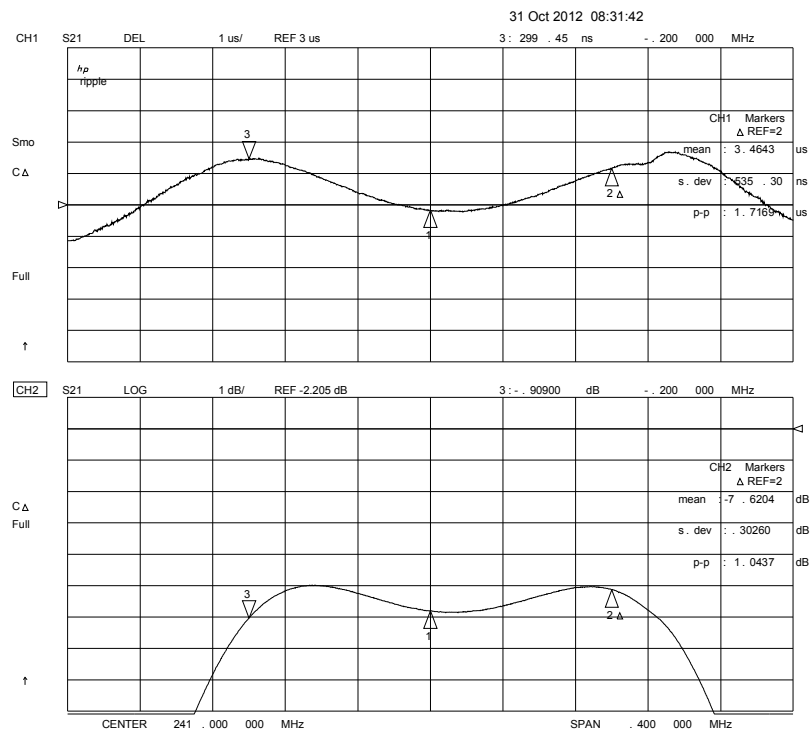
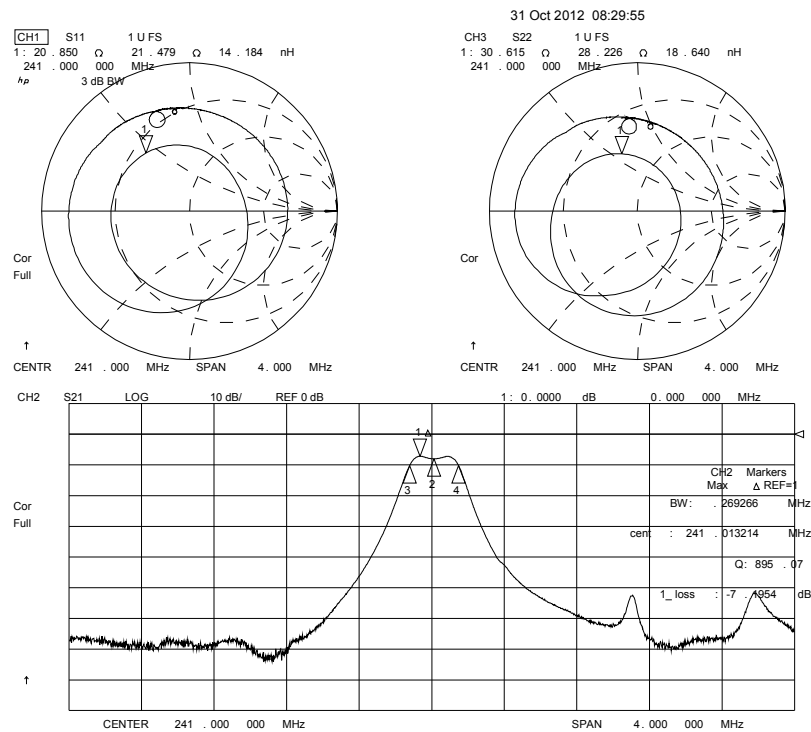
NOTES:

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. "LRIP" or "L" after the part number indicates "low rate initial production" and "ENG" or "E" indicates "engineering prototypes."
5. The design, manufacturing process, and specifications of this filter are subject to change.
6. 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.
7. US and international patents may apply.
8. Murata, stylized Murata logo, and Murata N.A., Inc. are registered trademarks of Murata Manufacturing Co., Ltd.

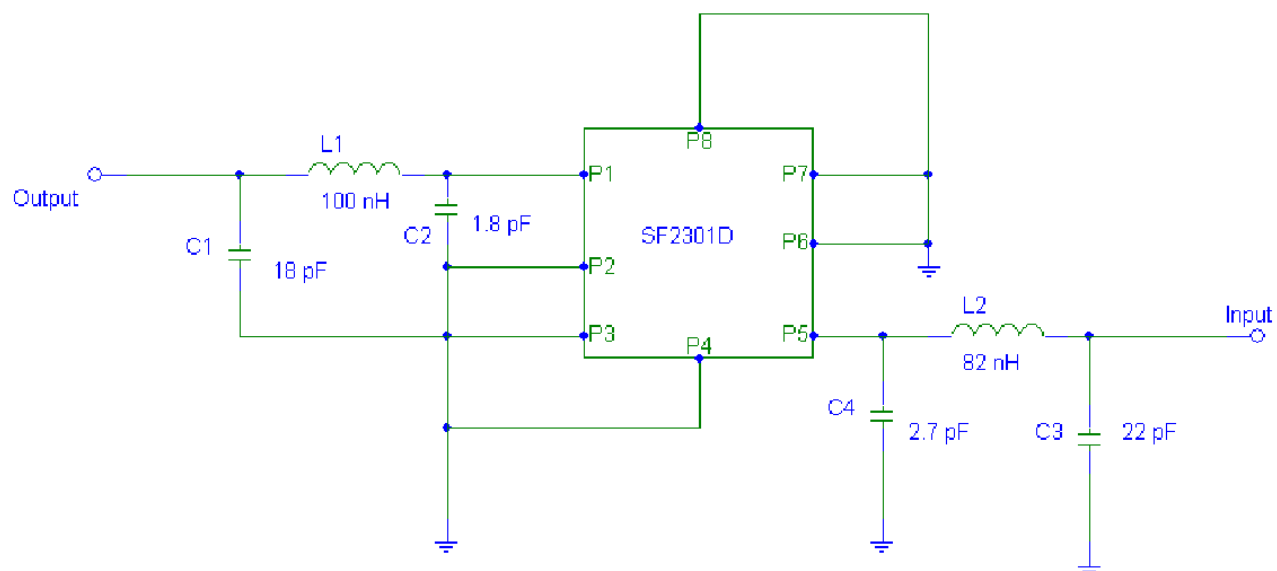
Filter Response Plots



Filter Passband Detail



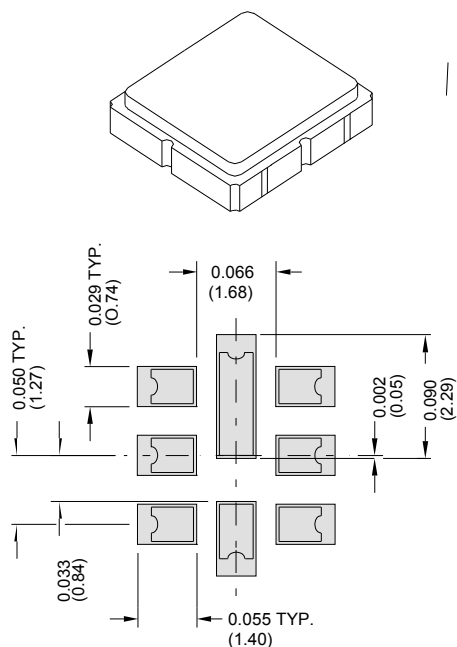
Typical Tuning Network



SM3838-8 Case

8-Terminal Ceramic Surface-mount Case

3.8 X 3.8 mm Nominal Footprint



Typical PCB Land Footprint

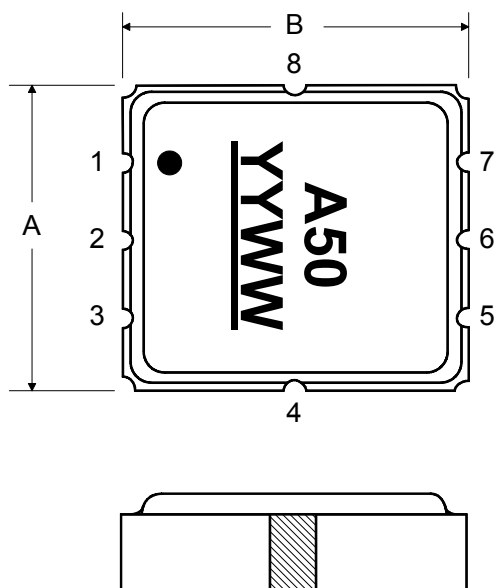
Case Dimensions

Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	3.6	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	1.40	0.041	0.047	0.055
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

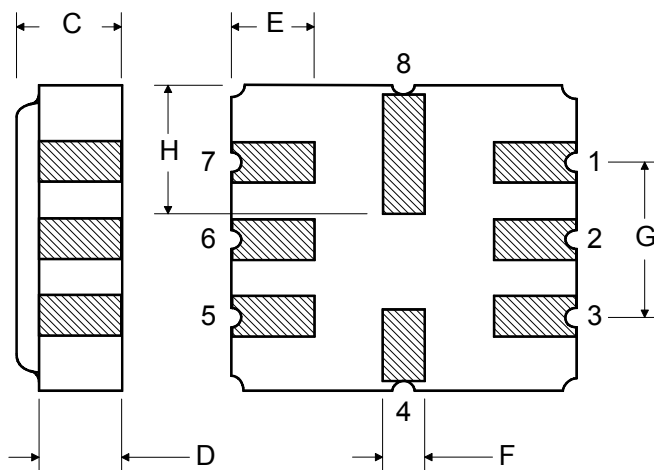
Materials

Solder Pad Plating	0.3 to 1.0 μ m Gold over 1.27 to 8.89 μ m Nickel
Lid Plating	2.0 to 3.0 μ m Nickel
Body	Al ₂ O ₃ Ceramic
Pb Free	

TOP VIEW



BOTTOM VIEW



Technical drawing of a circular component. The main view is a top-down view showing a large outer circle and a smaller concentric inner circle. A central crosshair indicates the center. A leader line points from the text "See Detail 'A'" to the center of the inner circle. To the right, a side view shows the component's profile, which is a thin, elongated shape. Dimensions for the side view include a total length of 100 REF. and a width of 12.0. Below the main view, a cross-section view (Detail A) shows a circular cross-section with a central hole. Dimensions for this view include a total diameter of 20.2, an inner hole diameter of 13.0, and a wall thickness of 2.0.

“B” Nominal Size		Quantity Per Reel
Inches	millimeters	
7	178	500
13	330	3000

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

