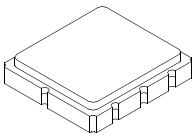
Preliminary

SF2025D

259.861 MHz SAW Filter

- ***Designed for SDARS Receiver IF Application***
- ***Low Insertion Loss***
- ***3.8 X 3.8 mm Surface-Mount Case***
- ***Differential Input and Output***
- ***Complies with Directive 2002/95/EC (RoHS)***



SM3838-8

Absolute Maximum Ratings

Rating	Value	Units
Maximum Incident Power in Passband	+10	dBm
Max. DC voltage between any 2 terminals	30	VDC
Storage Temperature Range	-40 to +105	°C
Suitable for lead-free soldering - Max Soldering Temperature	260°C for 30 s	

Electrical Characteristics

Characteristic		Sym	Notes	Min	Typ	Max	Units
Nominal Center Frequency		f_C	1		259.861		MHz
Passband	Minimum Insertion Loss	IL			16	18	dB
	1.5 dB Passband	$BW_{1.5}$	1, 2		13.6		MHz
	3 dB Passband	BW_3			14.3		
Amplitude Ripple from fc-6.354 MHz to fc-4.2885 MHz (-20 to 85°C)					0.5	1	dB_{P-P}
Amplitude Ripple from fc-6.354 MHz to fc-4.2885 MHz (-40 to -20°C)					0.5	1.5	
Amplitude Ripple from fc-4.4965 MHz to fc-2.431 MHz					0.5	1	
Amplitude Ripple from fc-2.639 MHz to fc+0.079 MHz					0.5	1	
Amplitude Ripple from fc-0.079 MHz to fc+2.639 MHz					0.5	1	
Amplitude Ripple from fc+2.431 MHz to fc+4.4965 MHz					0.5	1	
Amplitude Ripple from fc+4.2885 MHz to fc+6.354 MHz (-40 to 60°C)					0.5	1	
Amplitude Ripple from fc+4.2885 MHz to fc+6.354 MHz (60 to 85°C)					0.5	1.15	
Group Delay Variation over fc-6.354 MHz to fc-2.431 MHz and from fc+2.431 MHz to fc+6.354 MHz		GDV1			90	120	ns_{P-P}
Group Delay Variation over fc±2.639 MHz		GDV2			60	120	
Rejection	fc-28 to fc-12 MHz and fc+12 to fc+33 MHz		1, 2, 3	36	43		dB
	fc-12 to fc-10.5 MHz			30	40		
	fc+9 to fc+12 MHz			26	36		
Operating Temperature Range		T_A	1	-40		+85	°C
Frequency Temperature Coefficeint					-18		ppm/°C
Differential Input and Output Impedance			L & C Match to 150 ohms				
Case Style			7	SM3838-8 3.8 x 3.8 mm Nominal Footprint			
Lid Symbolization (YY=year, WW=week, S=shift)				634 YYWW			

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, fc.
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. Tape and Reel Standard Per ANSI / EIA 481.
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.
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Electrostatic Sensitive Device. Observe precautions for handling.

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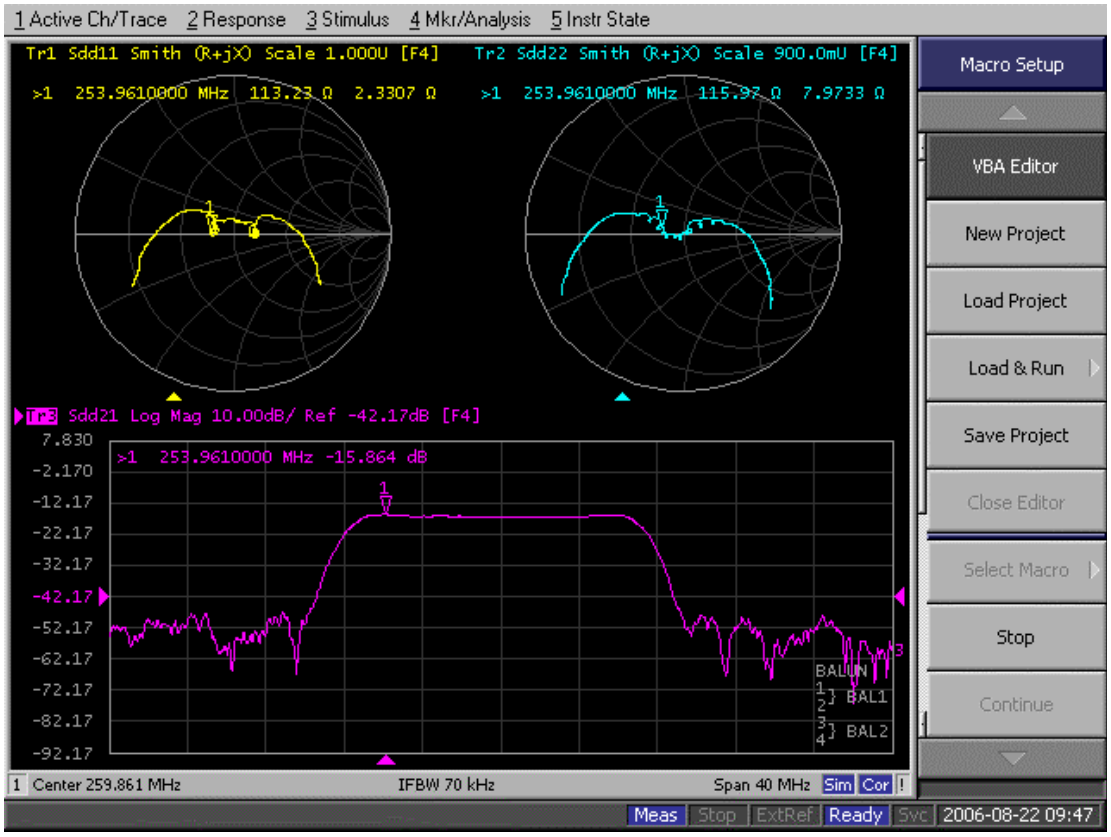
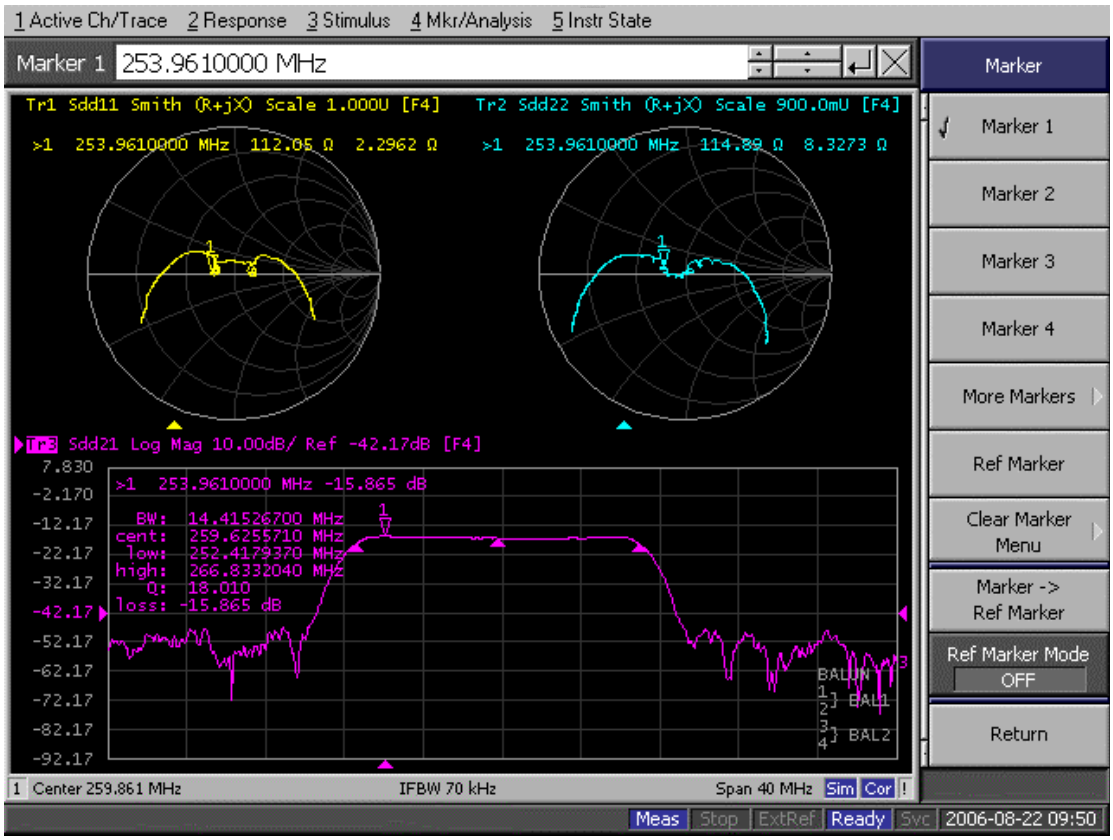
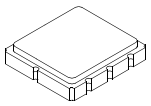
400-1724-001	PCB, 4 PORT, 3X3MM	PCB
SF2025D	FILTER, 259.861 MHZ	FILTER
501-0857-056	CAP, 5.6 PF, 0402CS	C1,C2
501-0857-050	CAP, 5.0 PF, 0402CS	C3,C4
501-0857-010	CAP, 1.0 PF, 0402CS	C5
500-1282-390	IND, 39 NH, 0402CS	L1 COILCRAFT
500-1282-510	IND, 51 NH, 0402CS	L2 COILCRAFT

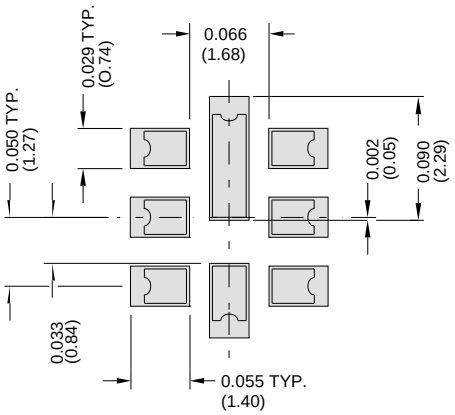




SM3838-8 Case

8-Terminal Ceramic Surface-Mount Case
3.8 X 3.8 mm Nominal Footprint





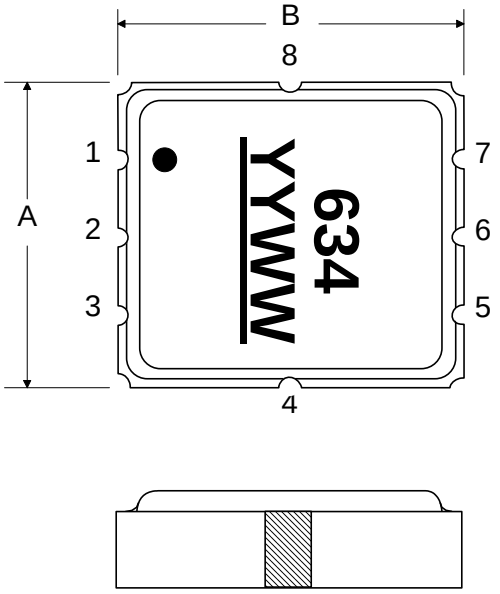
PCB Footprint

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	0.95	1.10	1.25	0.037	0.043	0.049
D	0.60	0.85	1.00	0.023	0.033	0.039
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	1.35	1.5	1.65	0.053	0.059	0.065

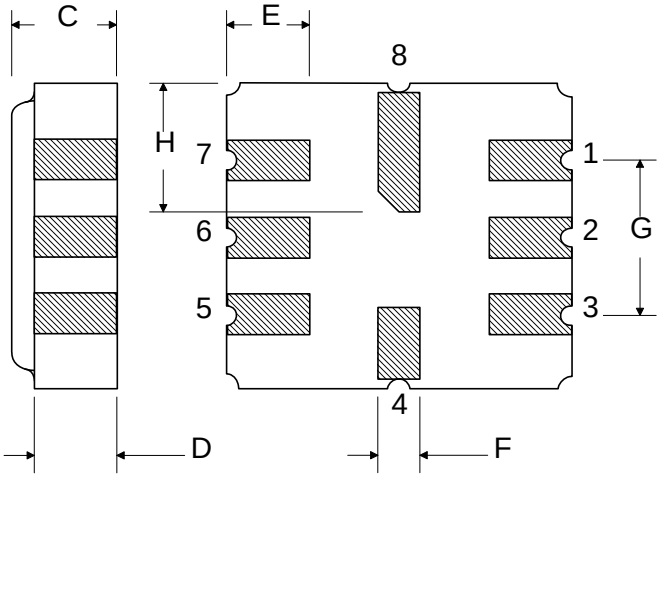
Electrical Connections		
	Connection	Terminals
Port 1	Differential Input	1, 2
Port 2	Differential Output	5, 6
	Ground	All Others
Single Ended Operation		**Return is Ground**
Differential Operation		**Return is Hot**
Dot Indicates Pin 1		

Materials	
Solder Pad Termination	Au plating 30 - 60 uInches (76.2-152 uM) over 80-200 uInches (203-508 uM) Ni.
Lid	Fe-Ni-Co Alloy Electroless Nickel Plate (8-11% Phosphorus) 100-200 uInches Thick
Body	Al_2O_3 Ceramic
Pb Free	

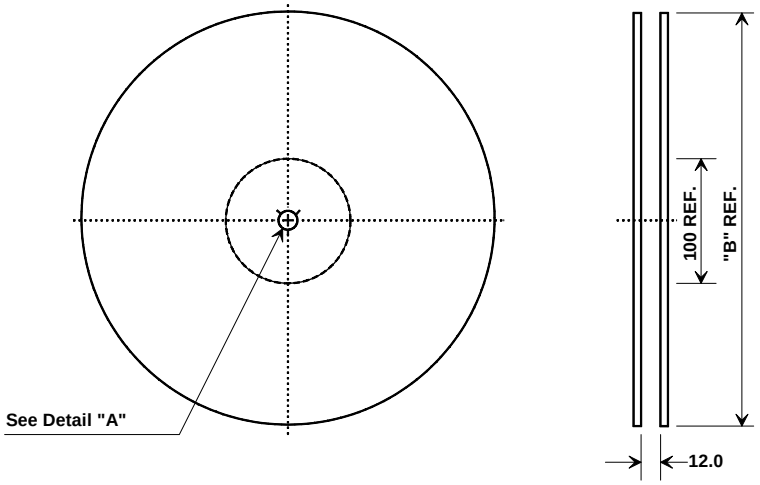
TOP VIEW



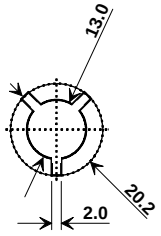
BOTTOM VIEW



Tape and Reel Specifications



"B " Nominal Size		Quantity Per Reel
Inches	millimeters	
7	178	1000
13	330	3000



COMPONENT ORIENTATION and DIMENSIONS

Carrier Tape Dimensions	
Ao	4.25 mm
Bo	4.25 mm
Ko	1.60 mm
Pitch	8.0 mm
W	12.0 mm