

# Preliminary



- Low Insertion Loss
- 3.8 X 3.8 X 1 mm Surface-Mount Case
- Differential Input and Output
- Complies with Directive 2002/95/EC (RoHS)

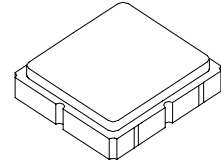


**SF2079D-1**

**251.045 MHz  
SAW Filter**

## Absolute Maximum Ratings

Rating	Value	Units
Maximum Incident Power in Passband	+10	dBm
Maximum DC Voltage Between any Two Terminals	30	VDC
Operating Temperature Range	-40 to +85	°C
Storage Temperature Range	-60 to +95	°C
Suitable for Lead-free Soldering - Maximum Soldering Profile	260°C for 30 s	



**SM3838-8**

## Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units	
Center Frequency	$f_c$	1		251.045		MHz	
Insertion Loss	IL			13.0	15.0	dB	
Amplitude Ripple (p-p)		1, 2		fc - 6.2500 to fc - 4.3925 MHz	0.90	1.75	dB
				fc - 4.3925 to fc - 2.5350 MHz	0.60	1.50	
				fc - 2.5350 to fc - 0.0250 MHz	0.60	1.50	
				fc + 0.0250 to fc + 2.5350 MHz	0.80	1.50	
				fc + 2.5350 to fc + 4.3925 MHz	0.80	1.75	
				fc + 4.3925 to fc + 6.2500 MHz	0.60	1.75	
1.5 dB Passband Width Centered at fc				13.5		MHz	
3.0 dB Passband Width Centered at fc				14.2		MHz	
Low Side Attenuation < 234.545 MHz (< fc - 16.5 MHz)			32			dB	
Low Side Attenuation, 234.545 to 240.545 MHz (fc-10.5 MHz)			29				
High Side Attenuation, 260.045 to 267.545 MHz (fc+9.0 MHz)			18				
High Side Attenuation > 267.545 MHz (> fc + 16.5 MHz)			32				
Temperature Coefficient of frequency					-18	ppm/K	
Delay Ripple (p-p)		1, 2, 3		fc - 6.2500 to fc - 4.3925 MHz	84	150	ns
				fc - 4.3925 to fc - 2.5350 MHz	35	70	
				fc - 2.5350 to fc - 0.0250 MHz	22	120	
				fc + 0.0250 to fc + 2.5350 MHz	58	120	
				fc + 2.5350 to fc + 4.3925 MHz	37	70	
				fc + 4.3925 to fc + 6.2500 MHz	52	110	
Source/Load Impedance				150		ohms	
Case Style			SM3838-8 3.8 x 3.8 mm Nominal Footprint				
Lid Symbolization (YY=year, WW=week, S=shift) See note 4		6	827 YWWS				



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

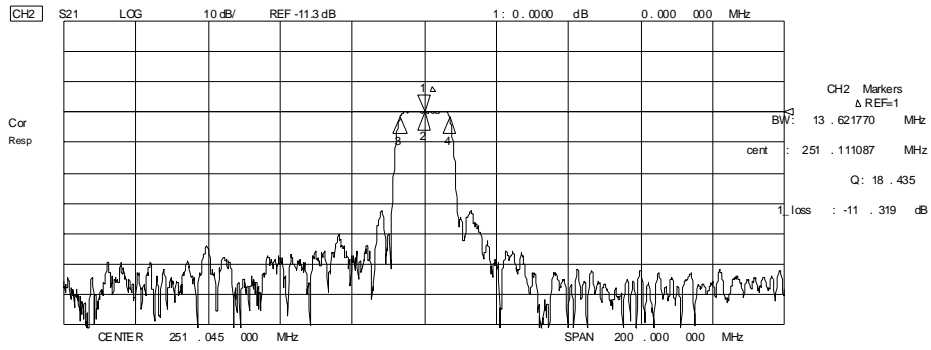
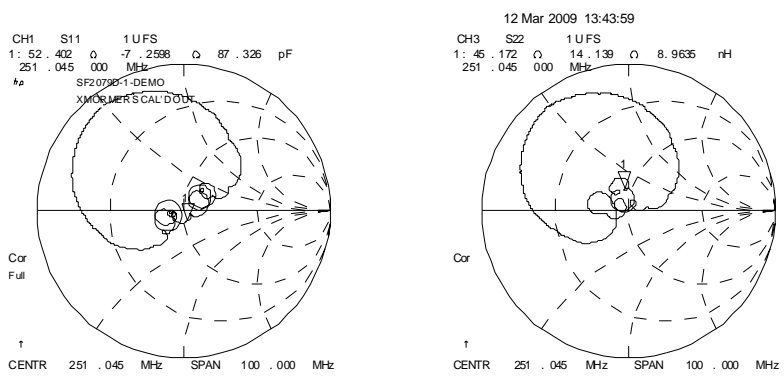
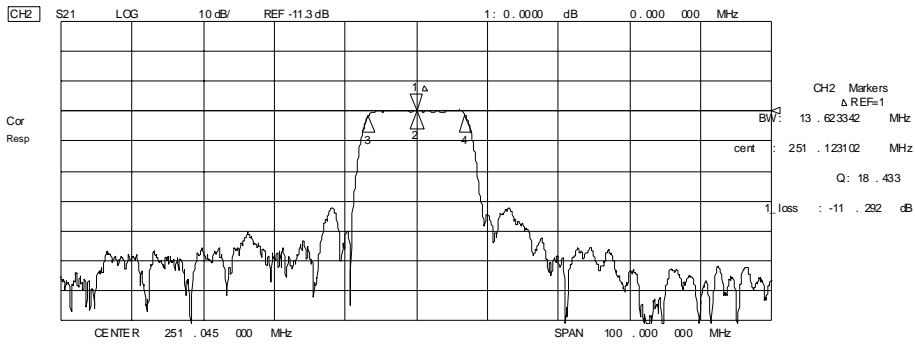
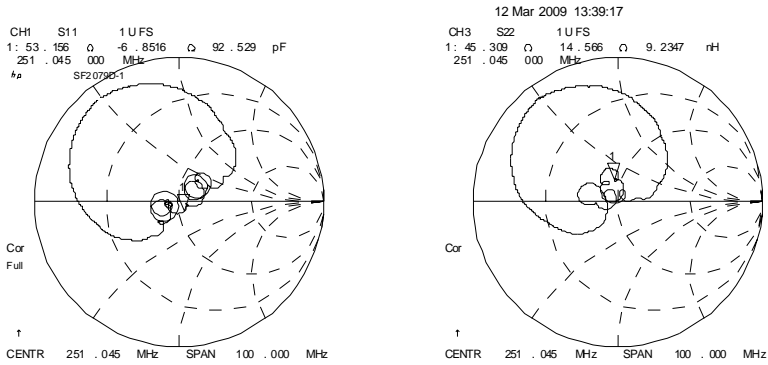
### Notes:

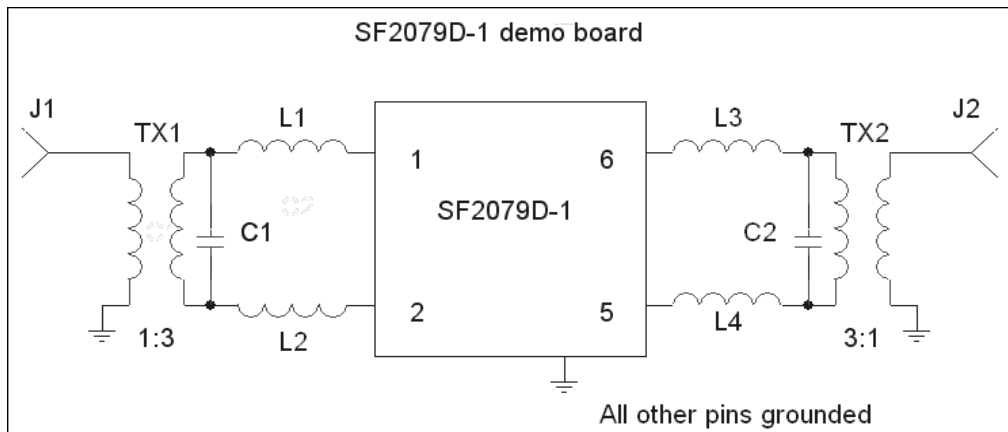
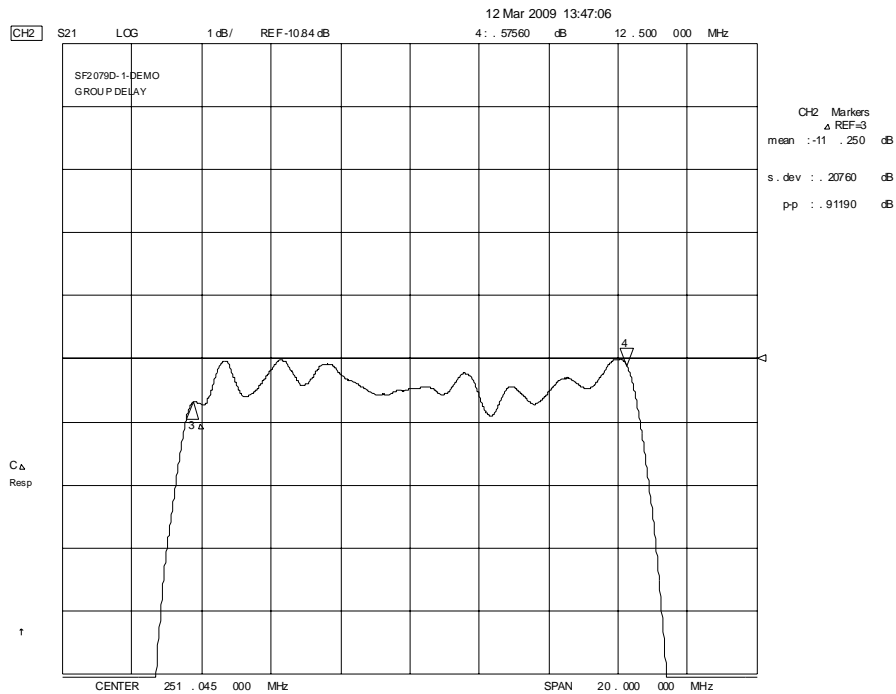
#### Notes:

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  $\Omega$  and measured with 50  $\Omega$  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. Tape and Reel Standard Per ANSI / EIA 481.
6. US and international patents may apply.
7. RFM, stylized RFM logo, and RF Monolithics, Inc. are registered trademarks of RF Monolithics, Inc.



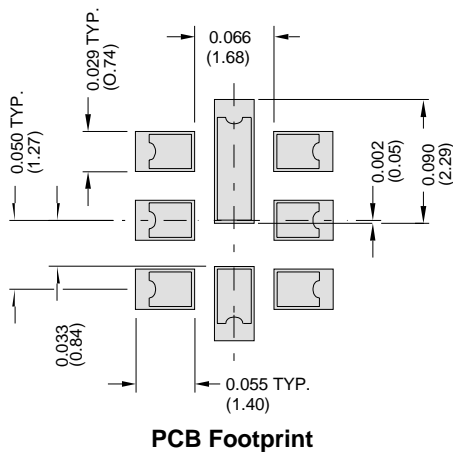


PCB	401-1706-001	
J1, J2	500-0248-002	2-HOLE FLANGE MOUNT SMA CONNECTOR
TX1, TX2	500-0912-003	1:3 TRANSFORMERS SMA
L1, L2	501-1068-430	IND, CHIP, 43nH 0603
L3, L4	501-1068-390	IND, CHIP, 39nH 0603
C1	501-0621-150	CAP, CHIP, 15pF 0603
C2	501-0621-160	CAP, CHIP, 16pF 0603

# SM3838-8 Thin Case

## 8-Terminal Ceramic Surface-Mount Case

### 3.8 X 3.8 mm Nominal Footprint



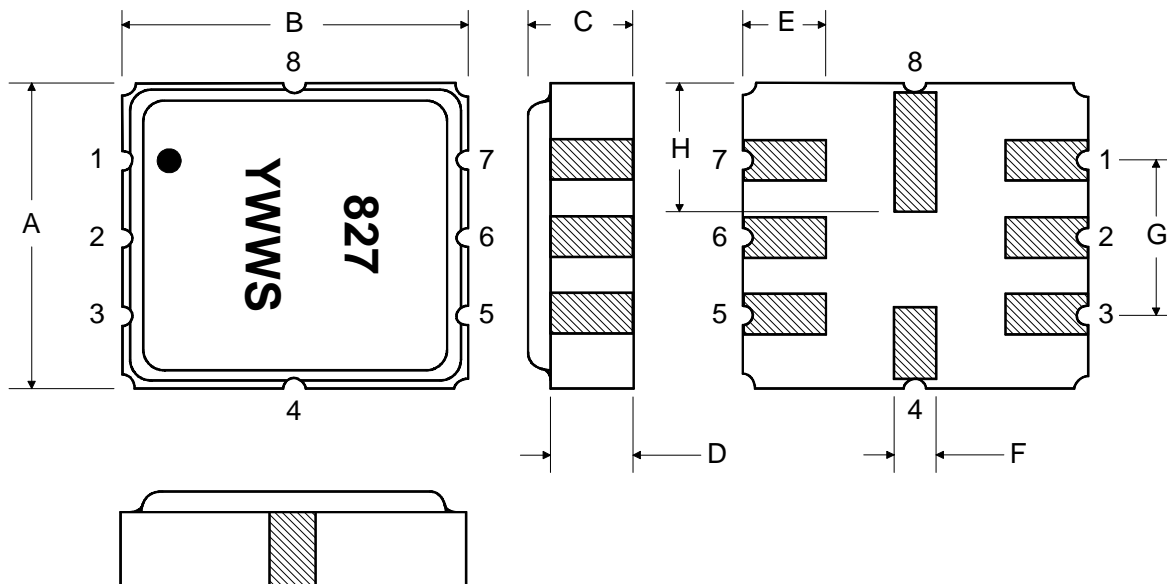
Case Dimensions						
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	3.6	3.8	4.0	0.142	0.150	0.157
B	3.6	3.8	4.0	0.142	0.150	0.157
C	0.90	1.00	1.1	0.035	0.040	0.043
D	0.80	0.90	1.0	0.031	0.035	0.040
E	0.90	1.00	1.10	0.035	0.040	0.043
F	0.50	0.60	0.70	0.020	0.024	0.028
G	2.39	2.54	2.69	0.090	0.100	0.110
H	1.40	1.75	2.05	0.055	0.069	0.080

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

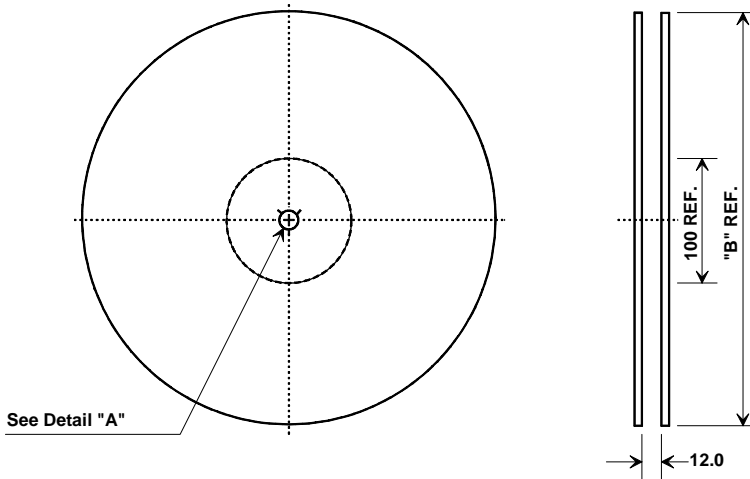
Materials	
Solder Pad Termination	Au plating 30 - 60 ulnches (76.2-152 uM) over 80-200 ulnches (203-508 uM) Ni.
Lid	Fe-Ni-Co Alloy Electroless Nickel Plate (8-11% Phosphorus) 100-200 ulnches Thick
Body	Al <sub>2</sub> O <sub>3</sub> Ceramic
Pb Free	

TOP VIEW

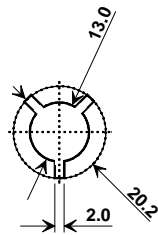
BOTTOM VIEW



## Tape and Reel Specifications



"B "		Quantity Per Reel
Nominal Size		
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

