Preliminary

SF2168E

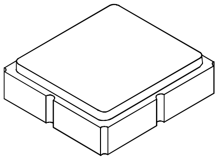
1688.42 MHz SAW Filter

- ***SAW Filter for Digital Television***
- ***Complies with Directive 2002/95/EC (RoHS)***

Characteristics :

Balance-to-Balanced Operation

Terminating Source/Load Impedance : $Z_S = 150\ \Omega$



SM3030-8

Maximum Rating

Rating	Value	Units
Input Power Level	0	dBm
DC Voltage on any Non-ground Terminal	3	V
Operating Temperature Range	-40 to +85	℃
Storage Temperature Range in Tape and Reel	-40 to +85	℃
Maximum Soldering Profile, 5 cycles/ 10 seconds maximum	265	℃

Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units
Center Frequency	f_C			1688.42		MHz
Maximum Insertion Loss, 1668.42 to 1708.42 MHz	IL_{MAX}			4.0	5.5	dB
1.5 dB Passband				62		MHz
Amplitude Ripple, 1668.42 to 1708.42 MHz				1.3	1.8	dB
Attenuation, Referenced to IL_{MAX}						
50 to 1606.36 MHz			45	54		dB
1770.48 to 1800 MHz			38	54		
1800 to 2000 MHz			46	49		
2000 to 6000 MHz			20	30		
Group Delay Ripple, 1668.42 to 1708.42 MHz				6	20	ns_{P-P}

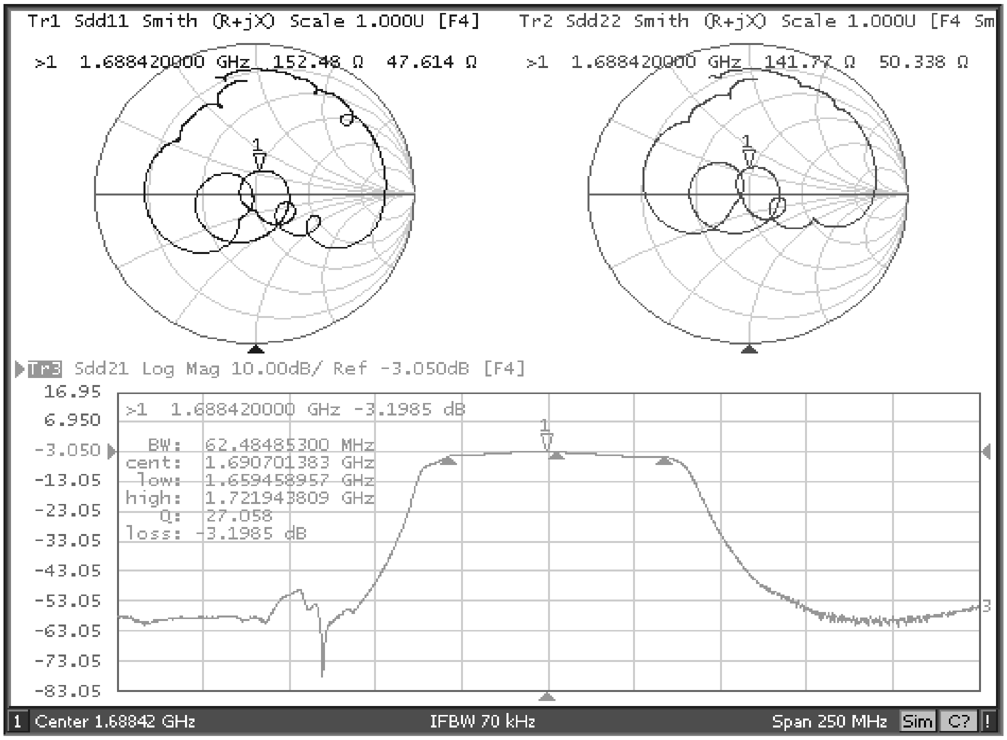
Case Style		SM3030-8 3.0 x 3.0 mm Nominal Footprint
Lid Symbolization (Y=year, WW=week, S=shift) dot=pin 1 indicator		855, YWWS
Standard Reel Quantity	Reel Size 7 Inch	500 Pieces/Reel
	Reel Size 13 Inch	3000 Pieces/Reel

CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

Notes:

1. US and international patents may apply.
2. RFM, stylized RFM logo, and RF Monolithics, Inc. are registered trademarks of RF Monolithics, Inc.

Filter S_{11}, S_{22} and S_{21} Plots



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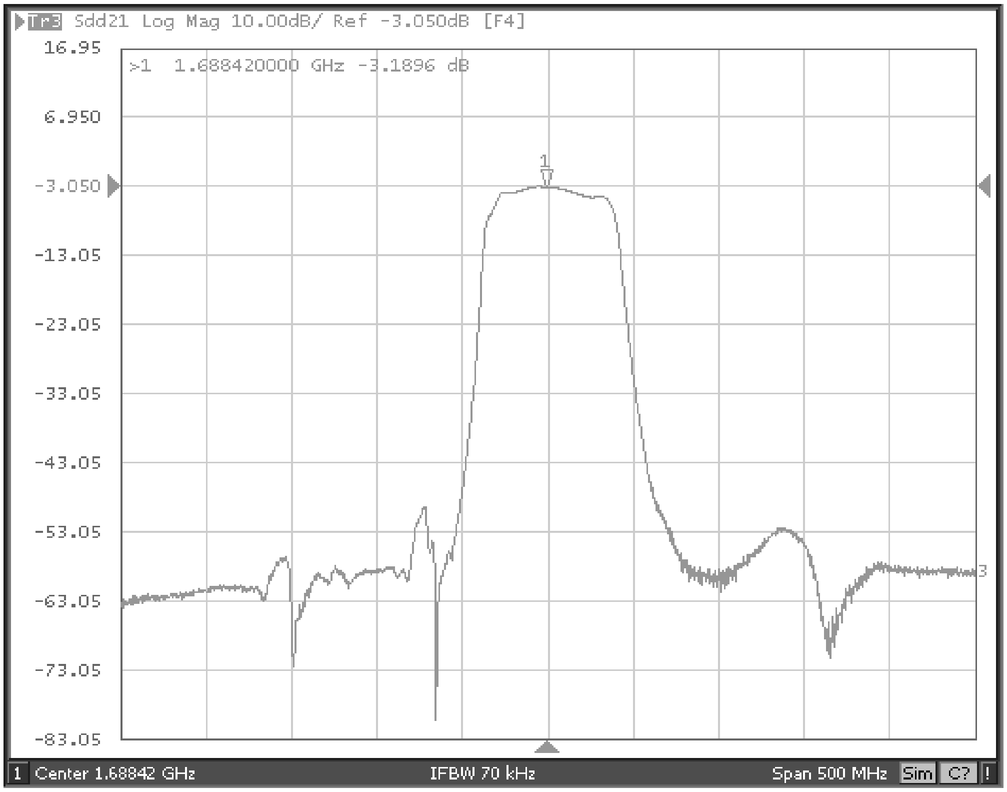
Tr1 Sdd11 Smith (R+jX) Scale 1.000U [F4]    Tr2 Sdd22 Smith (R+jX) Scale 1.000U [F4 Sm
 >1  1.688420000 GHz  152.48 Ω  47.614 Ω     >1  1.688420000 GHz  141.77 Ω  50.338 Ω
Tr3 Sdd21 Log Mag 10.00dB/ Ref -3.050dB [F4]
>1  1.688420000 GHz -3.1985 dB
  BW:  62.48485300 MHz
cent:  1.690701383 GHz
 low:  1.659458957 GHz
high:  1.721943809 GHz
   Q:  27.058
loss: -3.1985 dB
1  Center 1.68842 GHz          IFBW 70 kHz          Span 250 MHz  Sim  C?  !
```

Filter Near-in Rejection



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Tr3 Sdd21 Log Mag 10.00dB/ Ref -3.050dB [F4]
>1  1.688420000 GHz -3.1896 dB
1  Center 1.68842 GHz          IFBW 70 kHz          Span 500 MHz  Sim  C?  !
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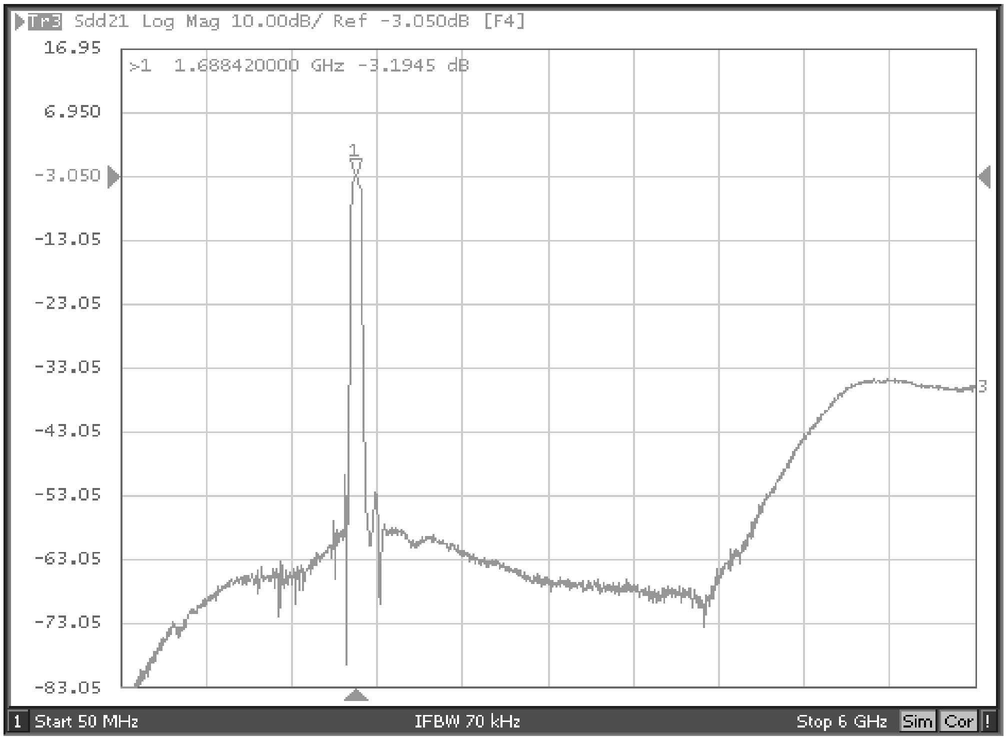
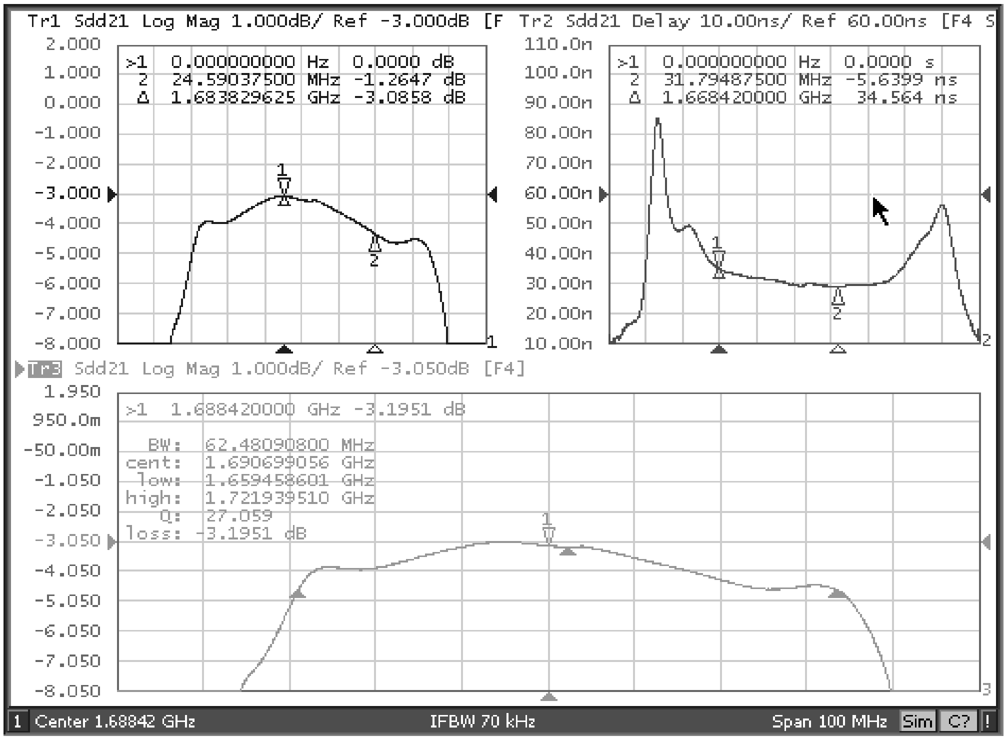
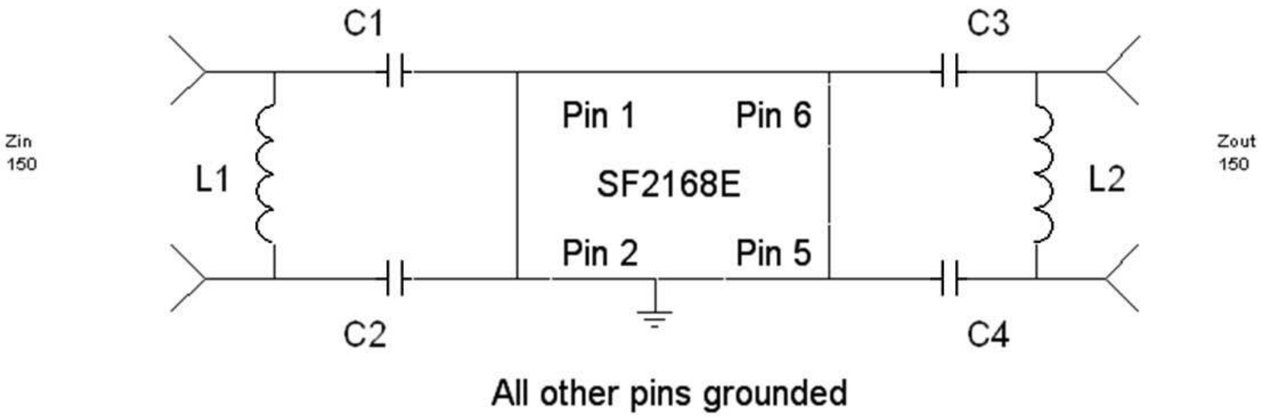
Filter Broadband Rejection



Filter Passband Amplitude and Group Delay Detail

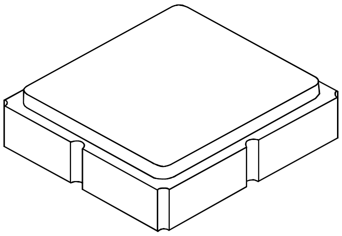


Tuning Network, 150 ohm Balanced Source/Load



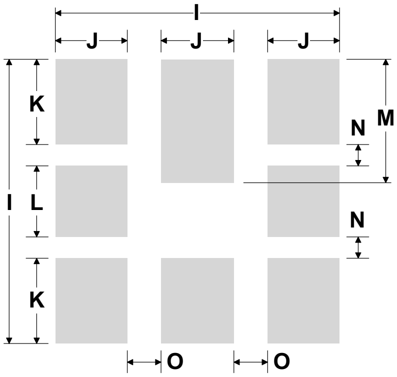
L1, L2	**10 nH**
C1, C2, C3, C4	**10 pF**

8-Terminal Ceramic Surface-Mount Case
3.0 X 3.0 mm Nominal Footprint



Case and PCB Footprint Dimensions

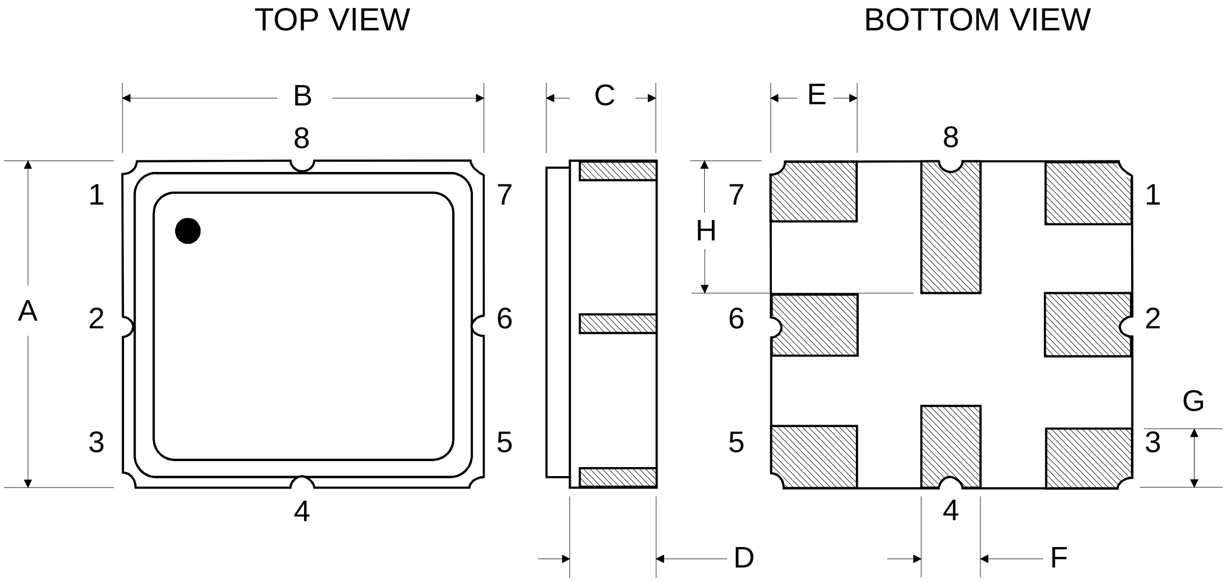
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	2.87	3.0	3.13	0.113	0.118	0.123
B	2.87	3.0	3.13	0.113	0.118	0.123
C	1.14	1.27	1.40	0.045	0.050	0.055
D	0.79	0.92	1.05	0.031	0.036	0.041
E	0.62	0.75	0.88	0.024	0.029	0.034
F	0.47	0.60	0.73	0.018	0.024	0.029
G	0.47	0.60	0.73	0.018	0.024	0.029
H	1.07	1.20	1.33	0.042	0.047	0.052
I		3.19			0.126	
J		0.81			0.032	
K		0.96			0.038	
L		0.81			0.032	
M		1.39			0.055	
N		0.23			0.009	
O		0.38			0.015	



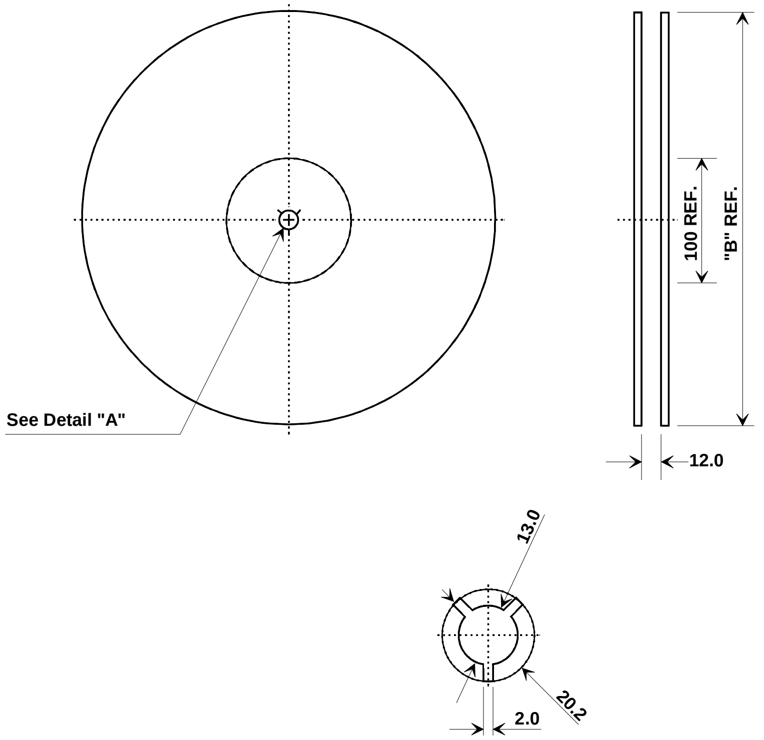
PCB Footprint Top View

Case Materials

Materials	
Solder Pad Plating	0.3 to 1.0 µm Gold over 1.27 to 8.89 µm Nickel
Lid Plating	2.0 to 3.0 µm Nickel
Body	Al_2O_3 Ceramic
Pb Free	



Tape and Reel Specifications



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

COMPONENT ORIENTATION and DIMENSIONS

Carrier Tape Dimensions	
Ao	3.35 mm
Bo	3.35 mm
Ko	1.40 mm
Pitch	8.0 mm
W	12.0 mm