



THE DATASHEET OF SF2296C



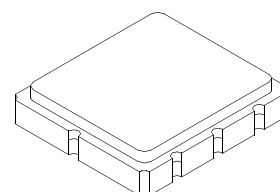
- **High Performance SAW Filter**
- **5.0 x 5.0 mm Surface-mount Package**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Moisture Sensitivity Level: 1**
- **AEC-Q200 Qualified**

Absolute Maximum Ratings

Rating	Value	Units
Maximum Incident Power in Passband	+10	dBm
Maximum DC Voltage Between any Two Active Terminals	6	VDC
Storage Temperature Range in Tape and Reel	-40 to +85	°C
Specification Temperature Range	-10 to +55	°C
Operable Temperature Range	-45 to +125	°C
Suitable for Lead-free Soldering - Maximum Soldering Profile	260 °C for 30 s	

SF2296C

**312.00 MHz
SAW Filter**



SM5050-8

Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units
Nominal Center Frequency	f_C			312.00		MHz
Minimum Insertion Loss	IL_{MIN}			1.8	2.0	dB
Passband Ripple, $f_C \pm 12.5$ kHz					1.0	dB _{P-P}
3 dB Bandwidth	BW_3		25	300		kHz
20 dB Bandwidth	BW_{20}			750	900	
30 dB Bandwidth	BW_{30}			1050	1200	
Attenuation, referenced to IL_{MIN}						dB
297.0 to 311.2 MHz			15	25		
312.8 to 327.0 MHz			15	25		
Input Impedance			50 Ω			
Output Impedance			50 Ω			

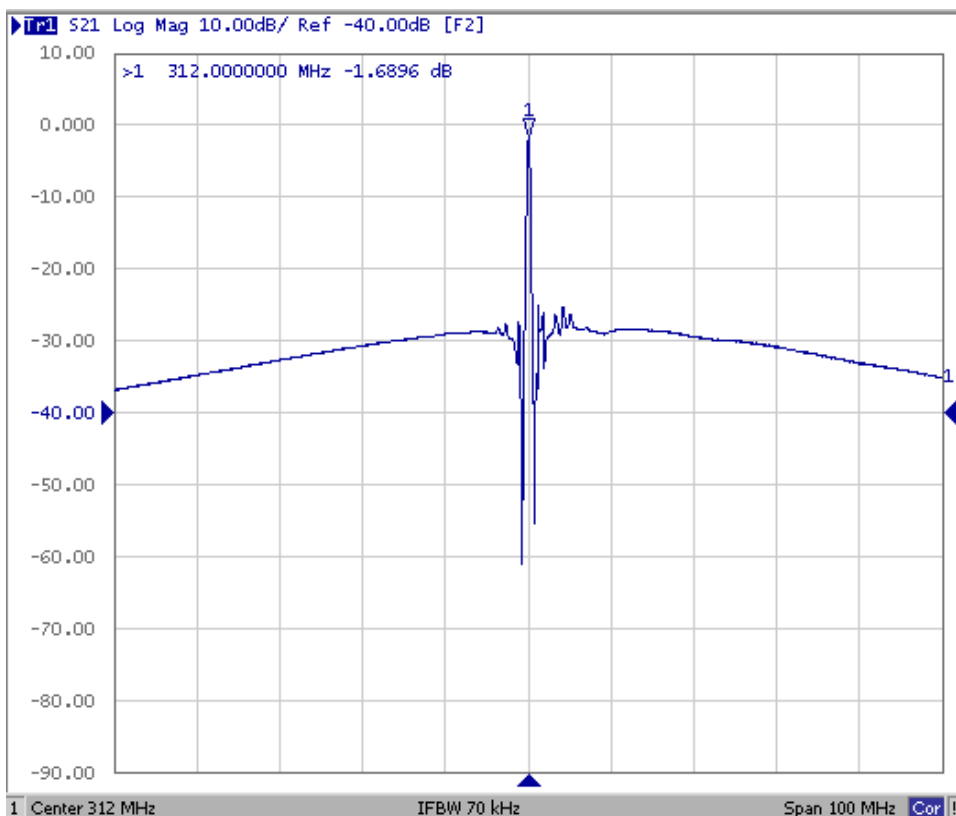
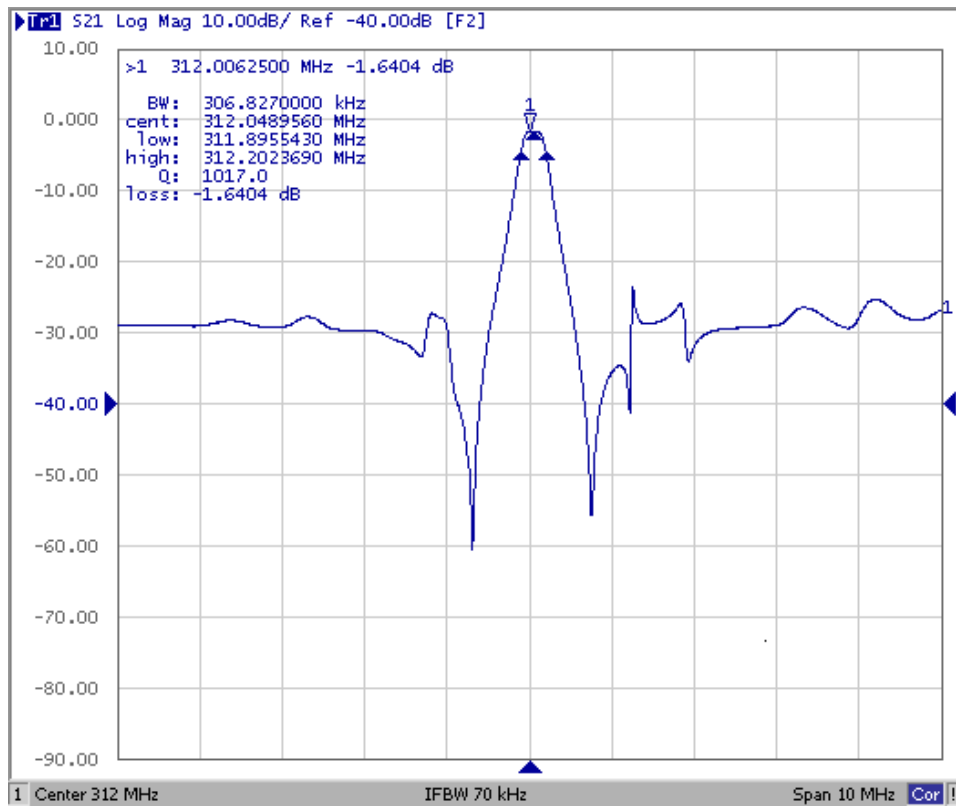
Case Style	SM5050-8 5.0 x 5.0 mm Nominal Footprint					
Lid Symbolization, Y=year, WW=week, S=shift, Dot=pin 1 indicator	A48, <u>YWWS</u>					
Standard Reel Quantity	Reel Size 7 Inch					500 Pieces/Reel
	Reel Size 13 Inch					3000 Pieces/Reel

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

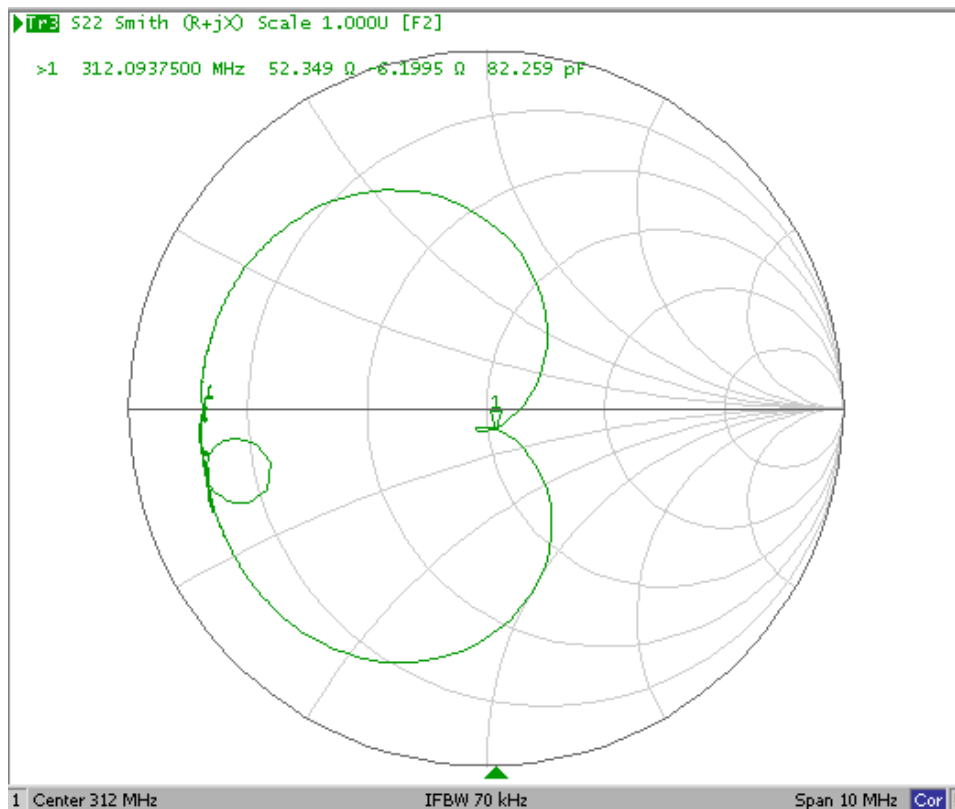
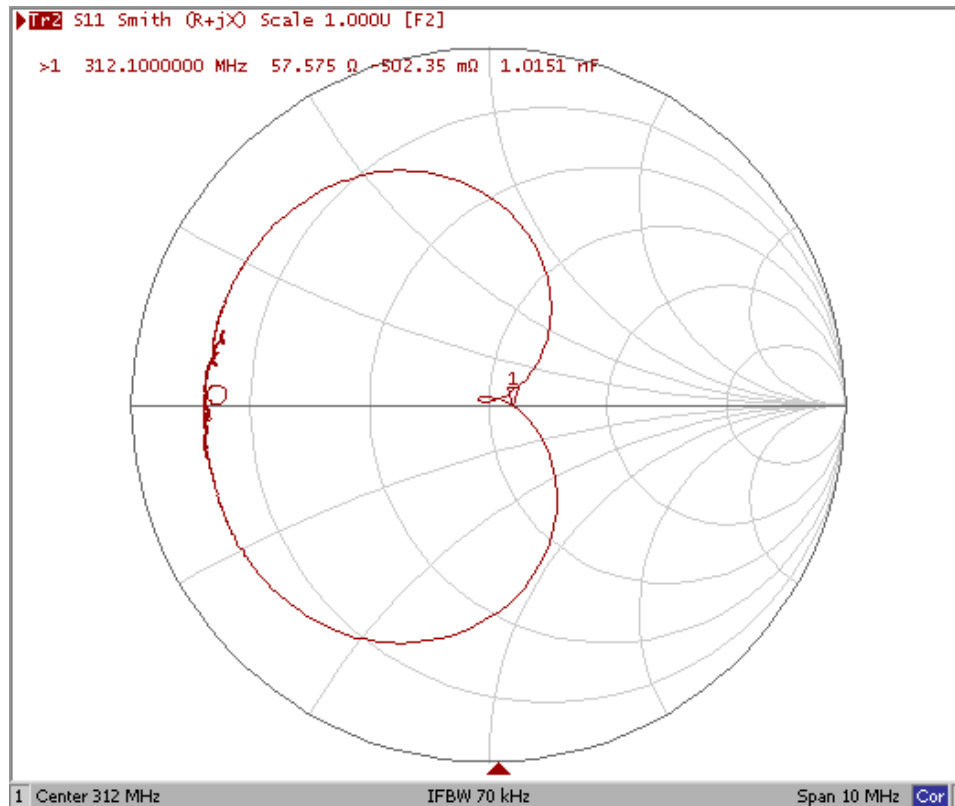
NOTES:

1. 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.

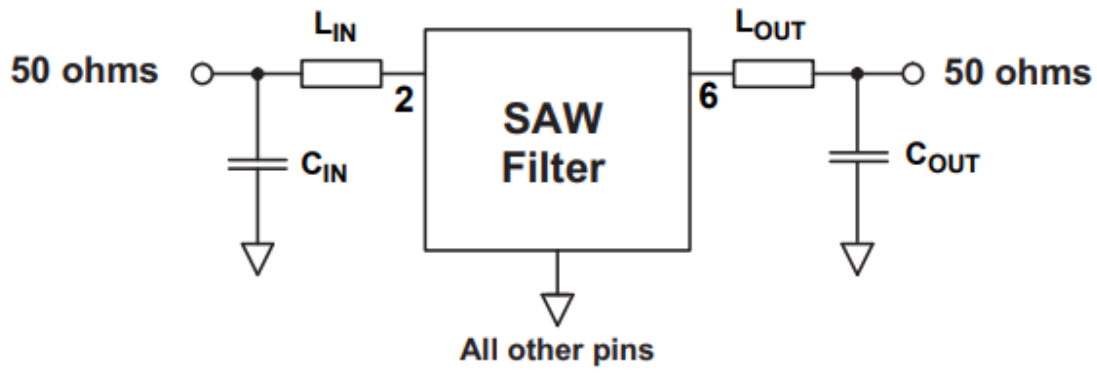
Filter Response Plots



Input/Output Impedance Plots

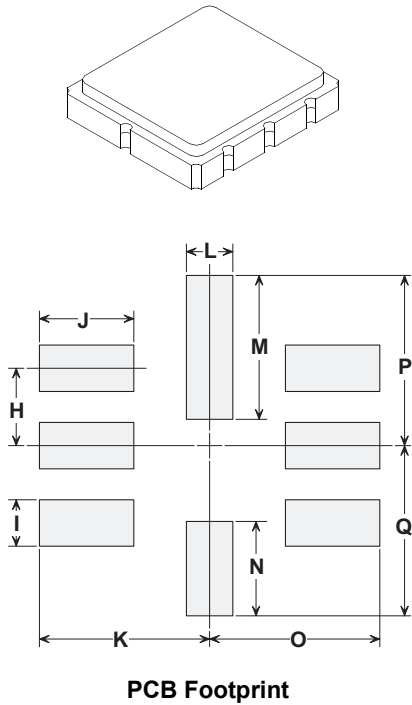


Filter Tuning Network Topology



$L_{IN} = L_{OUT} = 100 \text{ nH}$
 C_{IN}, C_{OUT} not required

SM5050-8 Surface-Mount 8-Terminal Ceramic Case 5.0 X 5.0 mm Nominal Footprint



Case Dimensions

Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	4.80	5.00	5.20	0.189	0.197	0.205
B	4.80	5.00	5.20	0.189	0.197	0.205
C	1.30	1.50	1.70	0.050	0.060	0.067
D	1.98	2.08	2.18	0.078	0.082	0.086
E	1.07	1.17	1.27	0.042	0.046	0.050
F	0.50	0.64	0.70	0.020	0.025	0.028
G	2.39	2.54	2.69	0.094	0.100	0.106
H		1.27			0.050	
I		0.76			0.030	
J		1.55			0.061	
K		2.79			0.110	
L		0.76			0.030	
M		2.36			0.093	
N		1.55			0.061	
O		2.79			0.110	
P		2.79			0.110	
Q		2.79			0.110	

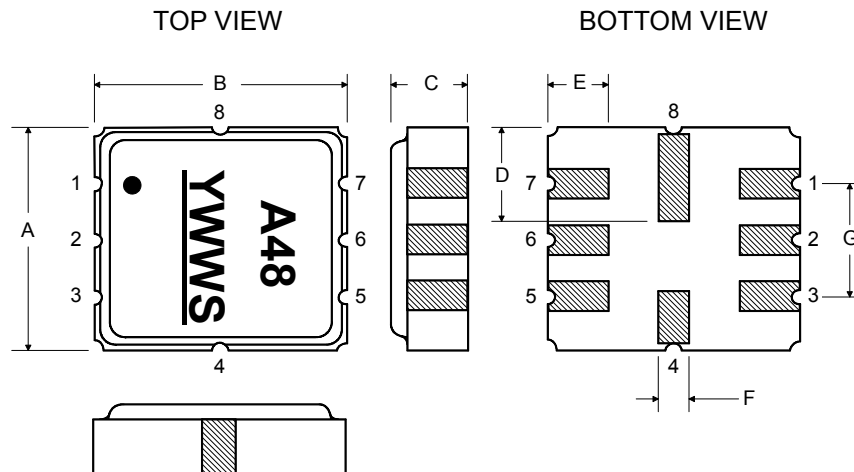
Case Materials

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

Electrical Connections

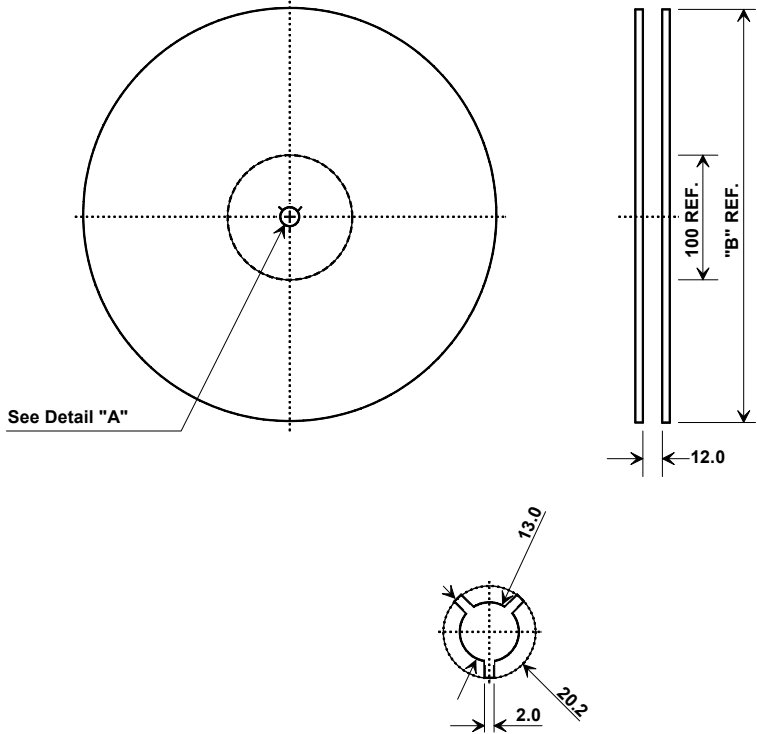
Connection		Terminals
Port 1	Input	2
Port 2	Output	6
	Ground	All others

Dot indicates Pin 1



Tape and Reel Specifications

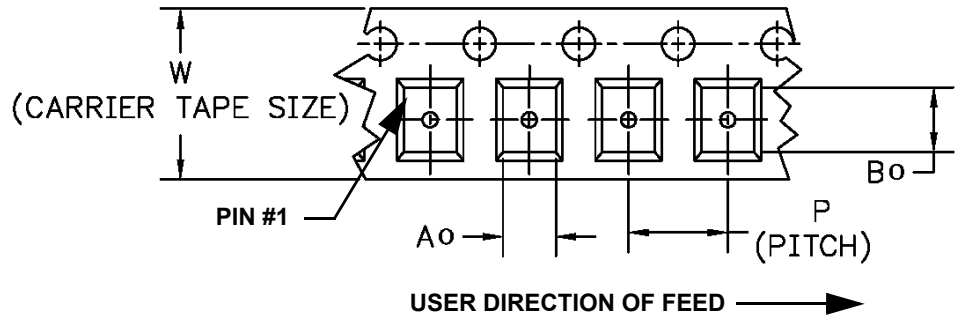
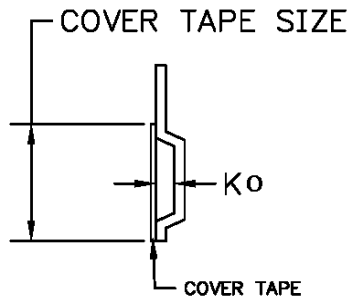
Tape and Reel Standard per ANSI/EIA-481



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

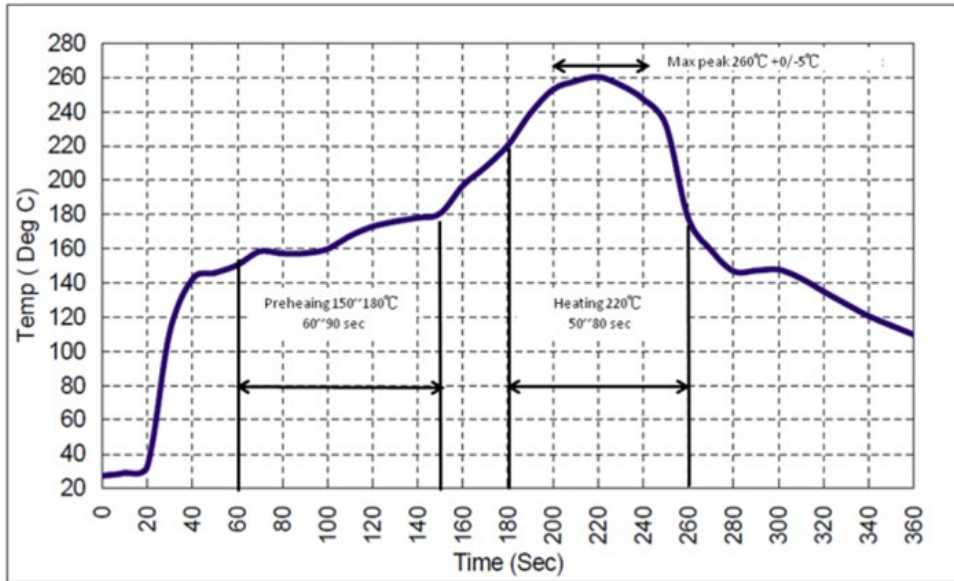
COMPONENT ORIENTATION and DIMENSIONS

Carrier Tape Dimensions	
Ao	5.3 mm
Bo	5.3 mm
Ko	2.0 mm
Pitch	8.0 mm
W	12.0 mm





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.



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