



AEC-Q200

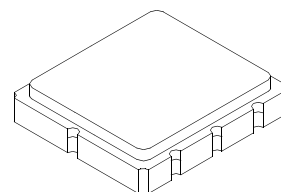
This component was always RoHS compliant from the first date of manufacture.

- **High Performance SAW Filter**
- **5.0 x 5.0 mm Surface-mount Package**
- **Complies with Directive 2002/95/EC (RoHS)**



SF2296C

**312.00 MHz
SAW Filter**



SM5050-8

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	

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			

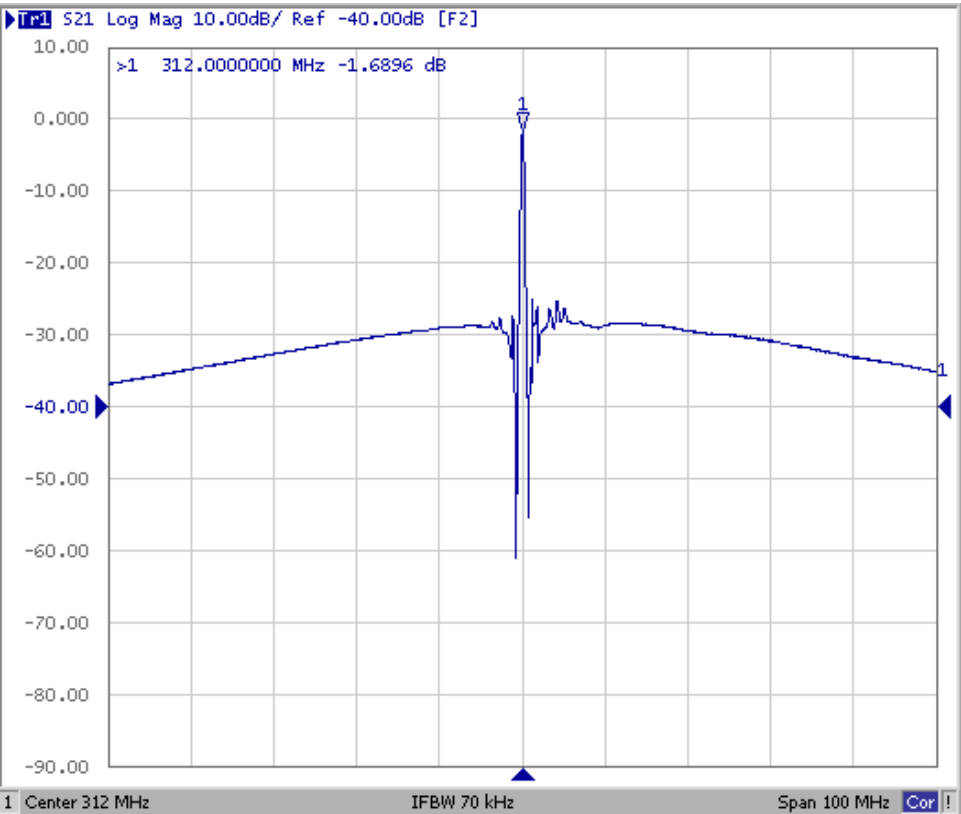
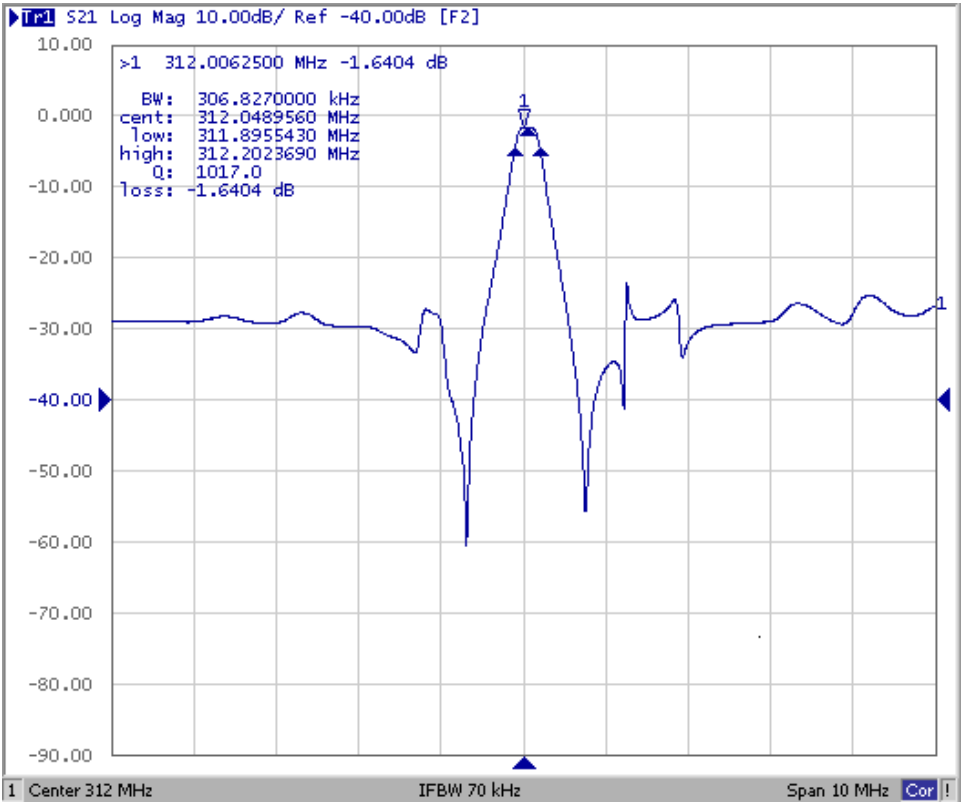


CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

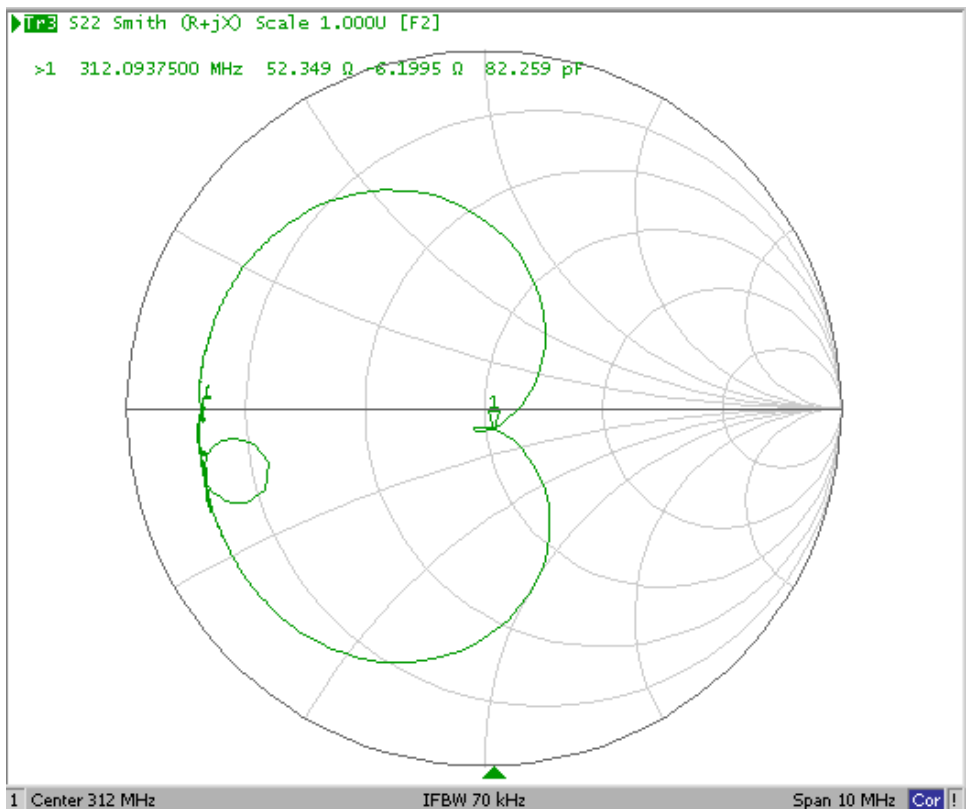
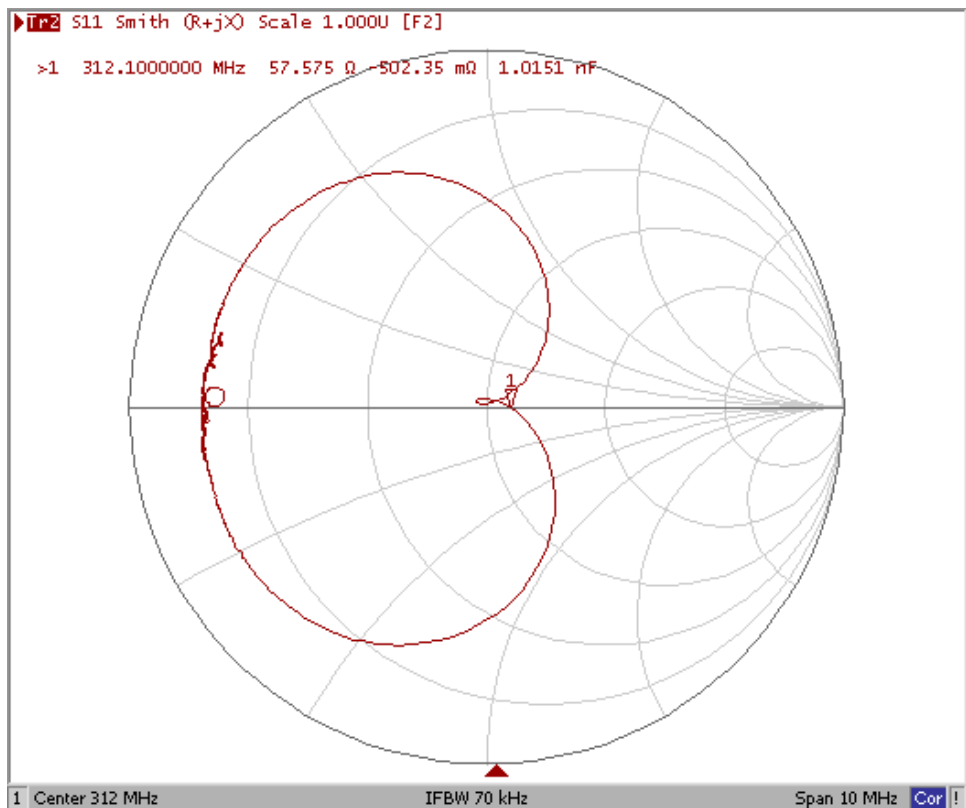
NOTES:

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.

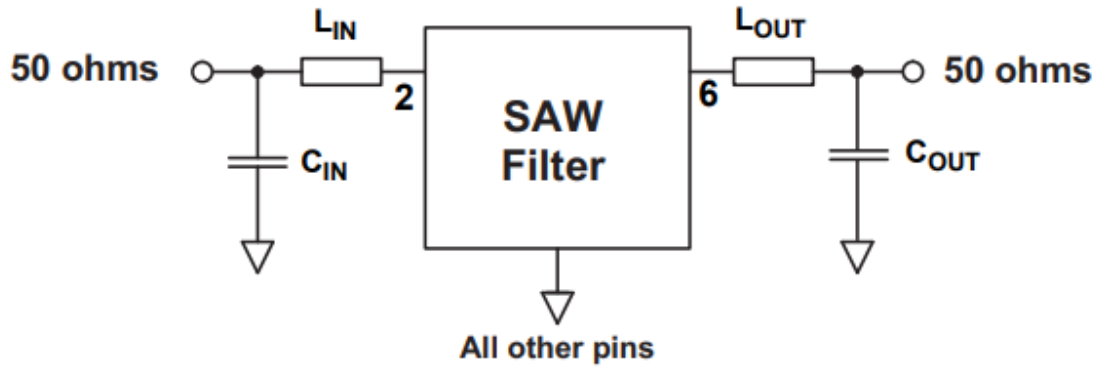
Filter Response Plots



Input/Output Impedance Plots

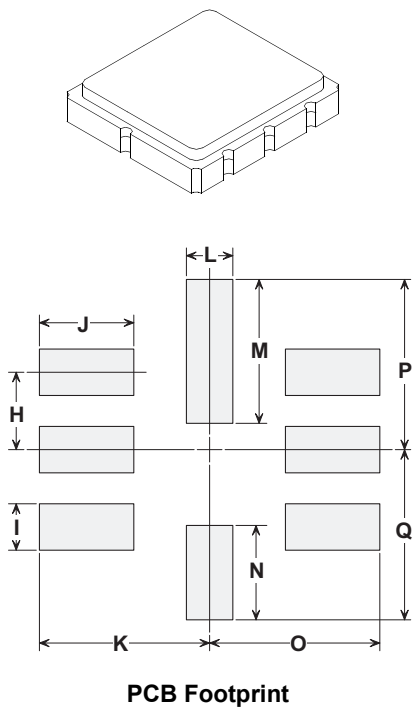


Filter Tuning Network Topology



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

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



Case Dimensions

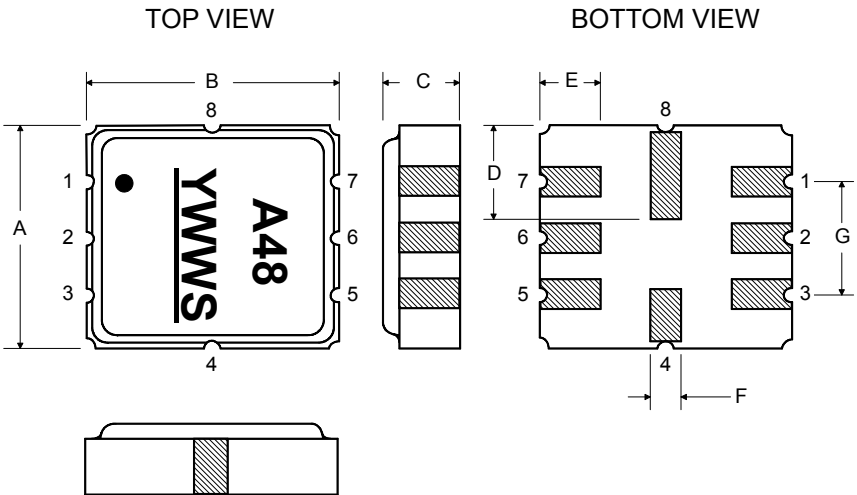
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	4.80	5.00	5.20	0.189	0.197	0.205
B	4.80	5.00	5.20	0.189	0.197	0.205
C	1.30	1.50	1.70	0.050	0.060	0.067
D	1.98	2.08	2.18	0.078	0.082	0.086
E	1.07	1.17	1.27	0.042	0.046	0.050
F	0.50	0.64	0.70	0.020	0.025	0.028
G	2.39	2.54	2.69	0.094	0.100	0.106
H		1.27			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 ₂ O ₃ Ceramic
Pb Free	

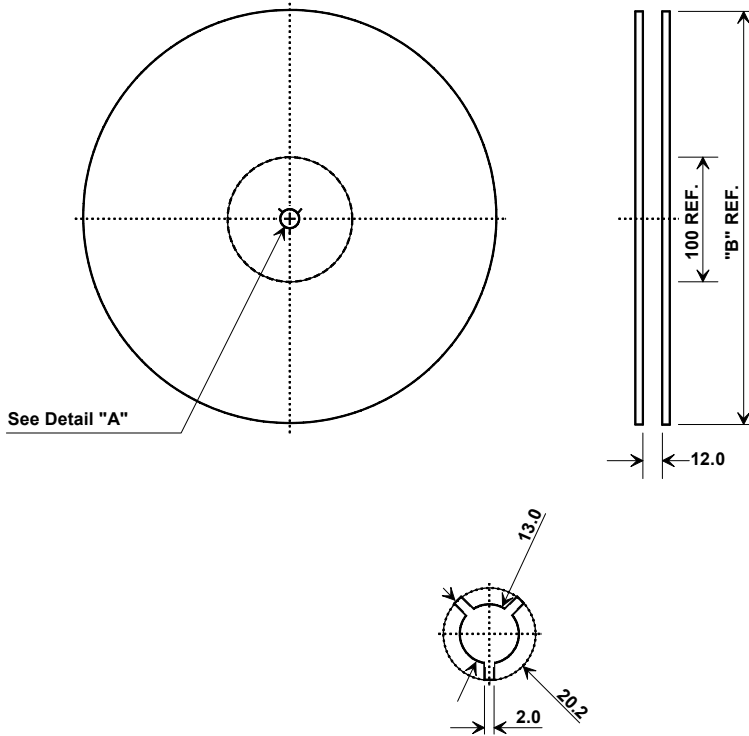
Electrical Connections

Connection		Terminals
Port 1	Input	2
Port 2	Output	6
	Ground	All others
Dot indicates Pin 1		



Tape and Reel Specifications

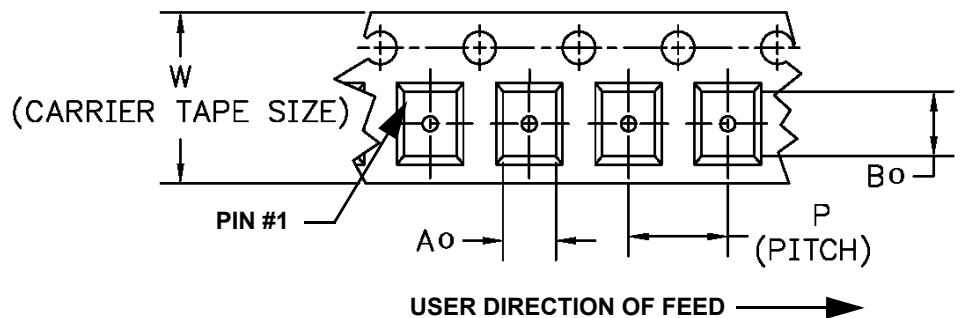
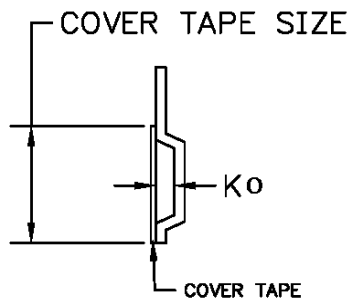
Tape and Reel Standard per ANSI/EIA-481



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

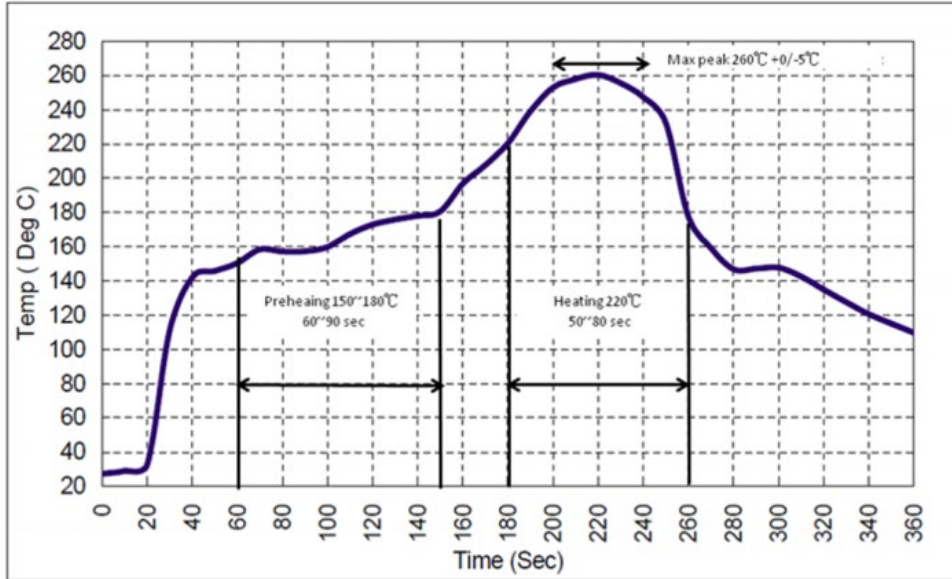
COMPONENT ORIENTATION and DIMENSIONS

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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