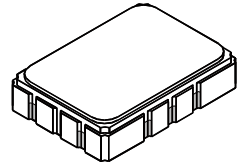


- Precision SAW Filter
- Simple Matching to 50 ohms
- 5.0 x 7.0 mm Surface-mount Case
- Complies with Directive 2002/95/EC (RoHS)



**SF2141B**

**210.38 MHz  
SAW Filter**



**SMP-03**

#### Absolute Maximum Ratings

Rating	Value	Units
Input Power Level	+10	dBm
DC Voltage on any Non-ground Terminal	3	V
Storage Temperature Range in Tape and Reel	-40 to +85	°C
Maximum Soldering Temperature	265 °C for 10 s	

#### Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units
Center Frequency	$f_C$			210.38		MHz
Insertion Loss at $f_C$	IL			8.2	11	dB
Amplitude Ripple, $f_C \pm 0.30$ MHz	AR			0.4	1.3	dB <sub>P-P</sub>
Group Delay				716		ns
Group Delay Ripple, $f_C \pm 0.30$ MHz				150		ns <sub>P-P</sub>
Phase Linearity, $f_C \pm 0.63$ MHz	RMS			2.60	3.75	deg
5 dB Bandwidth			$\pm 0.63$	$\pm 0.82$		MHz
34 dB Bandwidth				$\pm 1.18$	$\pm 1.25$	
36 dB Bandwidth				$\pm 1.20$	$\pm 1.55$	
Attenuation Referenced to IL:						
$f_C \pm 1.25$ MHz			35	48		dB
140 to 206 MHz			38	45		
214.76 to 280.00 MHz			38	48		
Specification Temperature Range	$T_A$		-25		+85	°C
Operable Temperature Range			-45		+125	°C
Case Style			SMP-03 7 x 5 mm Nominal Footprint			
Lid Symbolization, YY=year, WW=week, S=shift			RFM SF2141B YYWWS##			

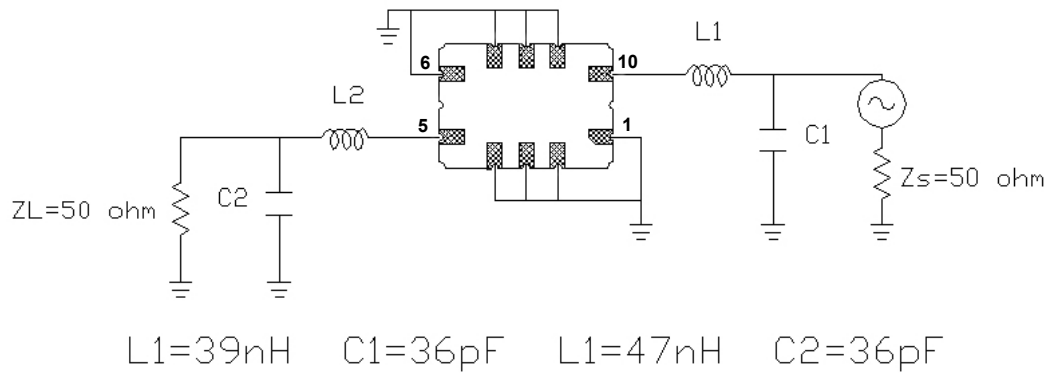


**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

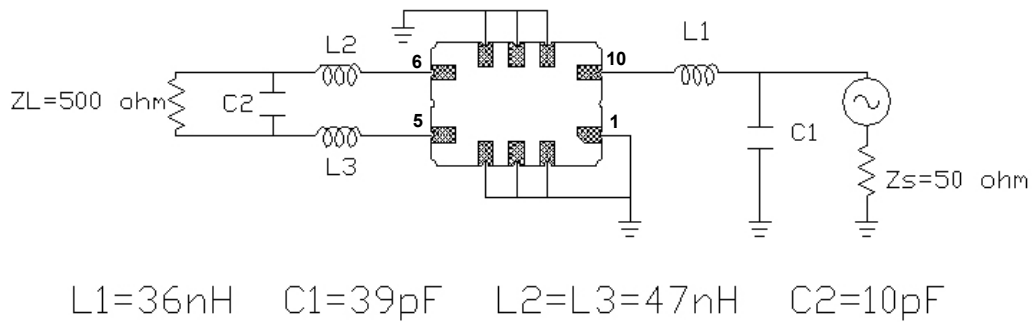
#### NOTES:

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

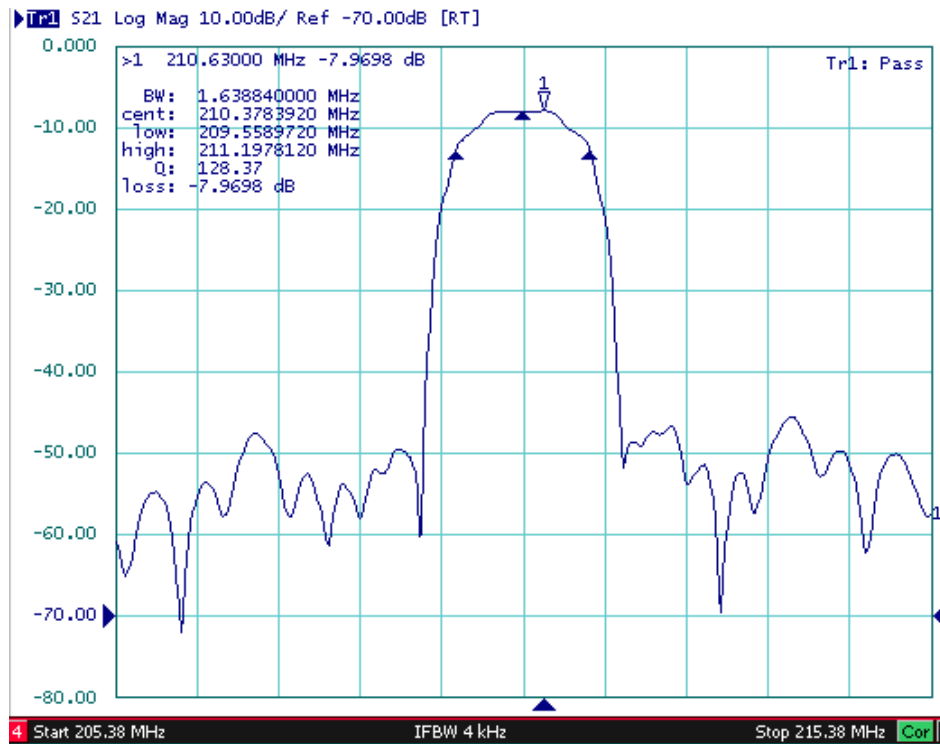
## Single-ended 50 ohm input / output test circuit



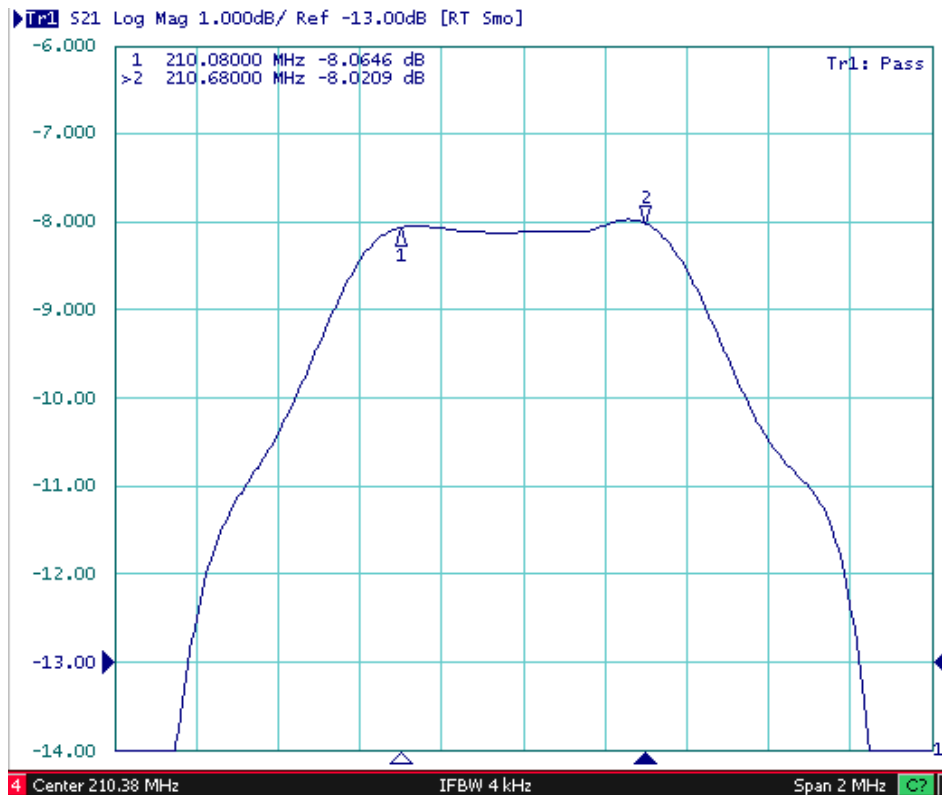
## Single-ended 50 ohm input / 500 ohm balanced output test circuit



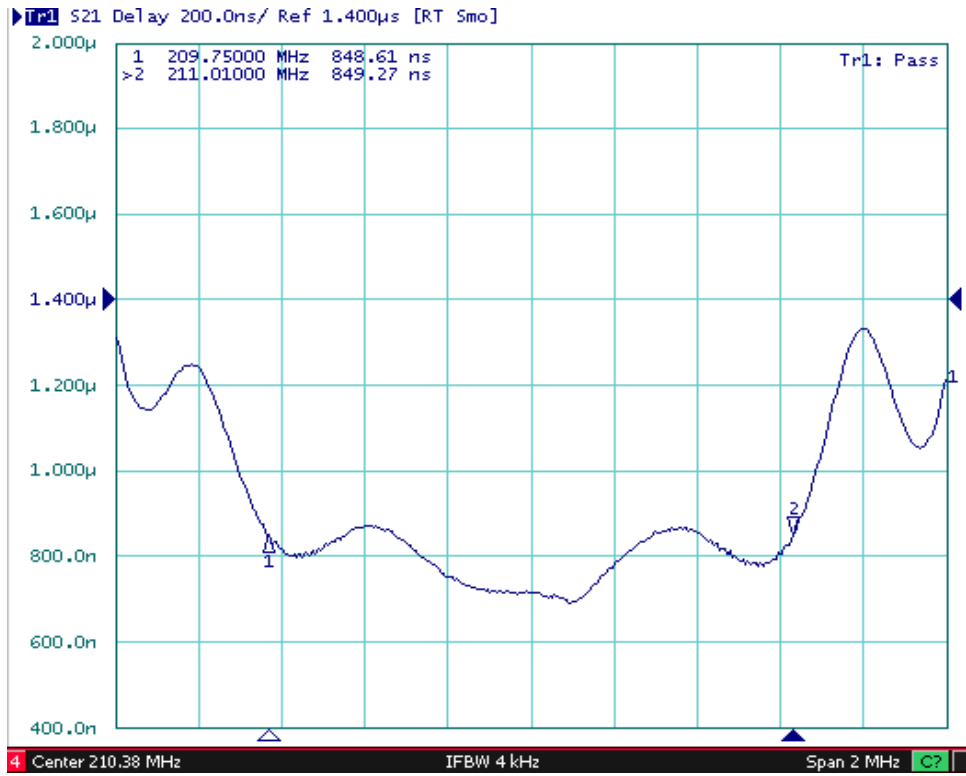
## Filter Broadband Amplitude Response



## Filter Passband Amplitude Response



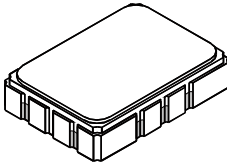
# Filter Passband Group Delay



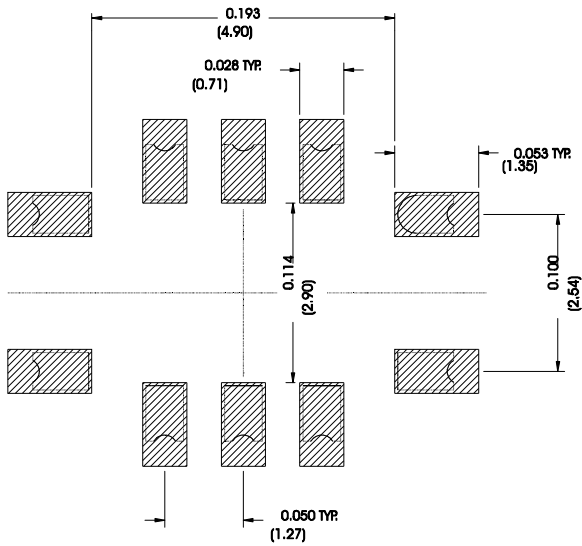
# SMP-03 Case

## 10-Terminal Ceramic Surface-mount Case

### 7 x 5 mm Nominal Footprint



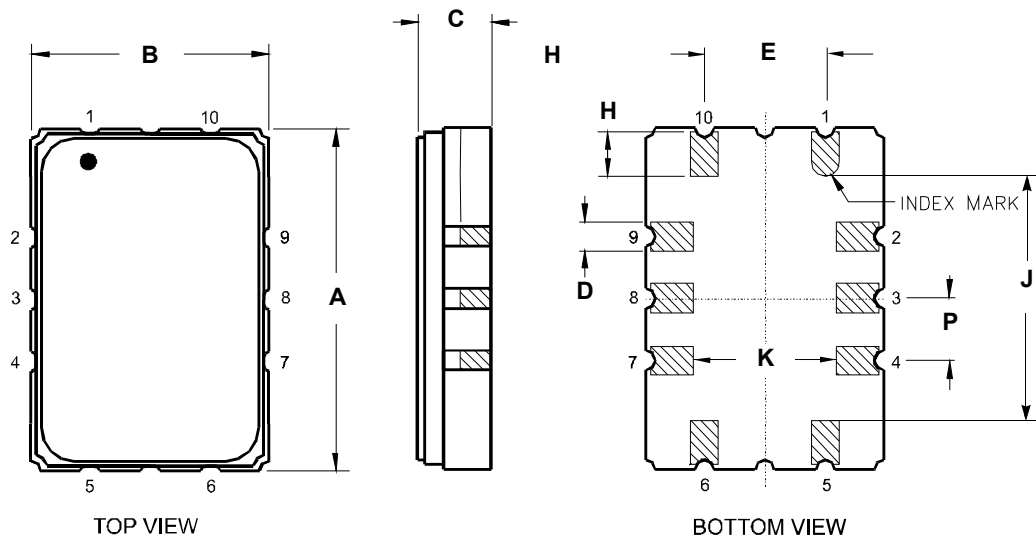
Recommended PCB Footprint



Case Dimensions						
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	6.80	7.00	7.20	0.268	0.276	0.283
B	4.80	5.00	5.20	0.189	0.197	0.205
C		1.65	2.00		0.065	0.079
D	.47	0.60	.73	0.019	0.024	0.029
E	2.41	2.54	2.67	0.095	0.100	0.105
H	0.87	1.0	1.13	0.034	0.039	0.044
J	4.87	5.00	5.13	0.192	0.197	0.202
K	2.87	3.00	3.13	0.113	0.118	0.123
P	1.14	1.27	1.40	0.045	0.050	0.055

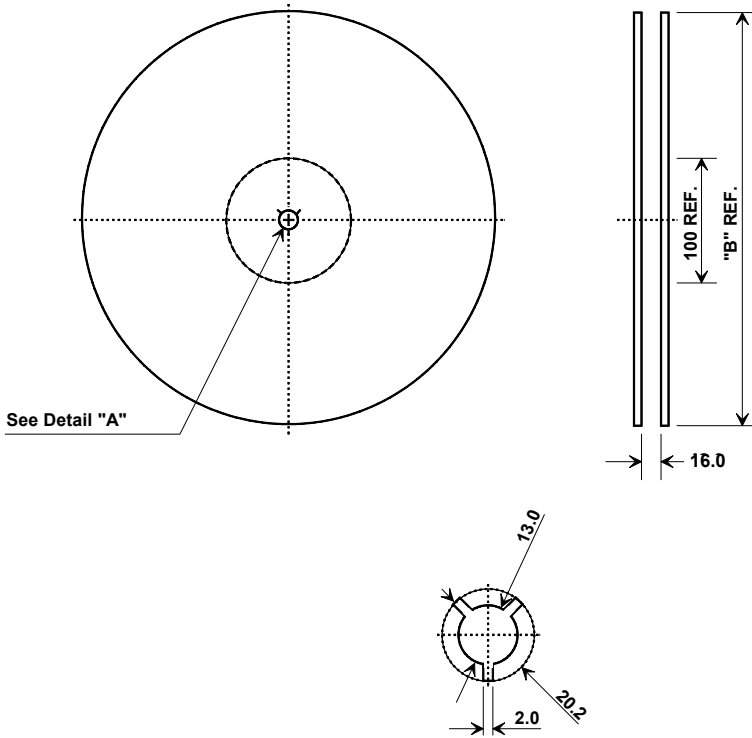
Electrical Connections	
Connection	Terminals
Input	1
Input Ground	10
Output	6
Output Ground	5
Ground	All others

Case	
Materials	
Solder Pad Plating	0.3 to 1.0 $\mu\text{m}$ Gold over 1.27 to 8.89 $\mu\text{m}$ Nickel
Lid Plating	2.0 to 3.0 $\mu\text{m}$ Nickel
Body	$\text{Al}_2\text{O}_3$ Ceramic
Pb Free	



# Tape and Reel Specifications

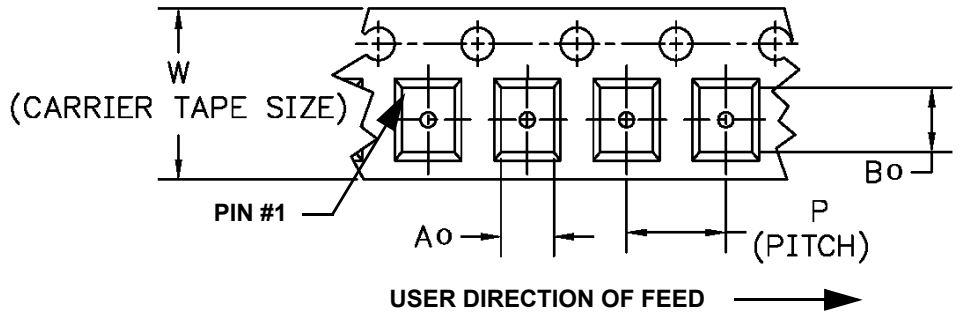
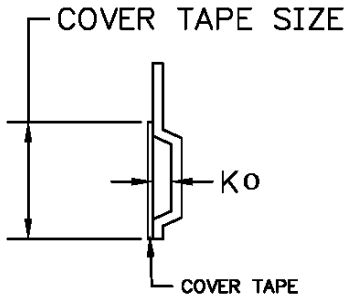
Tape and Reel Standard per ANSI/EIA-481



"B"		Quantity Per Reel
Inches	millimeters	
7	178	500
13	330	2000

## COMPONENT ORIENTATION and DIMENSIONS

Carrier Tape Dimensions	
Ao	5.5 mm
Bo	7.5 mm
Ko	2.0 mm
Pitch	8.0 mm
W	16.0 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.

