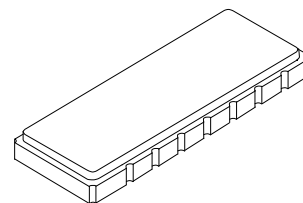


SF2219A

**193.6 MHz
SAW Filter**



SM1154-14

- **Low Insertion Loss**
- **Excellent Size-to-Performance Ratio**
- **Hermetic SMP-53-S Surface-mount Case**
- **Single-ended Input and Output**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Moisture Sensitivity Level: 1**

Absolute Maximum Ratings

Rating	Value	Units
Maximum Incident Power in Passband	+18	dBm
Maximum DC Voltage on any Non-ground Terminal	30	VDC
Storage Temperature Range in Tape and Reel	-40 to +85	°C
Suitable for Lead-free Soldering - Maximum Soldering Profile	260°C for 30 s	

Electrical Specifications

Characteristic	Sym	Notes	Min	Typ	Max	Units
Nominal Center Frequency	f_c		193.6			MHz
Passband:						
Minimum Insertion Loss, 193.5 to 193.7 MHz				8.0	9.0	dB
3 dB Bandwidth	BW_3		425			kHz
Amplitude Ripple, 193.5 to 193.7 MHz				0.5	1.0	dB _{P-P}
Group Delay Variation, 193.405 to 193.795 MHz	GDV			1000	1500	ns _{P-P}
Absolute Delay at 193.6 MHz	AGD		1700	1900	2100	ns
Rejection:						
193.1 and 194.1 MHz			25	27		dB
188.0 and 198.0 MHz			42	45		
Ultimate Rejection, <184 MHz, >203 MHz			45	50		
Operating Temperature Range	T_A		0		+70	°C

Impedance Matching to 50 Ω Single-ended Source and Load	External L-C
Case Style	SM1154-14, 11.5 x 4 mm Nominal Footprint
Lid Symbolization (YY = year, WW = week, S= Shift, ## = Sequence Code)	RFM, SF2219A, <u>YYWWS##</u>

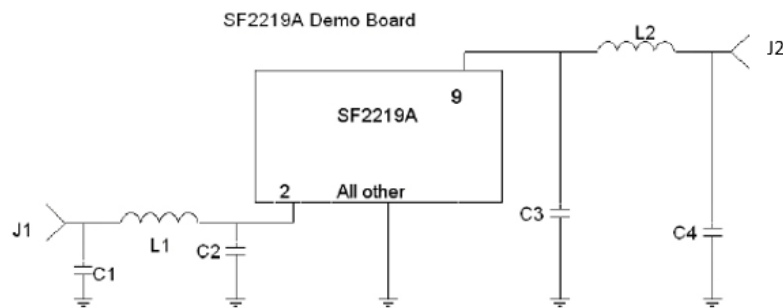
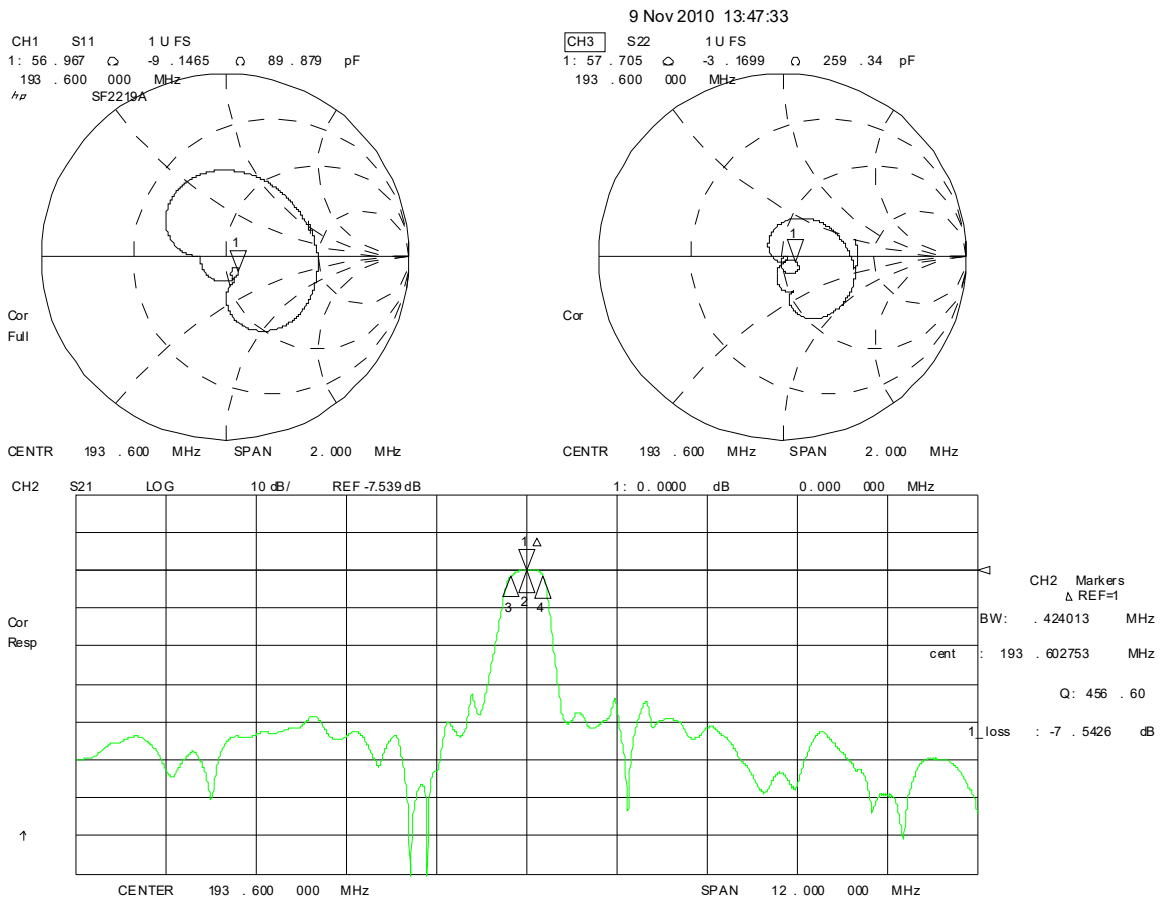


CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

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.

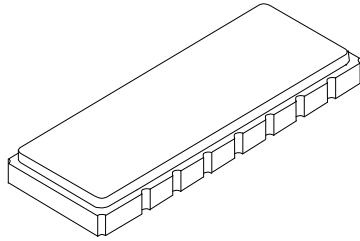
Frequency Response Plots



- PCB=401-1650-001 pins 2 & 9 L1= 120nH 1008CS
 J1, J2= SMA 4 hole flange conn. L2= 100nH 1008CS
 C1= 33pF 0805
 C2= 0.75pF 0805
 C3= 2.0pF 0805
 C4= 39pF 0805

SM1154-14 Ceramic Surface-mount 14-Terminal Case

11.5 x 4.0 mm Nominal Footprint

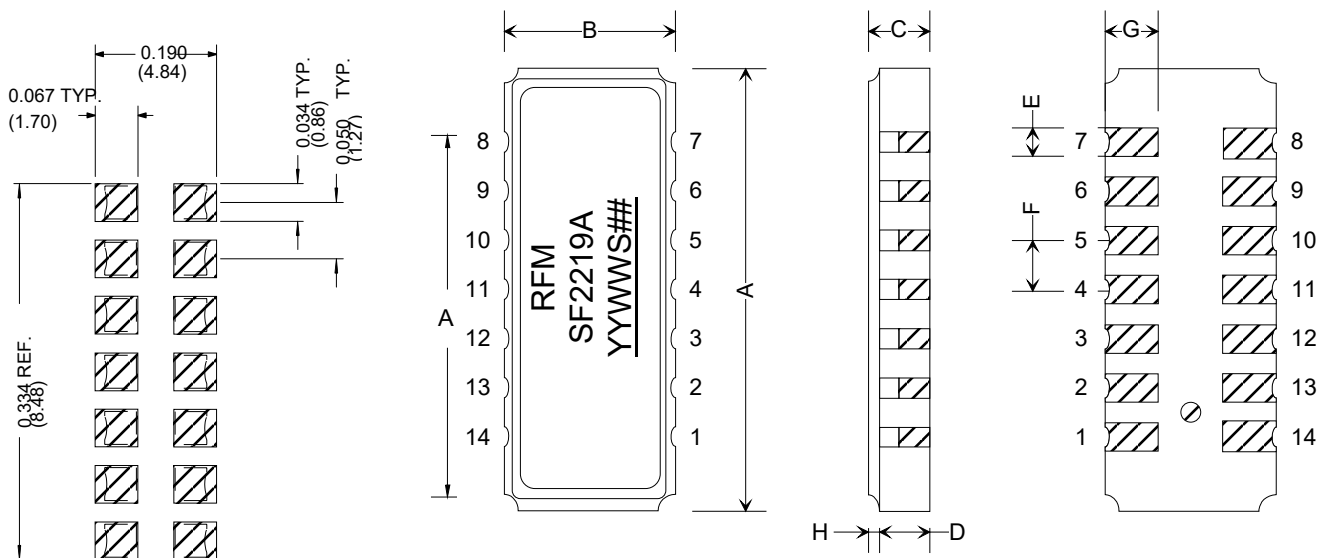


Case Dimensions						
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	11.4	11.5	11.6	.442	0.450	0.458
B	3.8	4.0	4.2	.150	0.157	.166
C	1.4	1.6	1.8	.057	0.063	.069
D	1.3	1.5	1.7	.053	0.059	.065
E		0.76			0.030	
F		1.27			0.050	
G		1.27			0.050	
H		0.1			0.004	

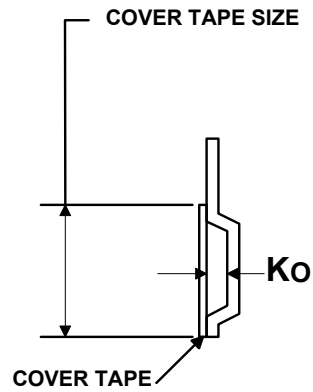
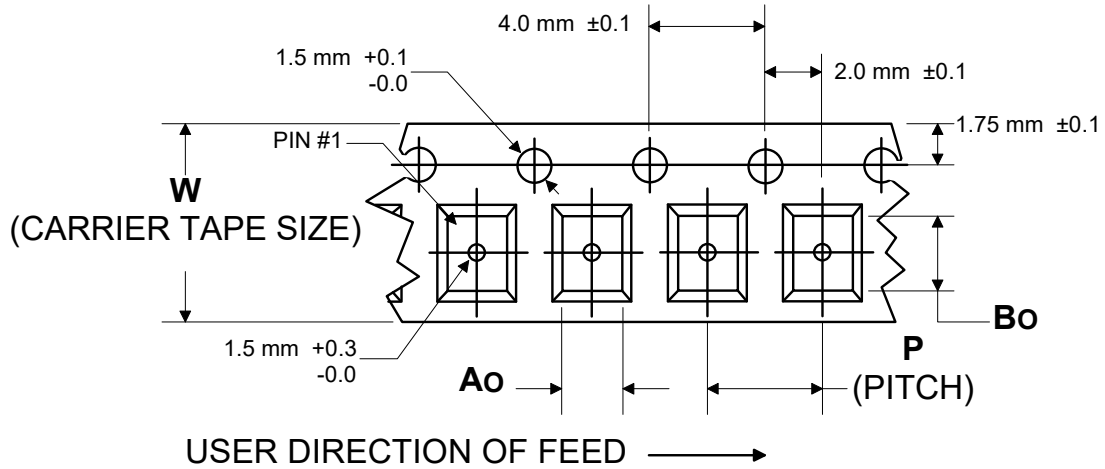
Materials	
Solder Pad Plating	0.3 to 1.0 μm Gold over 1.27 to 8.89 μm Nickel
Lid Plating	2.0 to 3.0 μm Nickel
Body	Al_2O_3 Ceramic

Electrical Connections	
Connection	Terminals
Input	2
Input Return	13
Output	9
Output Return	6
Ground	All Others

Recommended PCB Footprint



COMPONENT ORIENTATION and DIMENSIONS



Carrier Tape Dimensions		
A_o	4.55 mm	± 0.1
B_o	12.04 mm	± 0.1
K_o	2.13 mm	± 0.1
Pitch	8.00 mm	± 0.1
W	24.00 mm	± 0.3

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.

