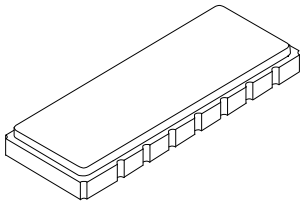
Preliminary

RFM products are now Murata products.

SF2219A

193.6 MHz SAW Filter

- ***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)***



SM1154-14

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	1		193.6		MHz
Passband:						
Minimum Insertion Loss, 193.5 to 193.7 MHz				8.0	9.0	dB
3 dB Bandwidth	BW_3	1, 2	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:		1, 2, 3				dB
193.1 and 194.1 MHz			25	27		
188.0 and 198.0 MHz			42	45		
Ultimate Rejection, <184 MHz, >203 MHz			45	50		
Operating Temperature Range	T_A	1	0		+70	°C

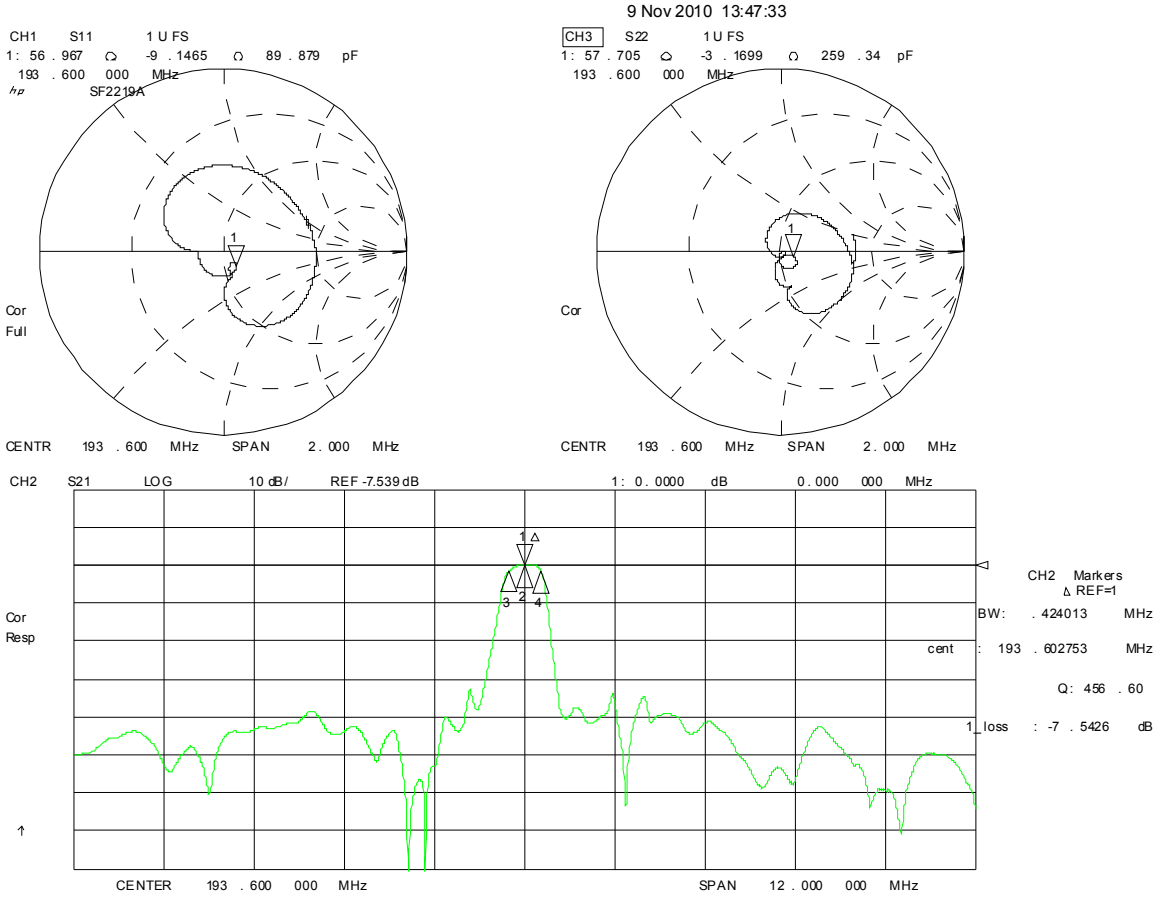
Impedance Matching to 50 Ω Single-ended Source and Load	External L-C
Case Style	SM1154-14, 11.5 x 4 mm Nominal Footprint
Lid Symbolization (YY = year, WW = week)	SF2219A, YYWW

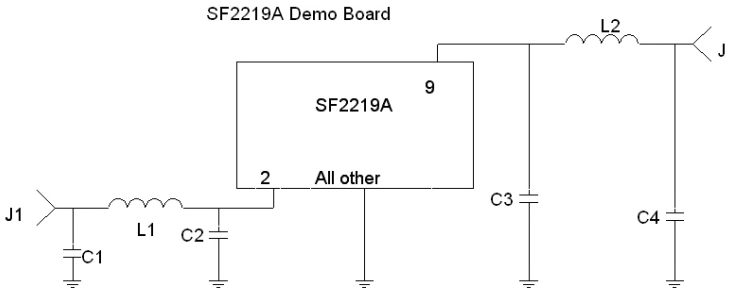
CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

NOTES:

1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to the specified demonstration board with impedance matching to 50 Ω and measured with 50 Ω network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency, fc.
3. Rejection is measured as attenuation below the minimum IL point in the passband. Rejection in final user application is dependent on PCB layout and external impedance matching design. See Application Note No. 42 for details.
4. The turnover temperature, T_O, is the temperature of maximum (or turnover) frequency, f_o. The nominal frequency at any case temperature, T_c, may be calculated from: $f=f_o[1-FTC(T_o-T_c)^2]$.
5. The design, manufacturing process, and specifications of this filter are subject to change.
6. Either Port 1 or Port 2 may be used for either input or output in the design. However, impedances and impedance matching may vary between Port 1 and Port 2, so that the filter must always be installed in one direction per the circuit design.
7. US and international patents may apply.

Frequency Response Plots





PCB=401-1650-001 pins 2 & 9

J1, J2= SMA 4 hole flange conn.

C1= 33pF 0805

C2= 0.75pF 0805

C3= 2.0pF 0805

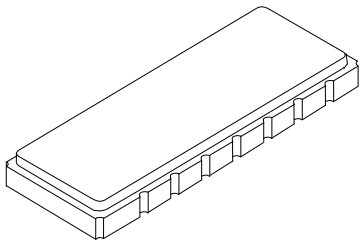
C4= 39pF 0805

L1= 120nH 1008CS

L2= 100nH 1008CS

SM1154-14 Ceramic Surface-mount 14-Terminal Case

11.5 x 4.0 mm Nominal Footprint

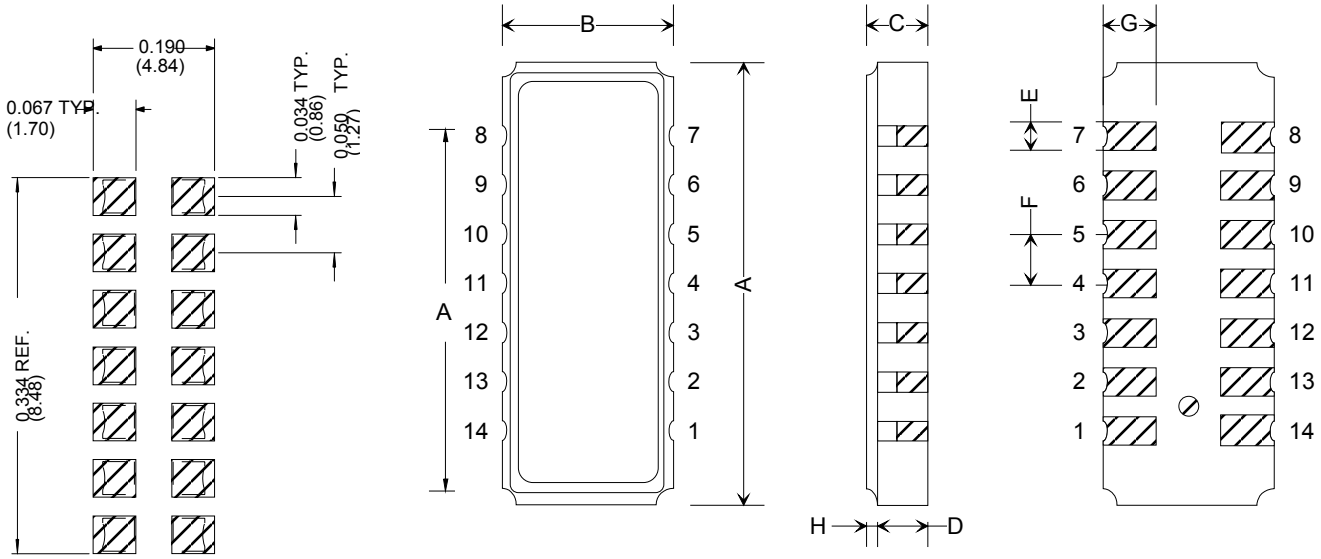


Case Dimensions						
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	11.4	11.5	11.6	.442	0.450	0.458
B	3.8	4.0	4.2	.150	0.157	.166
C	1.4	1.6	1.8	.057	0.063	.069
D	1.3	1.5	1.7	.053	0.059	.065
E		0.76			0.030	
F		1.27			0.050	
G		1.27			0.050	
H		0.1			0.004	

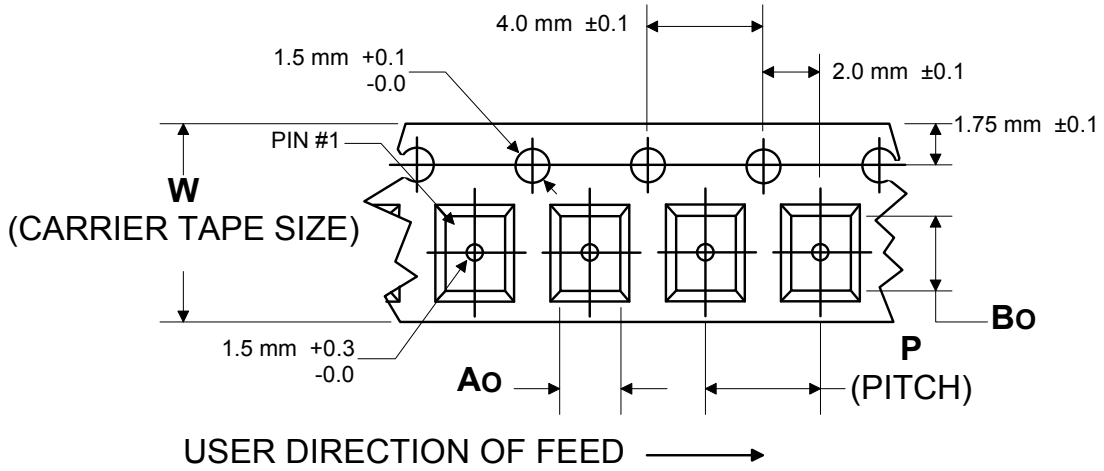
Materials	
Solder Pad Plating	0.3 to 1.0 µm Gold over 1.27 to 8.89 µm Nickel
Lid Plating	2.0 to 3.0 µm Nickel
Body	Al_2O_3 Ceramic
Pb Free	

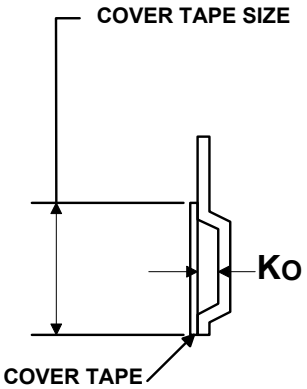
Electrical Connections	
Connection	Terminals
Input	2
Input Return	13
Output	9
Output Return	6
Ground	All Others

Recommended PCB Footprint



COMPONENT ORIENTATION and DIMENSIONS





Carrier Tape Dimensions		
Ao	4.55 mm	±0.1
Bo	12.04 mm	±0.1
Ko	2.13 mm	±0.1
Pitch	8.00 mm	±0.1
W	24.00 mm	±0.3