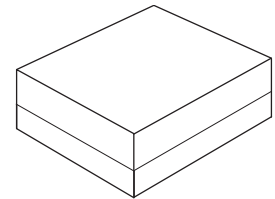


**SF2352K-1**

**403.5 MHz  
SAW Filter**



**SM1411-5**

- 403.5 MHz SAW RF Filter
- 3 MHz Bandwidth
- 1.4 x 1.1 mm Surface-mount Case
- Complies with Directive 2002/95/EC (RoHS)



#### Absolute Maximum Ratings

Rating	Value	Units
Maximum Incident Power in Passband	+17	dBm
Maximum DC Voltage On any Non-ground Terminal	3	VDC
Operating Temperature Range	+0 to +55	°C
Storage Temperature Range in Tape and Reel	-20 to +70	°C
Maximum Soldering Temperature Profile (5 cycles maximum)	265 °C for 10 s	

#### Electrical Characteristics

Characteristic		Sym	Notes	Min	Typ	Max	Units
Center Frequency at 25°C		f <sub>C</sub>		403.50			MHz
Insertion Loss, 402 to 405 MHz		IL		1.0	1.8	3.0	dB
Bandwidth p-1.5dB		BW		3.0	6.3		dB
Amplitude Ripple, 402 to 405 MHz		Δα			0.4	1.5	dB <sub>P-P</sub>
Input VSWR, 402 to 405 MHz					1.3	2.0	-
Output VSWR, 402 to 405 MHz					1.4	2.0	
Attenuation (relative to IL)		α <sub>rel</sub>					dB
0.3 to 339.5 MHz				38	49		
339.5 to 358.5 MHz				38	57		
358.5 to 383.5 MHz				37	50		
423.5 to 448.5 MHz				30	37		
448.5 to 467.5 MHz				35	63		
467.5 to 500 MHz				35	60		
500 to 700 MHz				33	56		
700 to 1000 MHz				33	47		
1000 to 1210 MHz				35	42		
1210 to 2500 MHz			25	30			
Case			1.4 x 1.1 x 0.59 mm, 5 Terminals				
Lid Symbolization, □ = week character, A-Z and a-z, 52 total characters			9				
Terminating Source Impedance: Single-Ended					50		Ω
Terminating Source Impedance: Single-Ended					200		Ω
Temperature Coefficient of Frequency					-36		ppm/°C



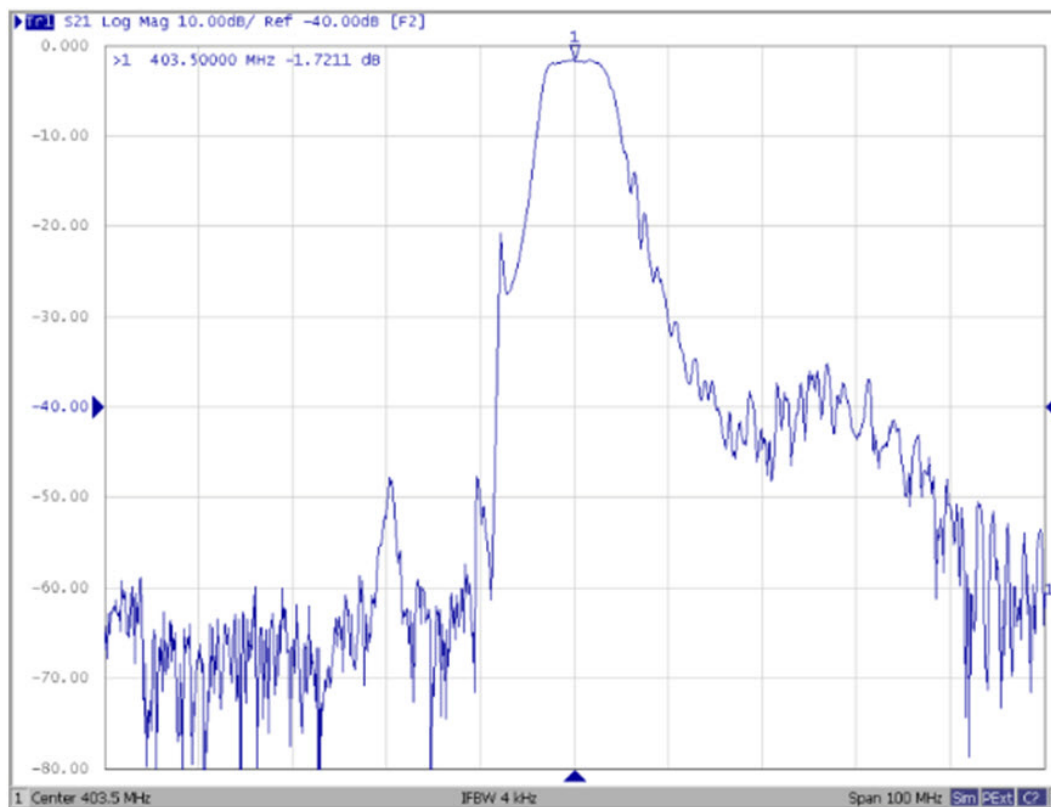
**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

#### NOTES:

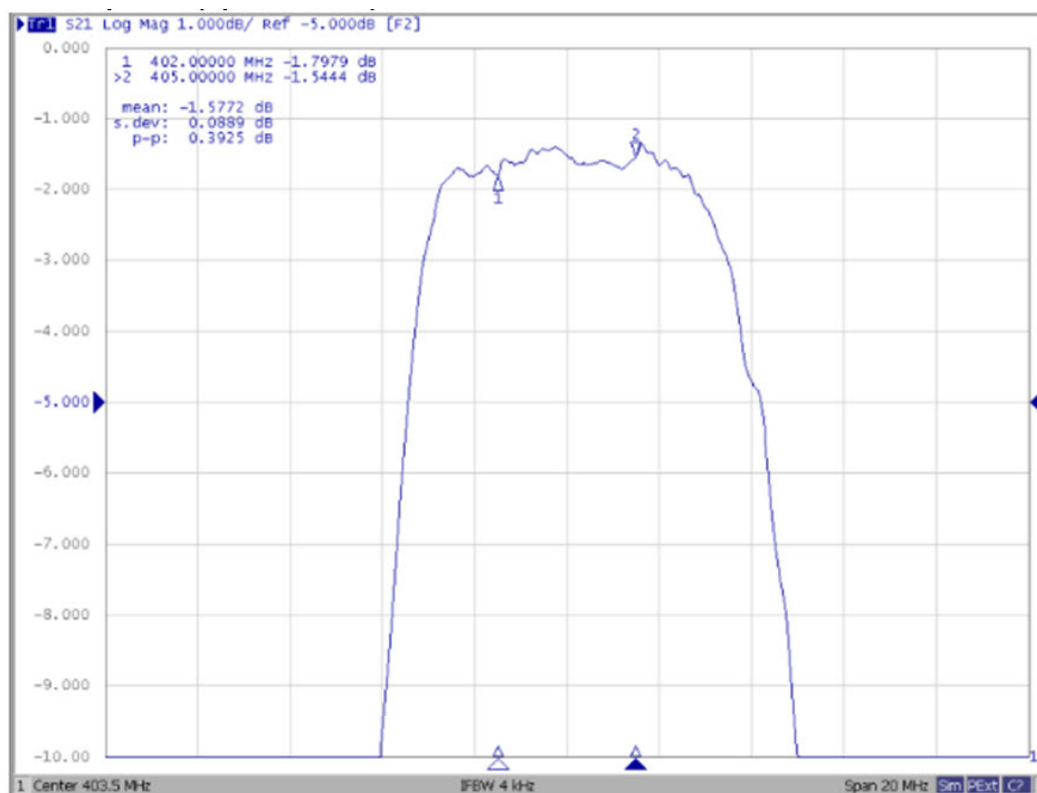
1. US and international patents may apply.
2. Murata, stylized Murata logo, and Murata N.A., Inc. are registered trademarks of Murata Manufacturing Co., Ltd.

## Frequency Response Plots

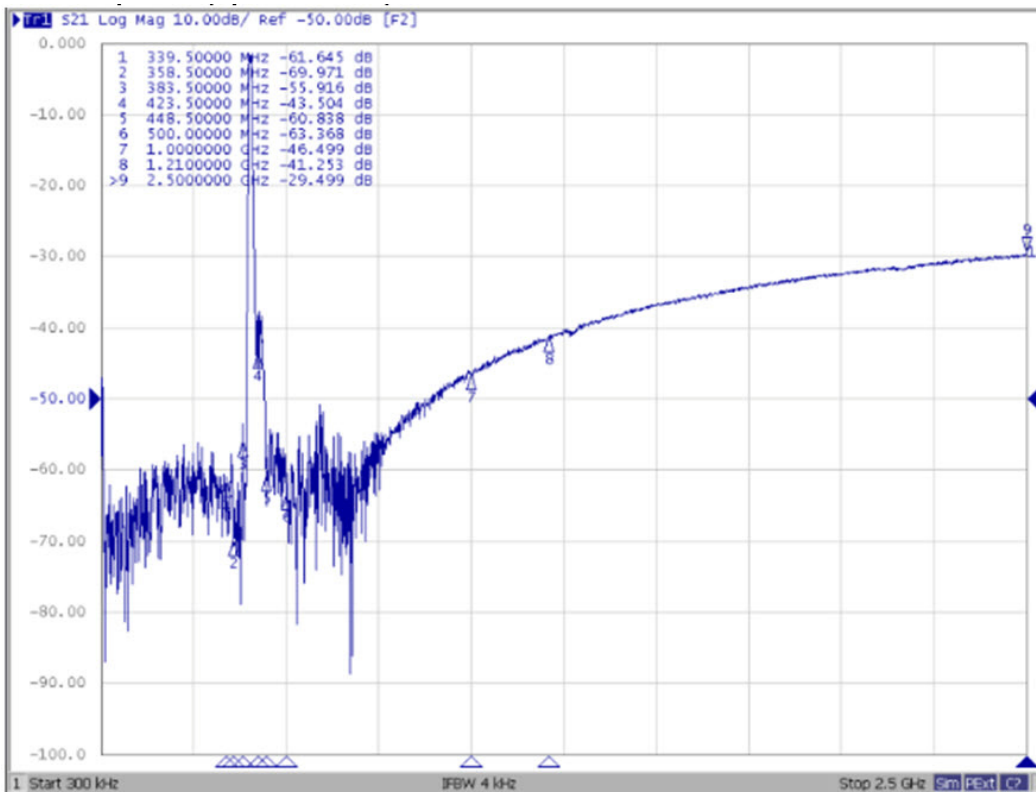
### S21 Response - span 100 MHz



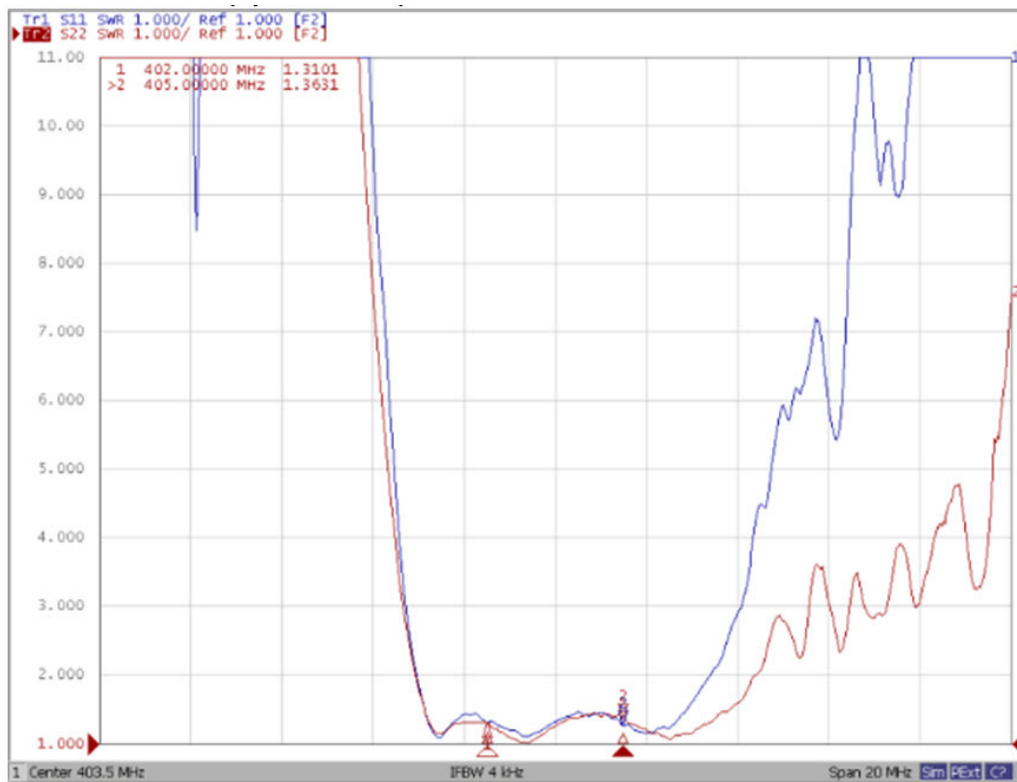
### S21 Response - span 20 MHz



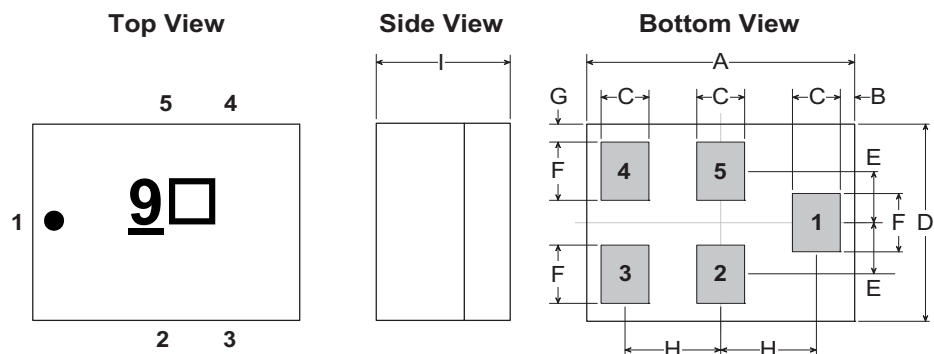
## S21 Response - span 2.5 GHz



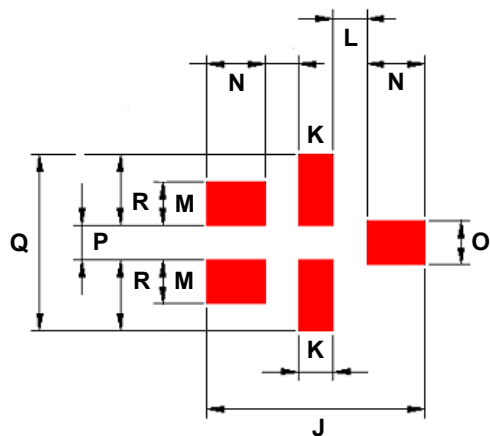
## S11 and S22 VSWR - span 20 MHz



# SM1411-51.4X 1.1 mm 5-Terminal Surface-mount Case Drawing



## PCB Footprint



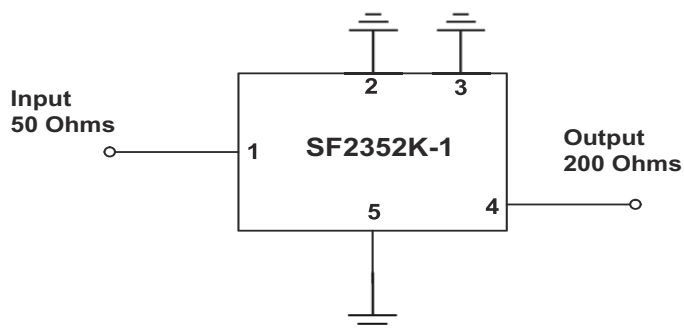
## Case and PCB Footprint Dimensions

Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	1.3500	1.4000	1.4500	0.0531	0.0551	0.0571
B	-	0.0750	-	-	0.0030	-
C	0.1700	0.250	0.3300	0.0067	0.0098	0.0130
D	1.0500	1.1000	1.1500	0.0413	0.0433	0.0453
E	-	0.2875	-	-	0.0113	-
F	0.2450	0.3250	0.4050	0.0096	0.0128	0.0159
G	-	0.100	-	-	0.0039	-
H	-	0.5000	-	-	0.0196	-
I	-	0.5900	0.650	-	0.0232	0.0255
J	-	1.6000	-	-	0.0629	-
K	-	0.2500	-	-	0.0138	-
L	-	0.2500	-	-	0.0098	-
M	-	0.3250	-	-	0.0127	-
N	-	0.4250	-	-	0.0167	-
O	-	0.3250	-	-	0.0394	-
P	-	0.2500	-	-	0.0098	-
Q	-	1.3000	-	-	0.0511	-
R	-	0.5250	-	-	0.0206	-

## Materials

Materials	
Solder Pad Plating	0.3 to 1.0 $\mu$ m Gold over 1.27 to 8.89 $\mu$ m Nickel
Lid Plating	Plastic molding
Body	Al <sub>2</sub> O <sub>3</sub> Ceramic
Pb Free	

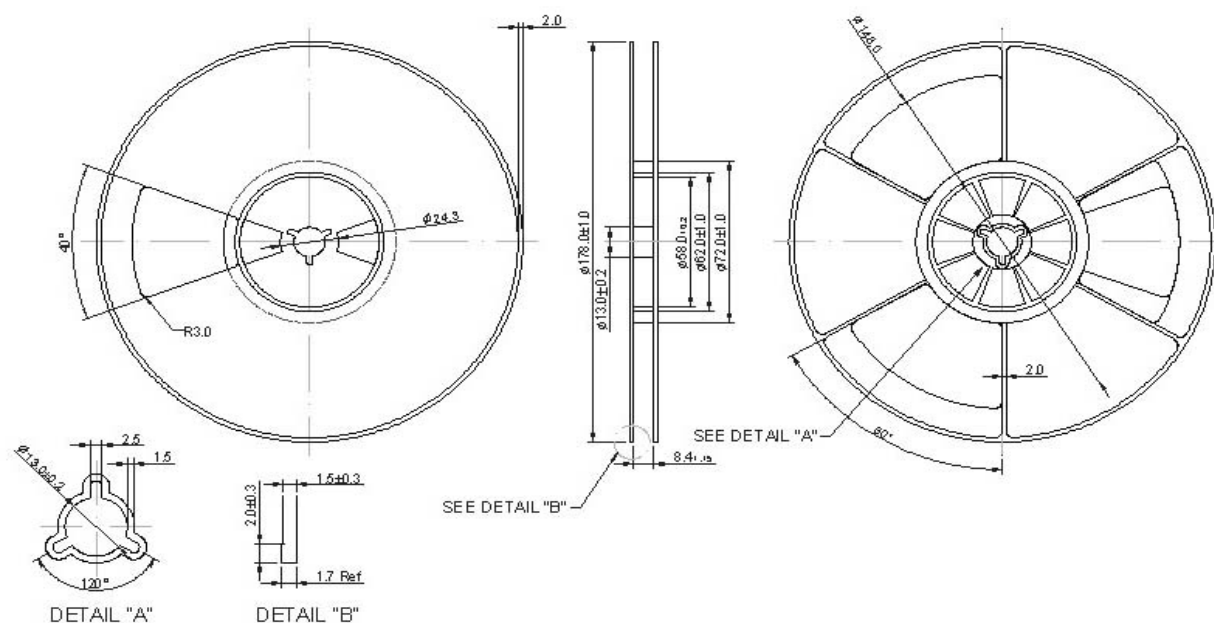
## Test Circuit



## Pin Description

Pin Description	
1	Input
4	Output
2, 3, 5	Ground

## Reel Dimensions - 7 inch Reel



## Tape Dimensions

