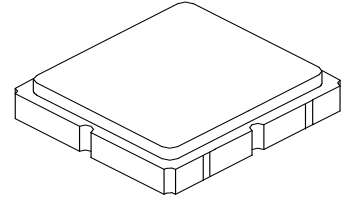


**SF2176E-1**

**433.92 MHz  
SAW Filter**



**SM3030-6**

- *Low-loss RF SAW Filter*
- *Surface-mount 3.0 x 3.0 x 1.3 mm Package*
- *Complies with Directive 2002/95/EC (RoHS)*
- *Moisture Sensitivity Level: 1*

**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
Operating Temperature Range	-40 to +85	°C
Solder Reflow Temperature, 10 seconds, 5 cycles maximum	260	°C

**Electrical Characteristics -40 to +85°C**

Characteristic	Sym	Notes	Min	Typ	Max	Units
Center Frequency	$F_C$			433.92		MHz
Maximum Insertion Loss, 433.12 to 434.72 MHz	$IL_{MAX}$			2.5	3.5	dB
Amplitude Ripple, 433.12 to 434.72 MHz				0.5	1.6	dB <sub>P-P</sub>
VSWR, 433.12 to 434.72 MHz				1.9	2.8	
Attenuation Referenced to 0 dB:						
10.00 to 380.00 MHz			55	61		dB
380.00 to 423.42MHz			30	38		
443.42 to 453.42 MHz			23	30		
453.42 to 460.00 MHz			35	44		
460.00 to 700.00 MHz			45	50		
700.00 to 1000.00 MHz			42	36		
Source Impedance	$Z_S$			50		$\Omega$
Load Impedance	$Z_L$			50		
Case Style	SM3030-6 3.0 x 3.0 mm Nominal Footprint					
Lid Symbolization (Y=year, WW=week, S=shift) dot=pin 1 indicator	8E, <u>YWWS</u>					
Standard Reel Quantity	Reel Size 7 Inch					500 Pieces/Reel
	Reel Size 13 Inch					3000 Pieces/Reel

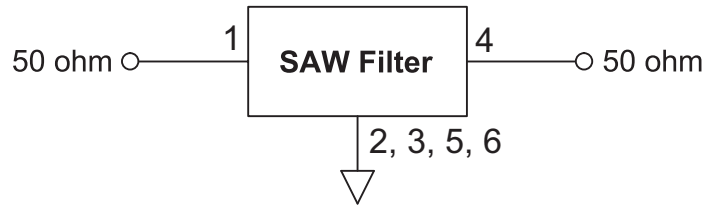
 **CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

**NOTES:**

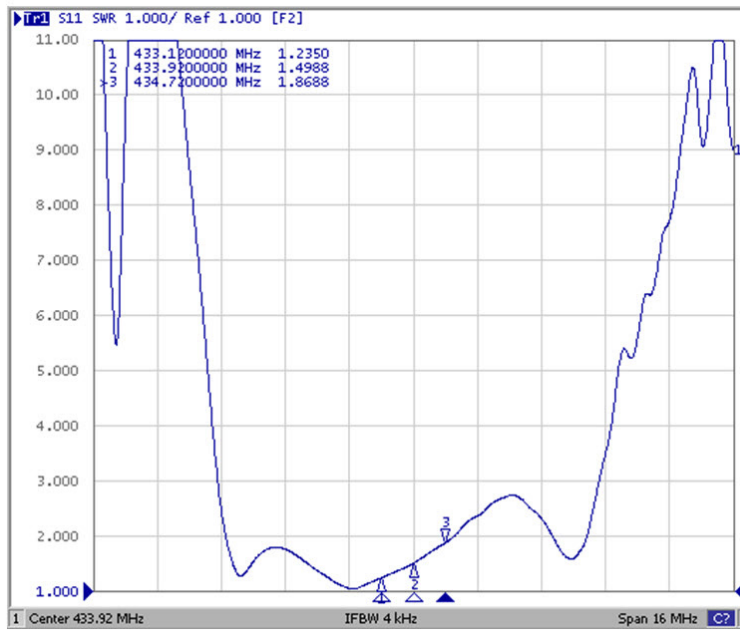
1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

# Filter Test Circuit

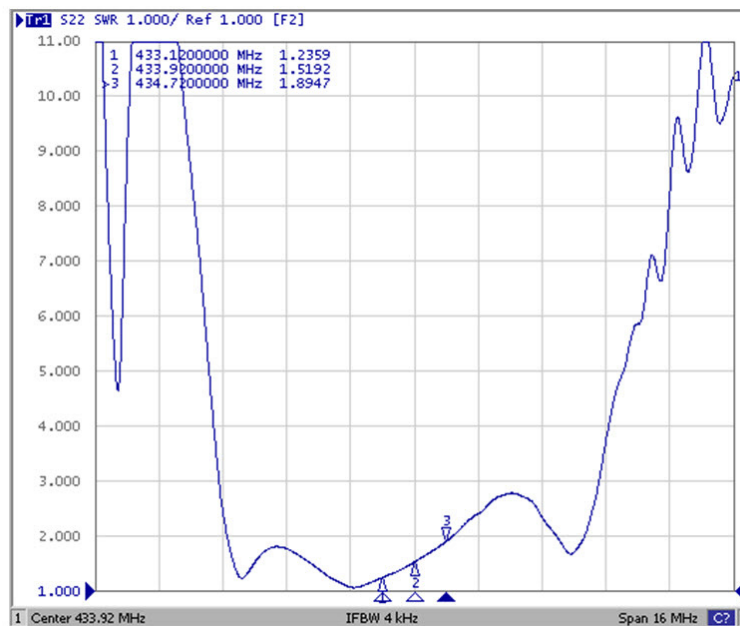
Connection	Terminals
Input	1
Output	4
Ground	All Others



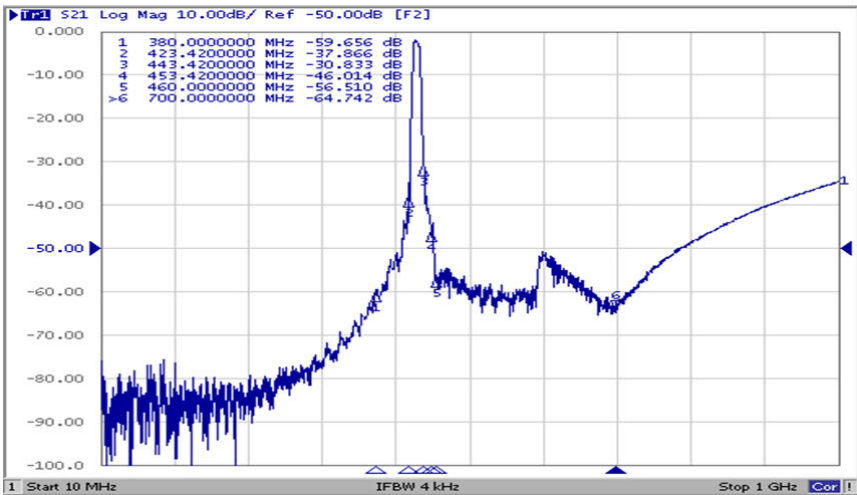
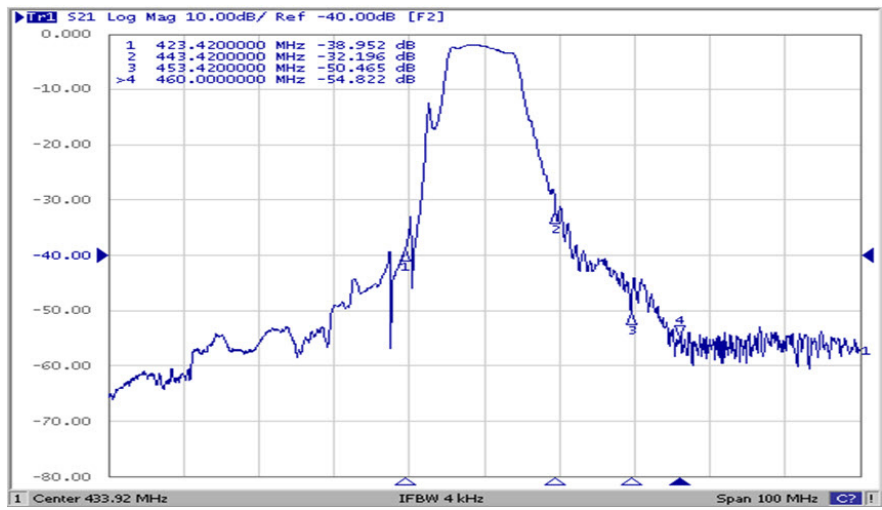
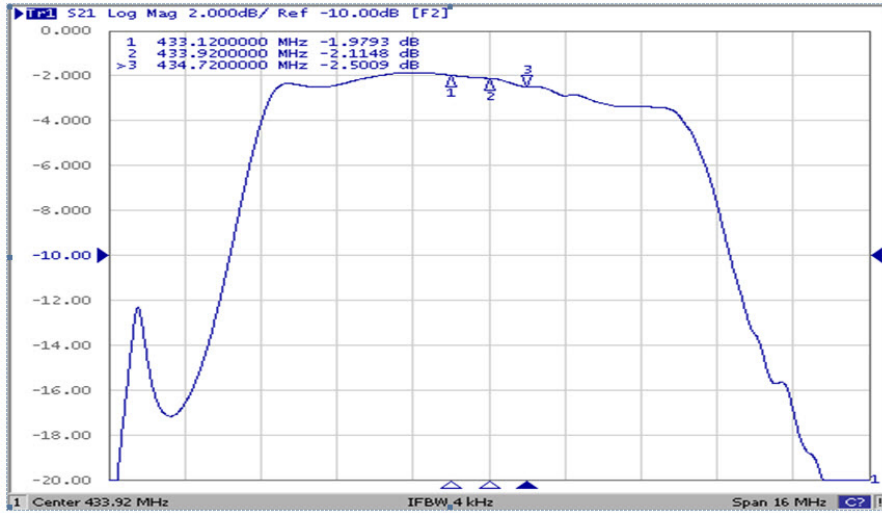
## Reflection Functions S11



## S22

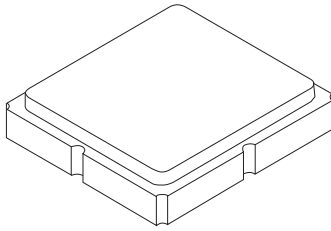


# Frequency Characteristics



# SM3030-6 Case

## 6-Terminal Ceramic Surface-Mount Case 3.0 X 3.0 mm Nominal Footprint



PCB Footprint Top View

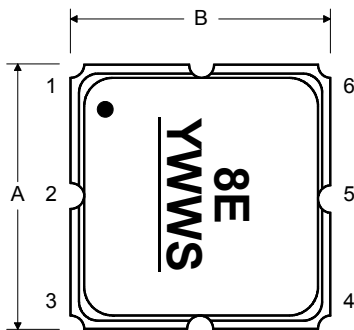
### Case and PCB Footprint Dimensions

Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	2.87	3.00	3.13	0.113	0.118	0.123
B	2.87	3.00	3.13	0.113	0.118	0.123
C	1.12	1.25	1.38	0.044	0.049	0.054
D	0.77	0.90	1.03	0.030	0.035	0.040
E	2.67	2.80	2.93	0.105	0.110	0.115
F	1.47	1.60	1.73	0.058	0.063	0.068
G	0.72	0.85	0.98	0.028	0.033	0.038
H	1.37	1.50	1.63	0.054	0.059	0.064
I	0.47	0.60	0.73	0.019	0.024	0.029
J	1.17	1.30	1.43	0.046	0.051	0.056
K		3.20			0.126	
L		1.70			0.067	
M		1.05			0.041	
N		0.81			0.032	
O		0.38			0.015	

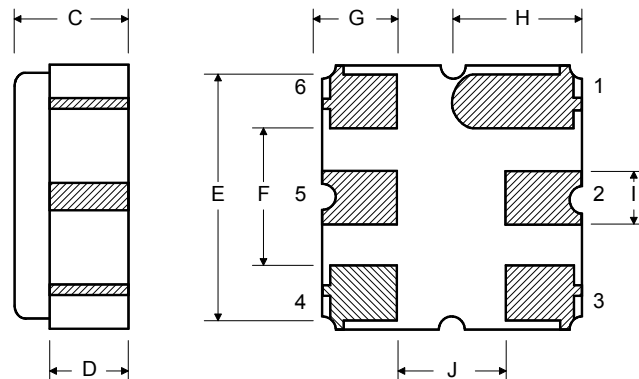
### Case Materials

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

### TOP VIEW

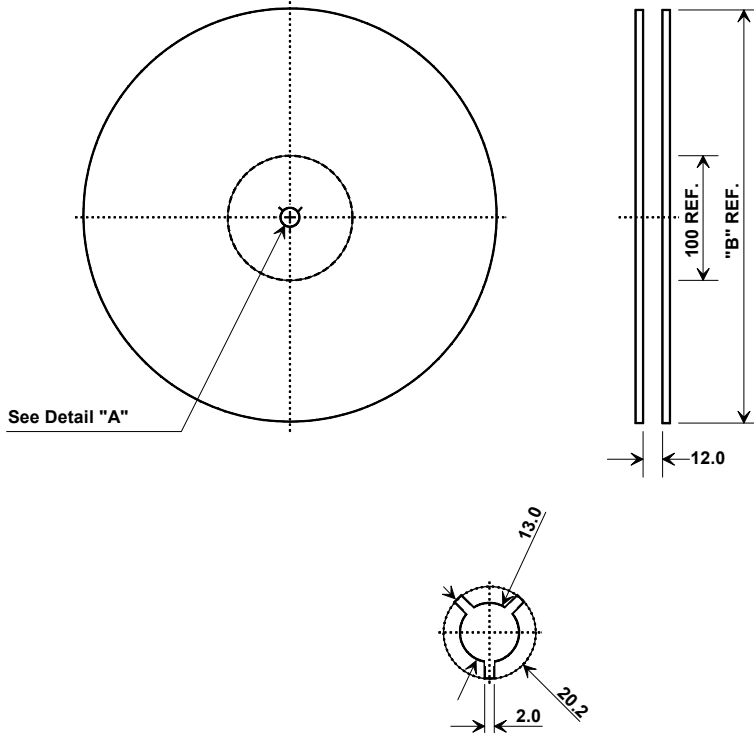


### BOTTOM VIEW



## Tape and Reel Specifications

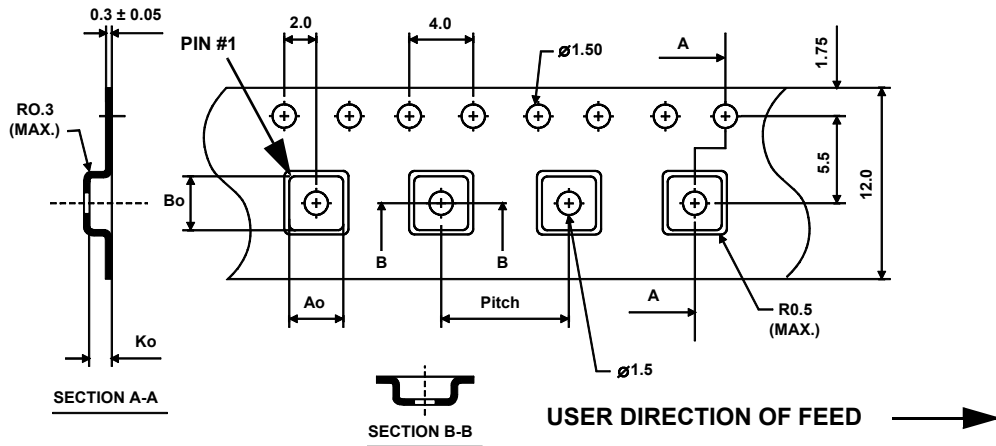
Tape and Reel Standard per ANSI/EIA-481



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

### COMPONENT ORIENTATION and DIMENSIONS

Carrier Tape Dimensions	
Ao	3.35 mm
Bo	3.35 mm
Ko	1.40 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.

