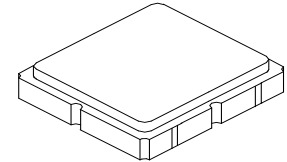


**RF3709E**

**433.92 MHz  
SAW Filter**



**SM3030-6**

- **Low-loss RF SAW Filter**
- **3 x 3 mm Surface-mount Package**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Moisture Sensitivity Level: 1**
- **AEC-Q200 Qualified**

**Absolute Maximum Ratings**

Rating	Value	Units
Input Power Level	+13	dBm
DC Voltage on any Non-ground Terminal	±0	V
Operating Temperature Range	-40 to +105	°C
Usable Operating Temperature	-40 to +125	°C
Storage Temperature Range in Tape and Reel	-40 to +105	°C
Source Impedance (Tuned)	$Z_S=50$	$\Omega$
Load Impedance (Tuned)	$Z_L=50$	$\Omega$

**Electrical Characteristics**

Characteristic (reference temperature 25°C)	Sym	Notes	Min	Typ	Max	Units
Center Frequency	$f_C$			433.92		MHz
Minimum Insertion Loss $\alpha$ minimum	$\alpha_{min}$					dB
Incl. Loss in Matching Elements		433.385 to 434.455 MHz		2.2	2.9	
Excl. Loss in Matching Elements		433.385 to 434.455 MHz		1.4	2.1	
Pass Band (Relative to $\alpha$ min)						
		433.385 to 434.455 MHz		1.1	2.5	
		433.27 to 434.57 MHz		1.3	3.0	
Relative Attenuation (Relative to $\alpha$ min)						dB
10 to 280 MHz			60	65		
280 to 367 MHz			50	55		
367 to 420 MHz			40	45		
420 to 428 MHz			29	34		
428 to 429 MHz			20	25		
429 to 432.050 MHz			12	14		
436.5 to 438.5 MHz			8	13		
438.5 to 448 MHz			19	24		
448 to 462 MHz			31	36		
462 to 500 MHz			38	43		
500 to 550 MHz			48	53		
550 to 1750 MHz			55	60		
1750 to 2500 MHz			48	53		
Input: $Z_{IN}=Ls1/Cp1$				75/9.0		nH/pF
Output: $Z_{OUT}=Ls2/Cp2$				75/6		

Case Style	SM3030-6 3.0 x 3.0 mm Nominal Footprint
Lid Symbolization (Y=year, WW=week, S=shift) dot=pin 1 indicator	B27, <u>Y</u> WWS

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

**NOTES:**

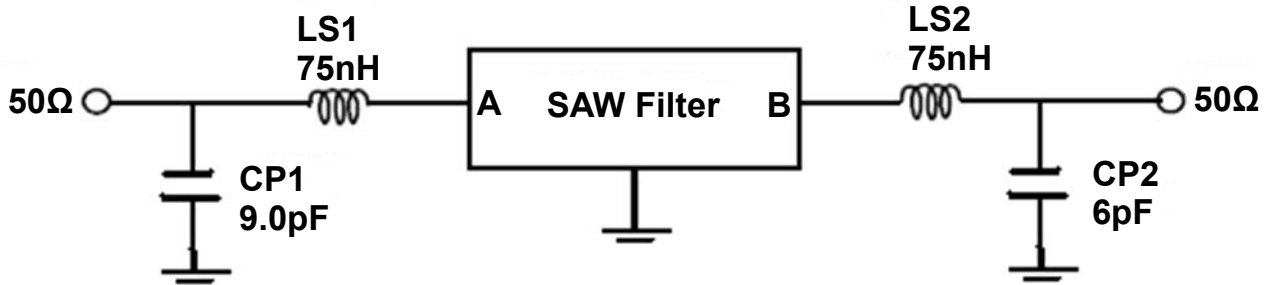
1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

**Electrical Connections - Recommended**

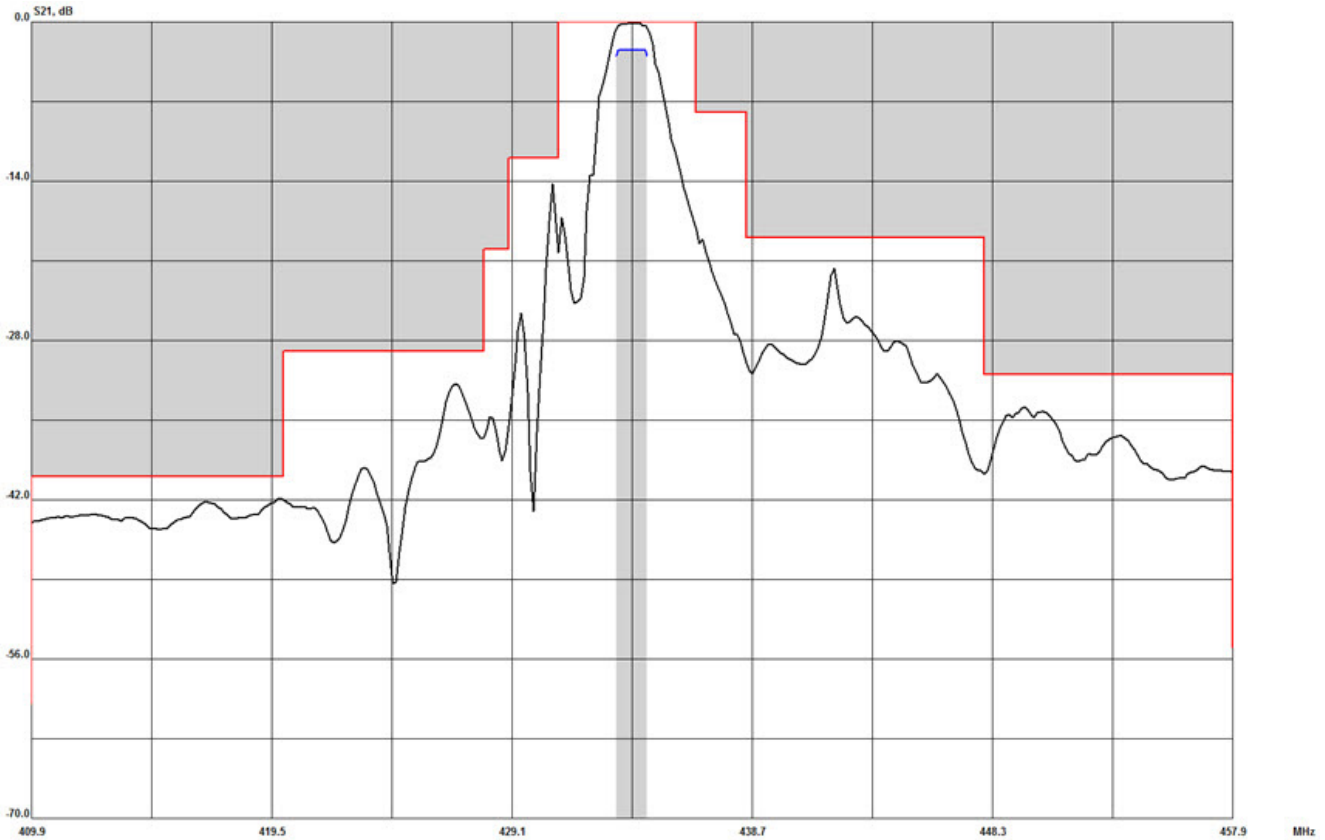
Connection	Terminals
Input (A)	1
Output (B)	4
Ground	2, 3, 5, 6

**Electrical Connections - Alternative**

Connection	Terminals
Input (A)	2
Output (B)	5
Case Ground	1, 3, 4, 6

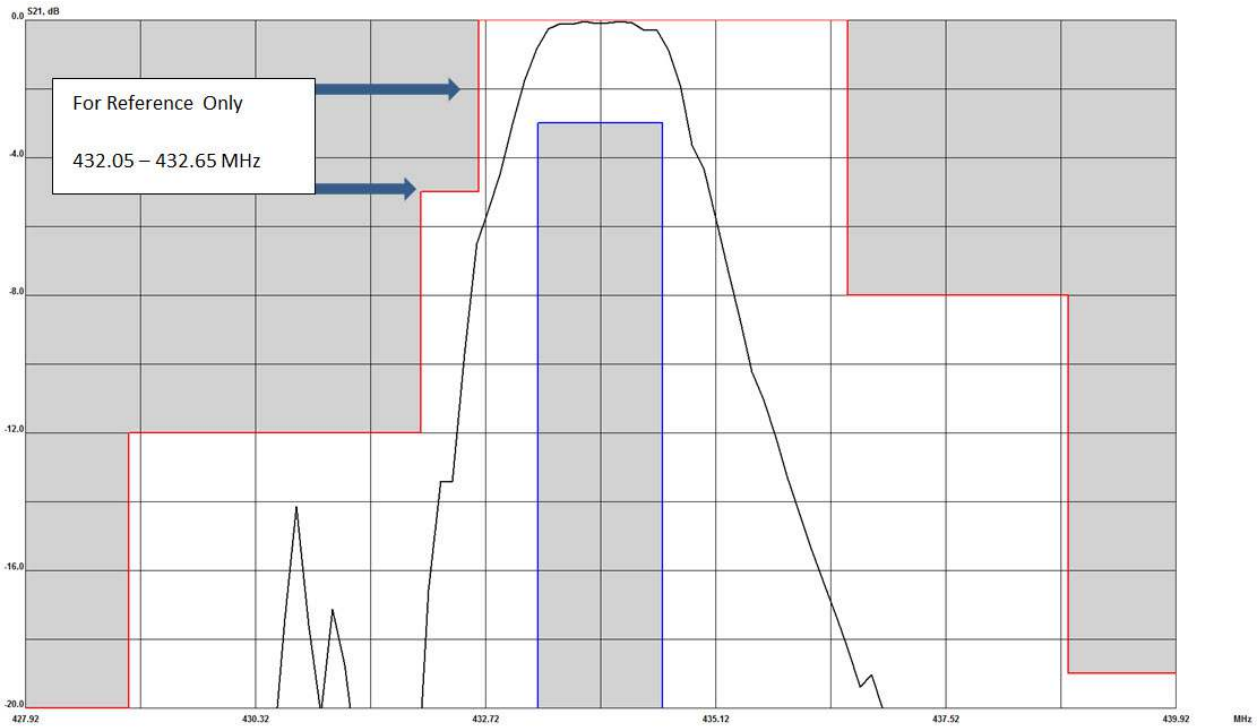


**RF3709E Frequency Characteristics**  
**S21 Response: span 50MHz**

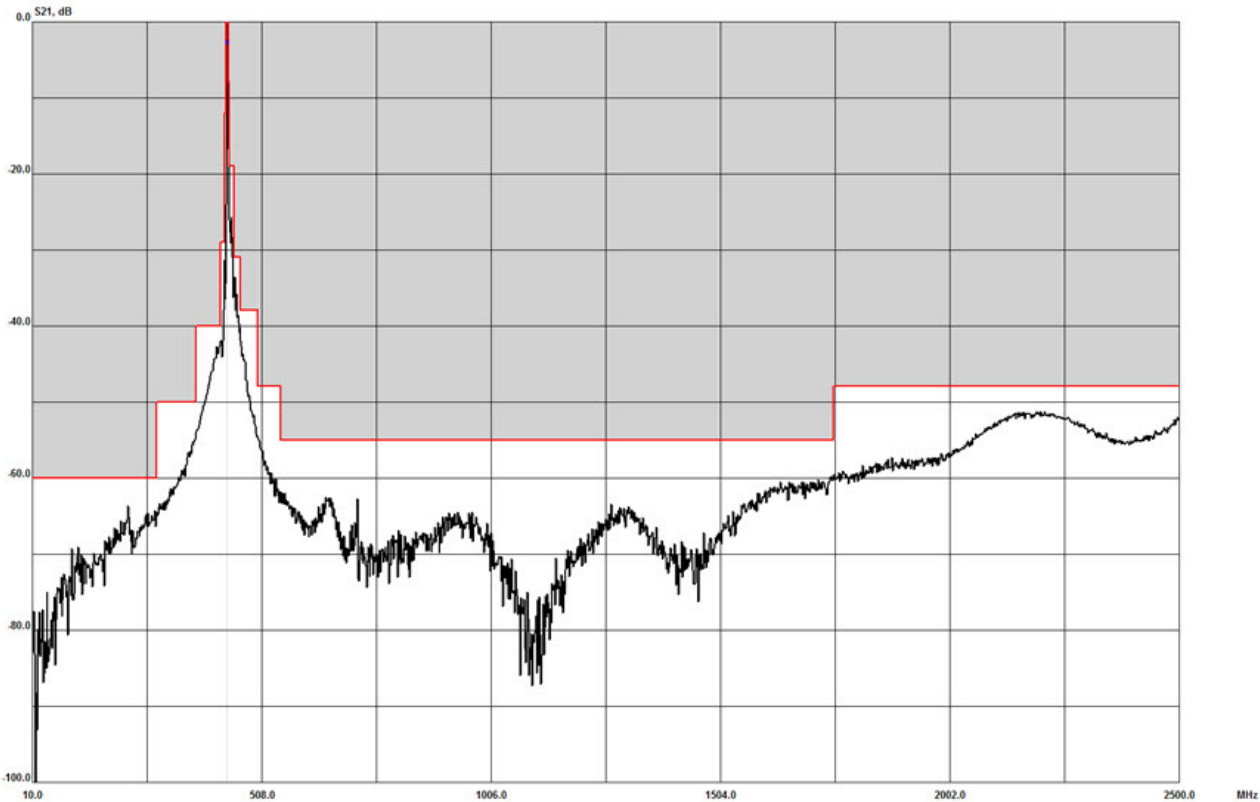


# RF3709E Frequency Characteristics (continued)

## S21 Response: span 12 MHz



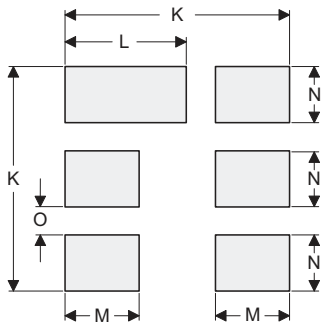
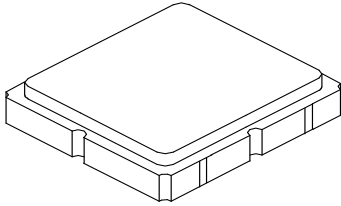
## S21 Response: span 10 MHz to 2.5G MHz



# SM3030-6 Case

## 6-Terminal Ceramic Surface-Mount Case

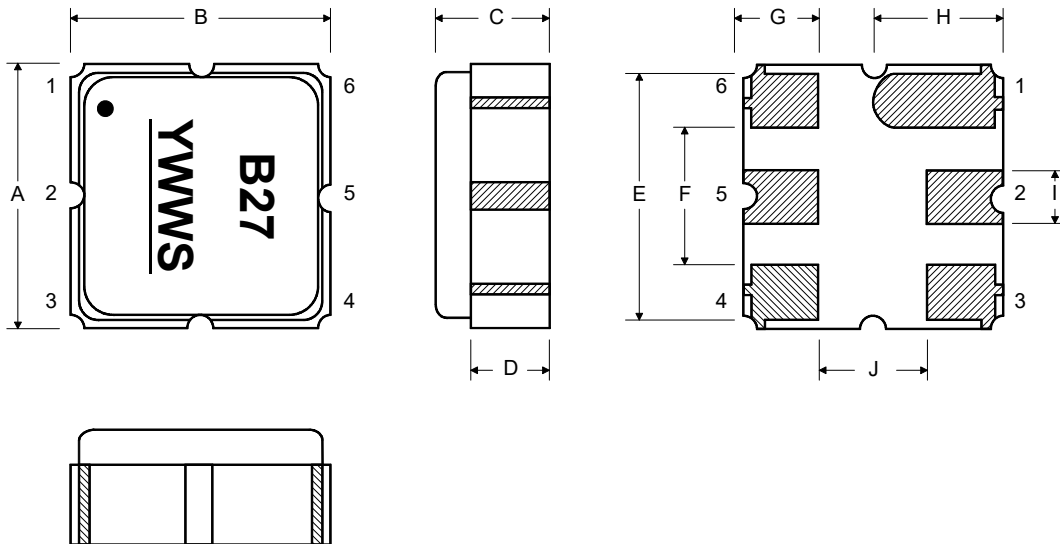
### 3.0 X 3.0 mm Nominal Footprint



PCB Land Pattern  
Top View

TOP VIEW

BOTTOM VIEW



Case and PCB Footprint Dimensions

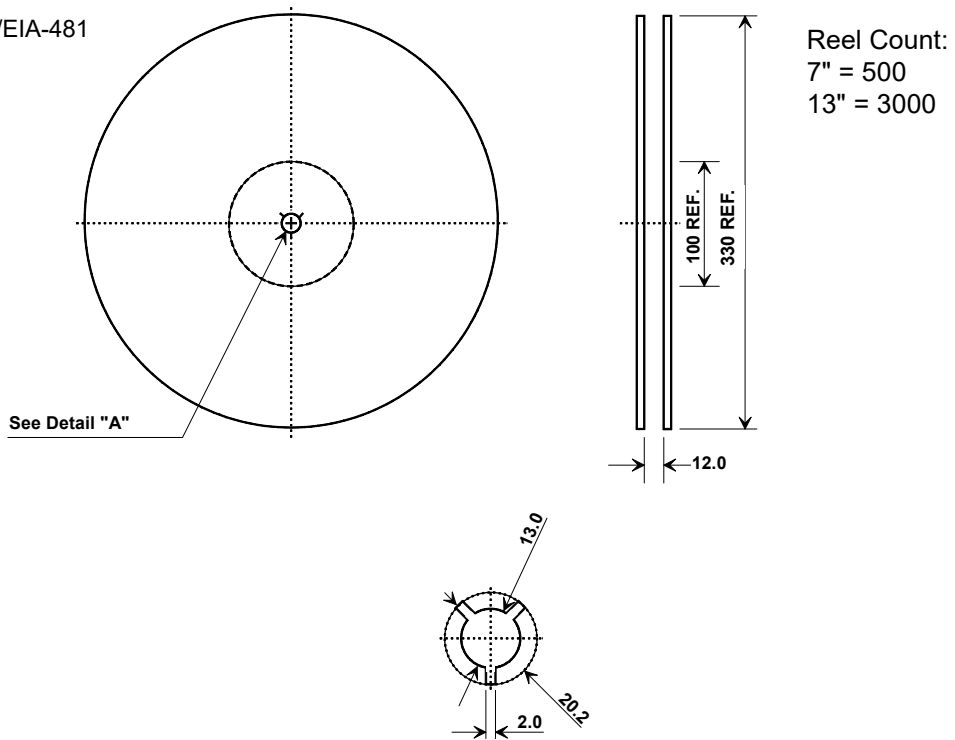
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	2.87	3.00	3.13	0.113	0.118	0.123
B	2.87	3.00	3.13	0.113	0.118	0.123
C	1.12	1.25	1.38	0.044	0.049	0.054
D	0.77	0.90	1.03	0.030	0.035	0.040
E	2.67	2.80	2.93	0.105	0.110	0.115
F	1.47	1.60	1.73	0.058	0.063	0.068
G	0.72	0.85	0.98	0.028	0.033	0.038
H	1.37	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

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

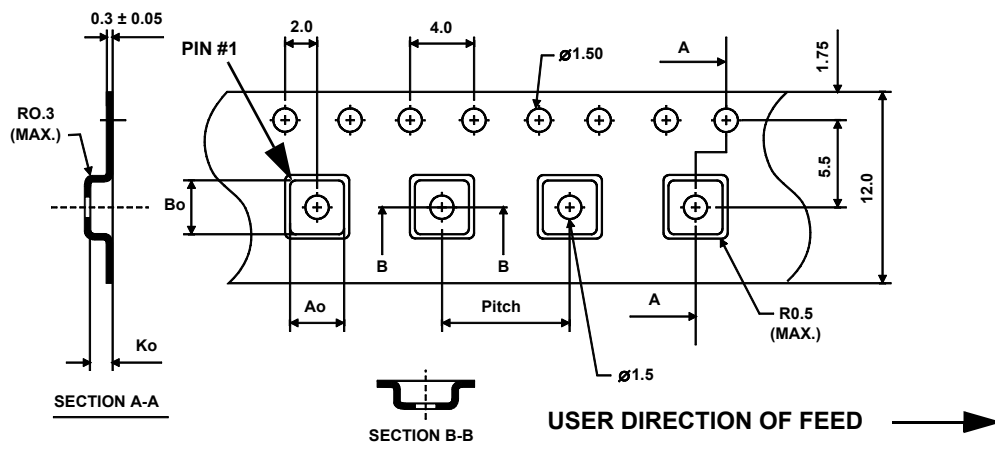
# Tape and Reel Specifications

Tape and Reel Standard per ANSI/EIA-481



## COMPONENT ORIENTATION and DIMENSIONS

Carrier Tape Dimensions	
Ao	4.25 mm
Bo	4.25 mm
Ko	1.30 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.

