

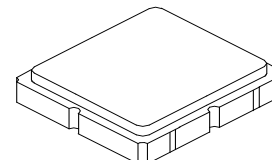
- **Low-loss RF SAW Filter**
- **3 x 3 mm Surface-mount Package**

## 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)	$Z_L=50$	$\Omega$

**RF3709E**

**433.92 MHz  
SAW Filter**



**SM3030-6**

## 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



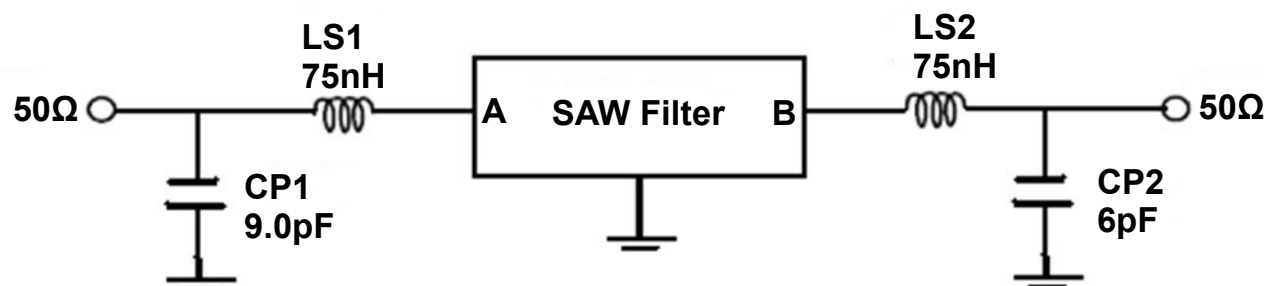
**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

### NOTES:

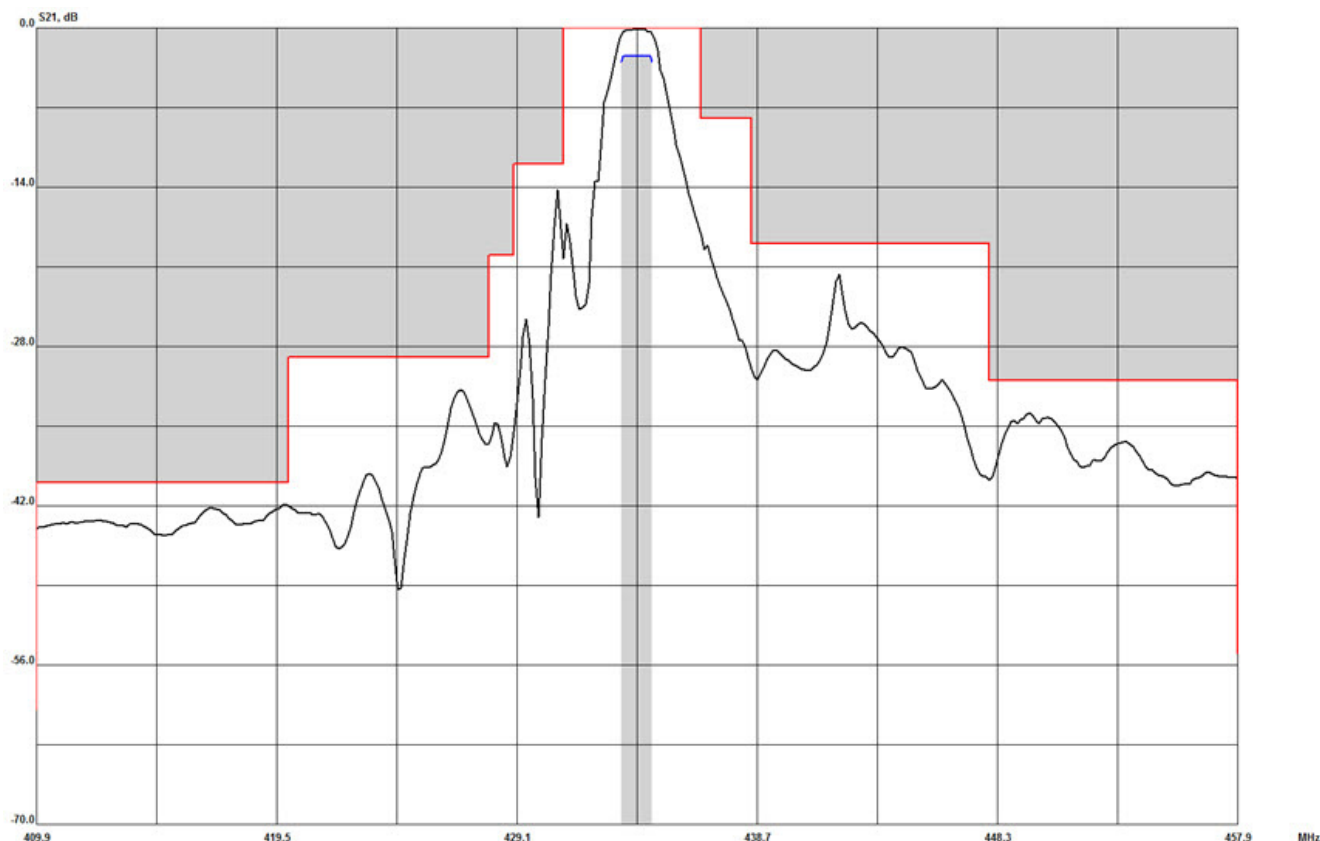
1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to the specified demonstration board with impedance matching to 50  $\Omega$  and measured with 50  $\Omega$  network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency,  $f_C$ .
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 design, manufacturing process, and specifications of this filter are subject to change.
5. US and international patents may apply.
6. Murata, stylized Murata logo, and Murata N.A., Inc. are registered trademarks of Murata Manufacturing Co., Ltd.

## Electrical Connections - Recommended Alternative

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



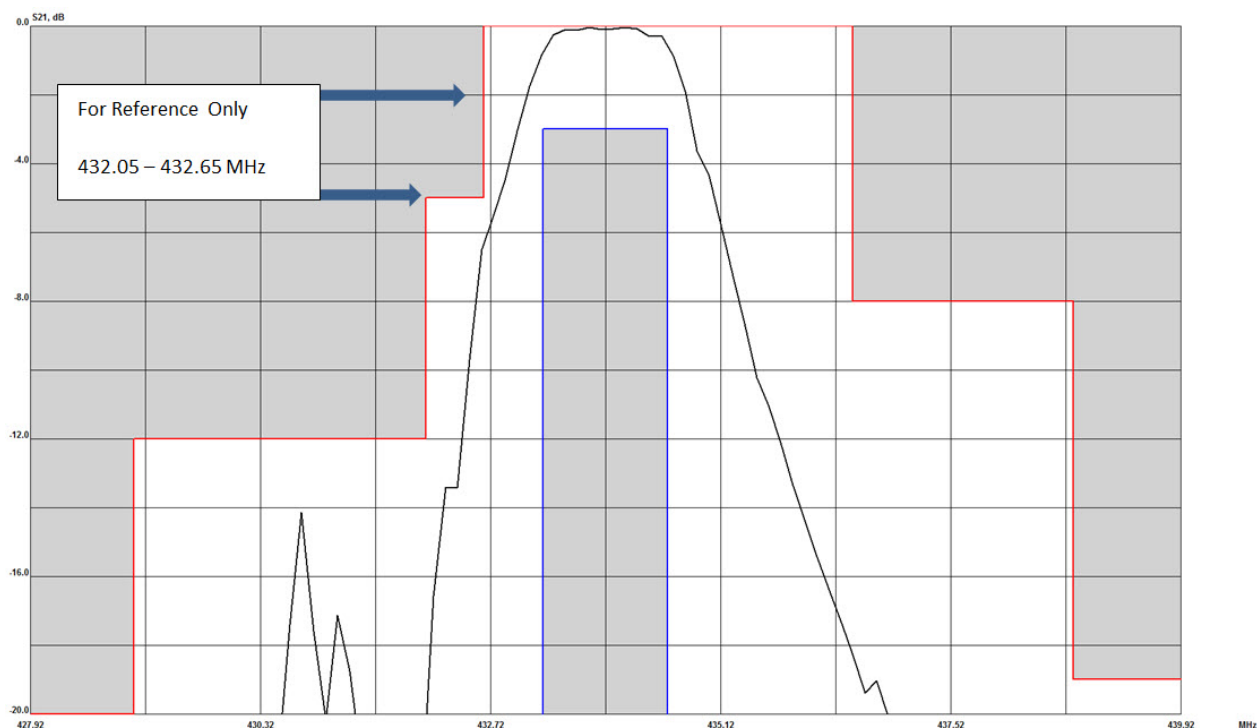
## RF3709E Frequency Characteristics S21 Response: span 50MHz



# Discontinued

## RF3709E Frequency Characteristics (continued)

### S21 Response: span 12 MHz



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

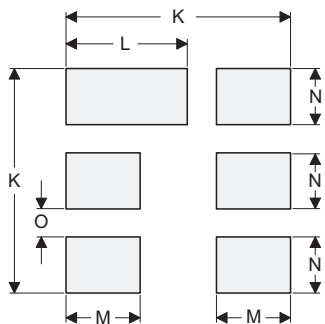
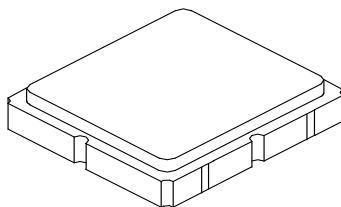


# SM3030-6 Case

# Discontinued

## 6-Terminal Ceramic Surface-Mount Case

### 3.0 X 3.0 mm Nominal Footprint



PCB Land Pattern  
Top View

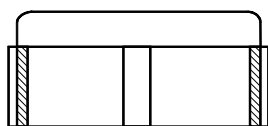
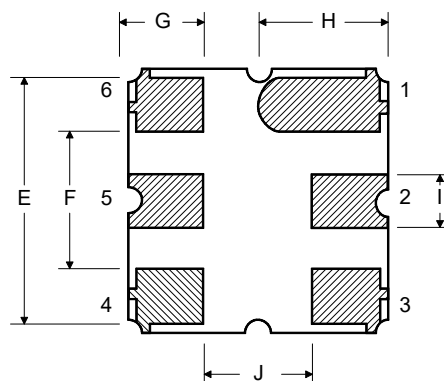
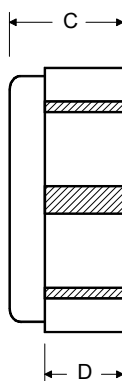
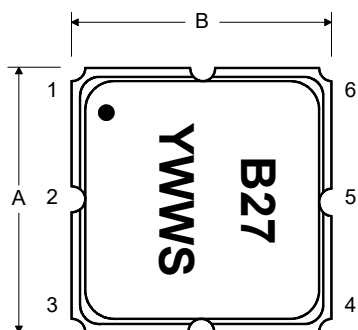
TOP VIEW

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	
Solder Pad Plating	0.3 to 1.0 $\mu$ m Gold over 1.27 to 8.89 $\mu$ m Nickel
Lid Plating	2.0 to 3.0 $\mu$ m Nickel
Body	Al <sub>2</sub> O <sub>3</sub> Ceramic
Pb Free	

BOTTOM VIEW





0.3 ± 0.05

RO.3 (MAX.)

PIN #1

2.0

4.0

Ø1.50

A

1.75

5.5

12.0

Bo

Ao

Pitch

B

B

A

Ø1.5

R0.5 (MAX.)

SECTION A-A

SECTION B-B

USER DIRECTION OF FEED