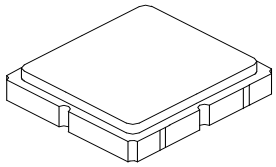
AEC-Q200

RoHS Compliance
This component is compliant with RoHS directive.
This component was always RoHS compliant from the first date of manufacture.

RF3709E

433.92 MHz SAW Filter

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



SM3030-6

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	Ω
Load Impedance (Tuned)	$Z_{L=}$50	Ω

Electrical Characteristics

Characteristic (reference temperature 25°C)		Sym	Notes	Min	Typ	Max	Units
Center Frequency		f_C			433.92		MHz
Minimum Insertion Loss α minimum		α_{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 α 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 α 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, YWWS

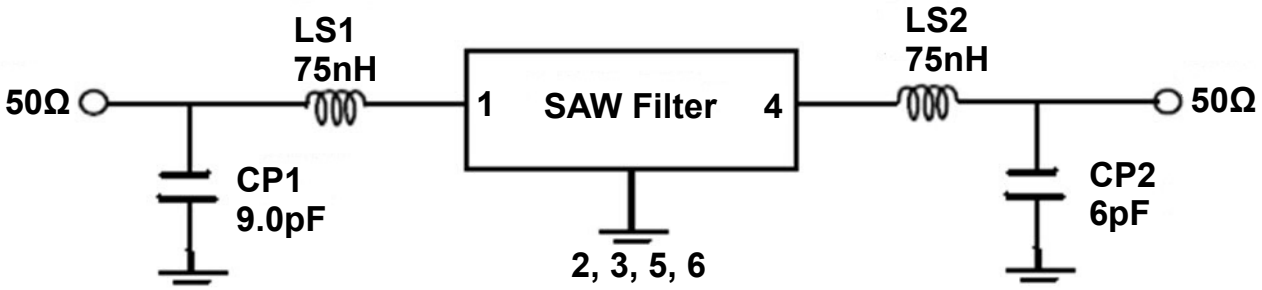
CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

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 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.

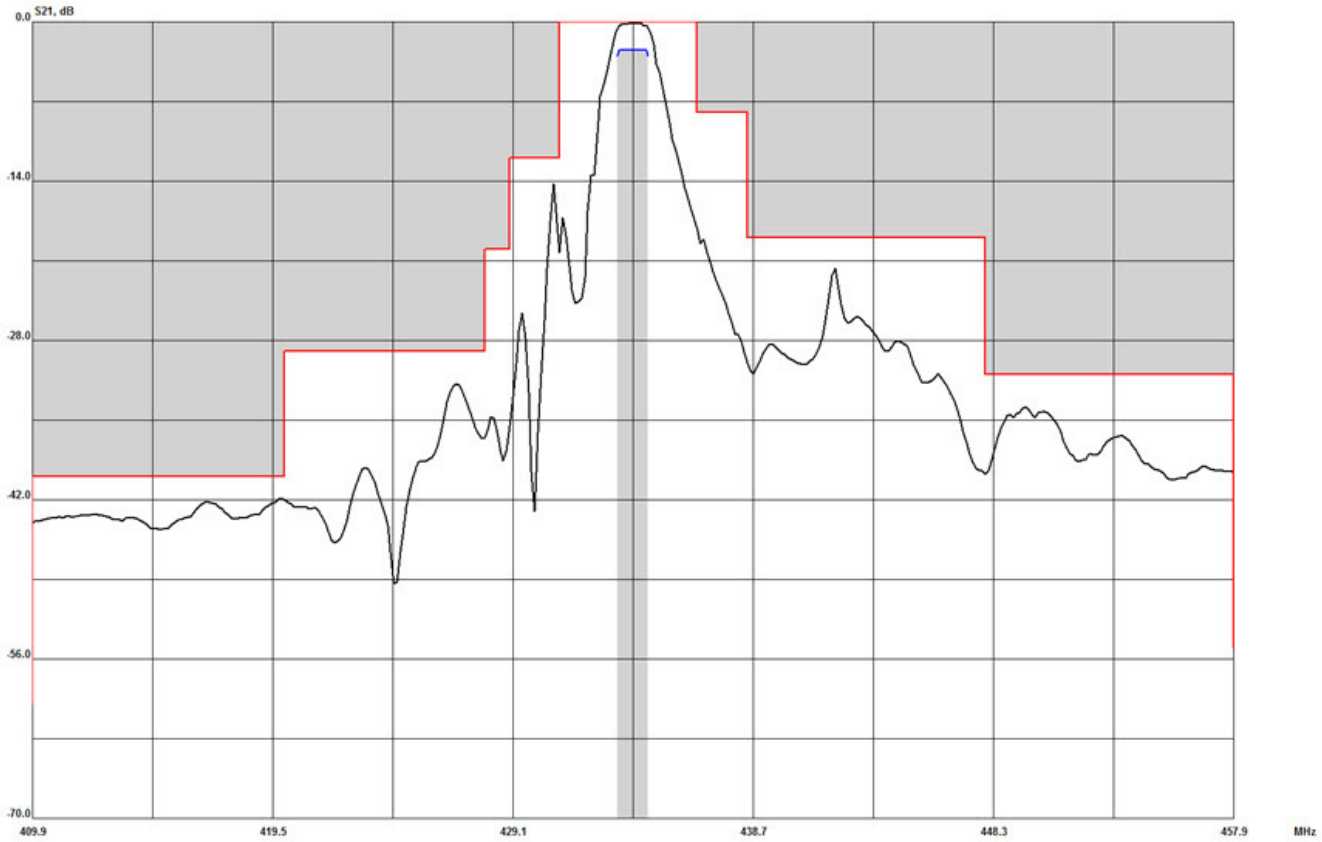
Electrical Connections

Connection	Terminals
Input	1
Output	4
Case Ground	2, 3, 5, 6



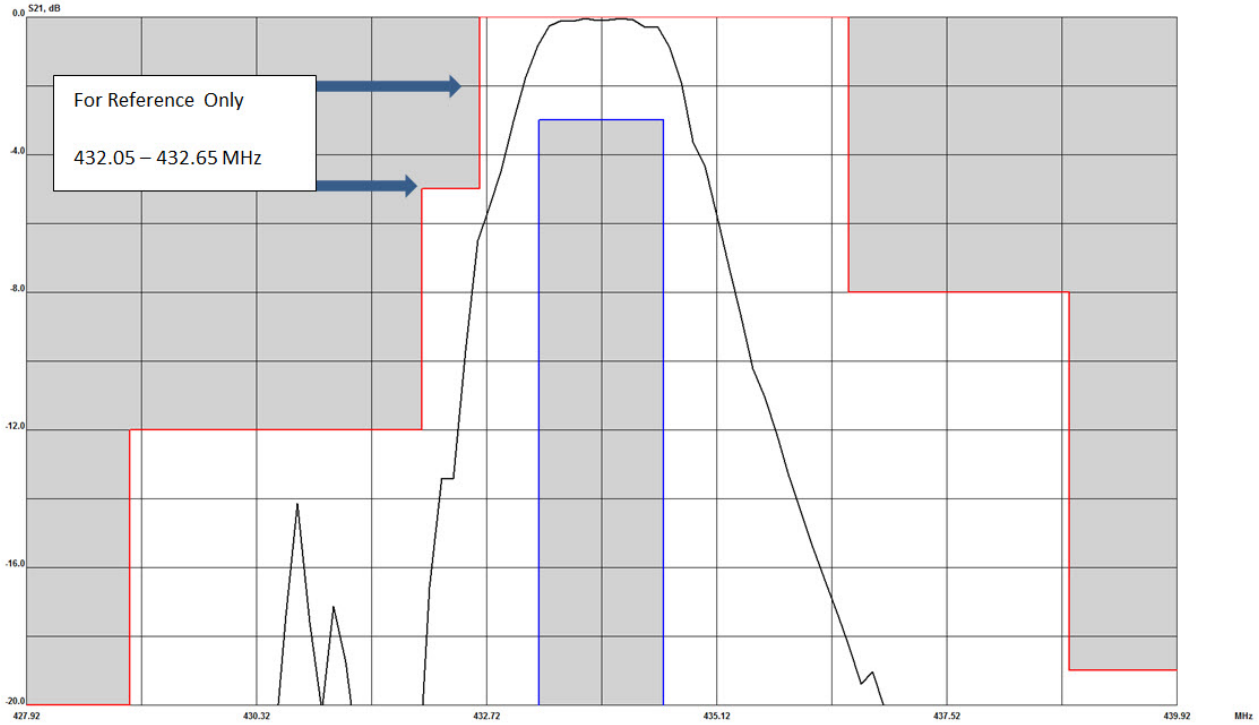
RF3709E Frequency Characteristics

S21 Response: span 50MHz

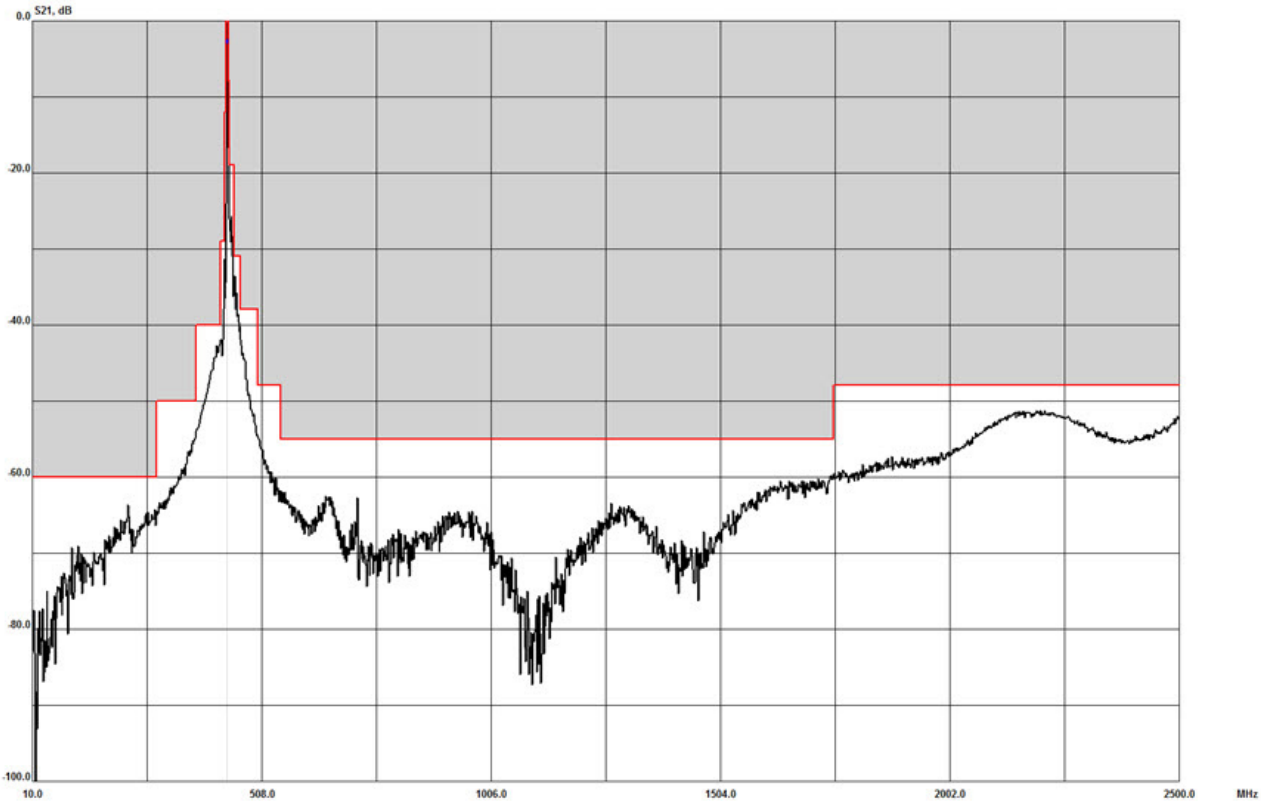


RF3709E Frequency Characteristics (continued)

S21 Response: span 12 MHz



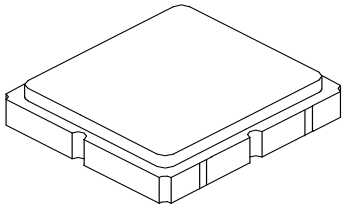
S21 Response: span 10 MHz to 2.5G MHz

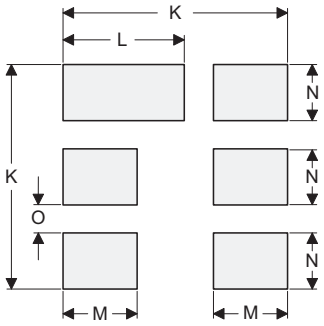


SM3030-6 Case

6-Terminal Ceramic Surface-Mount Case

3.0 X 3.0 mm Nominal Footprint





PCB Land Pattern
Top View

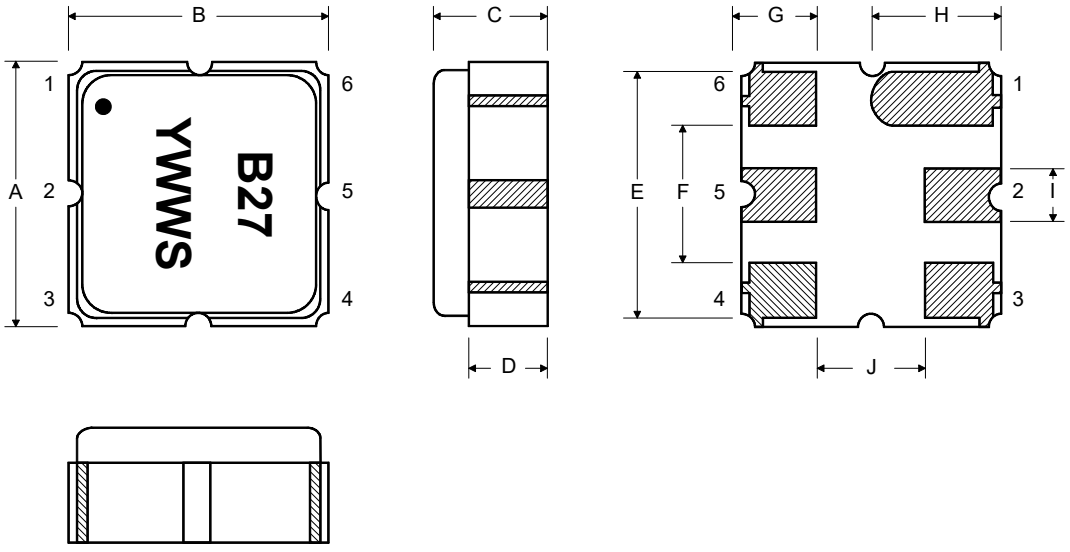
Case and PCB Footprint Dimensions

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	

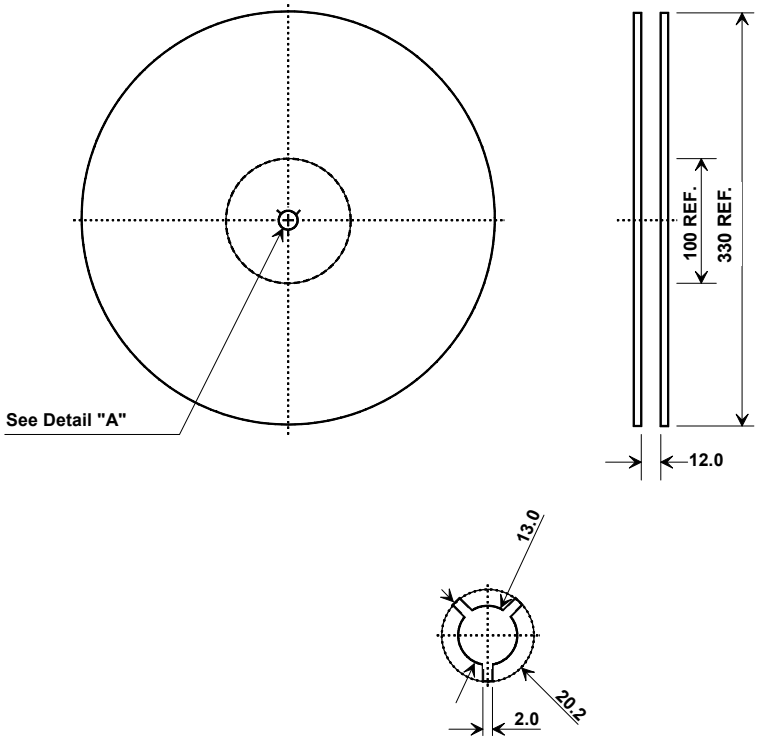
Case Materials	
Solder Pad Plating	0.3 to 1.0 µm Gold over 1.27 to 8.89 µm Nickel
Lid Plating	2.0 to 3.0 µm Nickel
Body	Al_2O_3 Ceramic
Pb Free	

TOP VIEW

BOTTOM VIEW



Tape and Reel Specifications



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