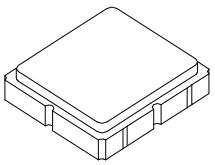
PRELIMINARY

RFM products are now Murata products.

SF2161E-1

2650 MHz SAW Filter

- Low Insertion Loss SAW RF Filter
- No Matching Circuit Required
- 3.0 x 3.0 x 1.3 mm Surface-Mount Case
- Complies with Directive 2002/95/EC (RoHS)



SM3030-6

Absolute Maximum Ratings

Rating	Value	Units
Input Power Level	+15	dBm
DC Voltage on any Non-ground Terminal	6	Volts
Operating Temperture Range	-40 to +85	°C
Storage Temperature Range in Tape and Reel	-40 to +85	°C
Maximum Soldering Profile, 5 Cycles/10 seconds Maximum	265	°C

Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units
Center Frequency	f_C	1		2650		MHz
Insertion Loss	IL				3.5	MHz
Amplitude Ripple						
2610 to 2690 MHz					2.2	
2615 to 2655 MHz					1.5	dB
2635 to 2675 MHZ					1.5	
2650 to 2690 MHZ					1.5	
Group Delay Ripple					30	ns
Attenuation Referenced to 0 dB:						
DC to 2242 MHz			25			
2242 to 2322 MHz			30			
2322 to 2400 MHz			25			
2400 to 2483.5 MHz			20			
2483.5 to 2533 MHZ			10			
2533 to 2543 MHz			7			dB
2543 to 2568 MHz			5			
2737 to 3800 MHz			20			
3800 to 5176 MHz			13			
5716 to 5850 MHz			8			
5850 to 8500 MHz			3			
Temperature Coefficient of Frequency				-36		ppm/°C
VSWR, 2610 to 2690 MHz					2.3:1	MHz
Source Impedance	Z_S			50		Ω
Load Impedance	Z_L			50		Ω

Single-Ended Input / Output Impedance Match	No matching network required for operation at 50 ohms
Case Style	SM3030-6 3 x 3 mm Nominal Footprint
Lid Symbolization, Y=year, WW=week, S=shift	A95 YWWS

CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

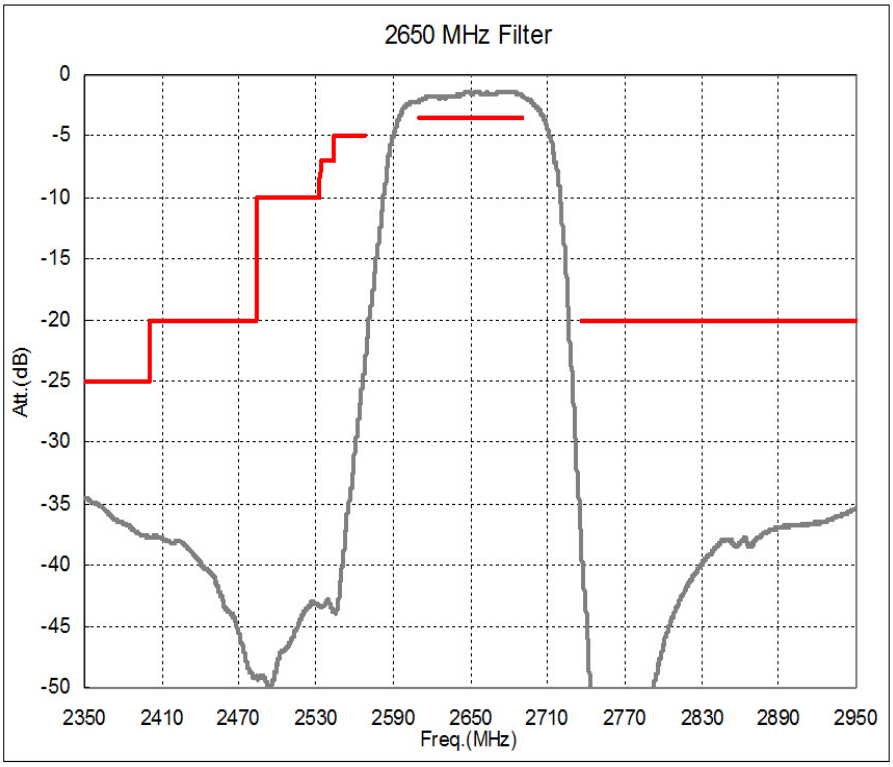
NOTES:

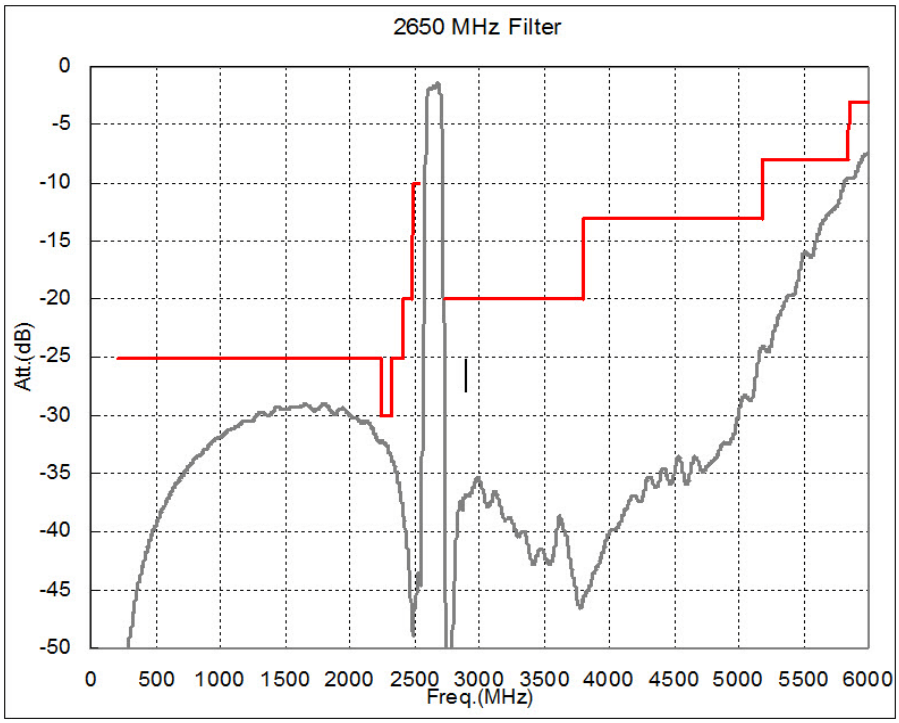
1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to the specified demonstration board with impedance matching to 50 Ω and measured with 50 Ω network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal 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. "LRIP" or "L" after the part number indicates "low rate initial production" and "ENG" or "E" indicates "engineering parts."
5. The design, manufacturing process, and specifications of this filter are subject to change.
6. Either Port 1 or Port 2 may be used for either input or output in the design. However, impedances and impedance matching may vary between Port 1 and Port 2, so that the filter must always be installed in one direction per the circuit design.
7. US and international patents may apply.
8. Murata, stylized Murata logo, and Murata N.A., Inc. are registered trademarks of Murata Manufacturing Co., Ltd.

Electrical Connections

Connection	Terminals
Input	2
Output	5
Ground	All others

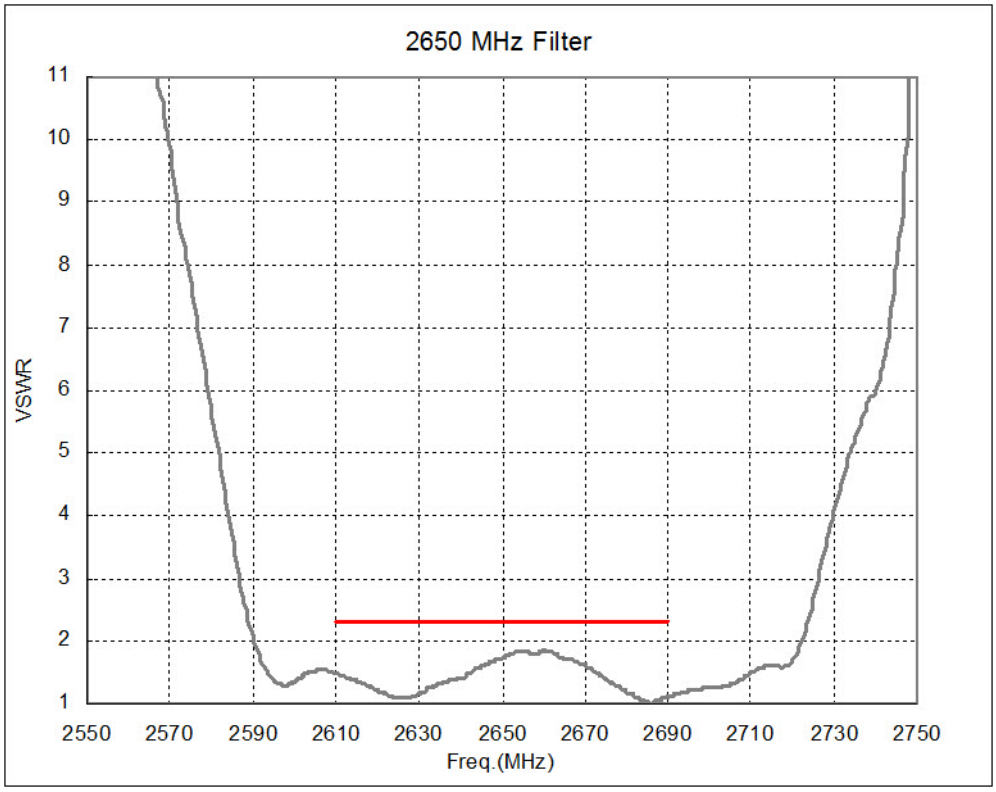
Frequency Characteristics: (Simulations)



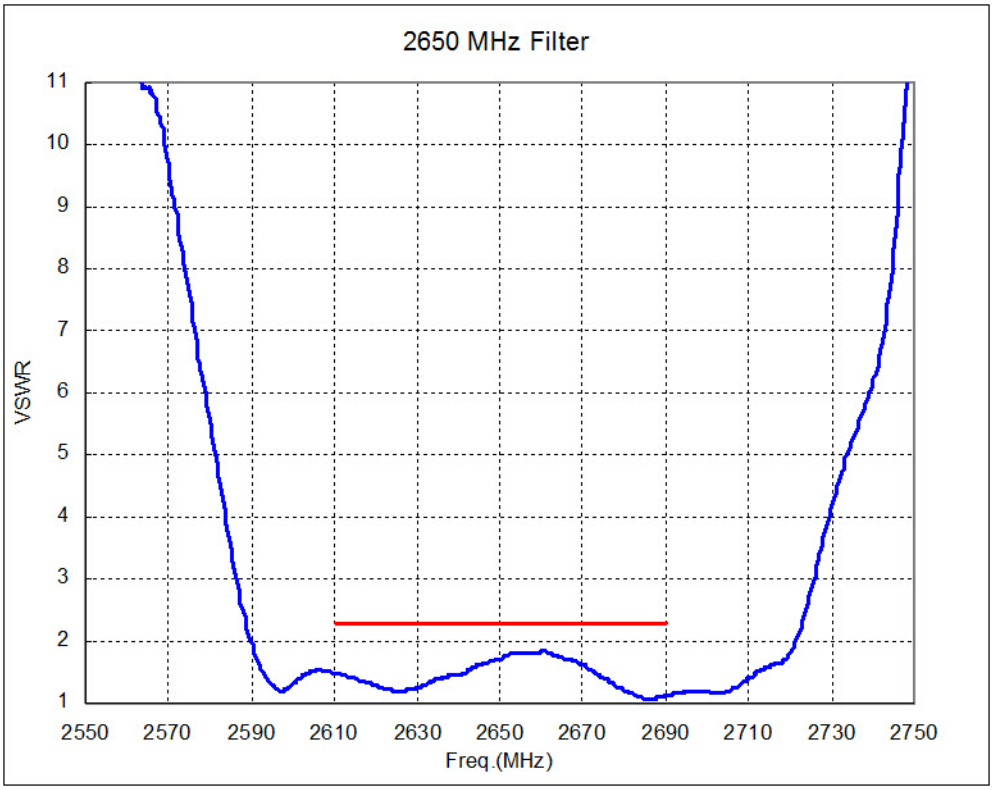


Reflection Functions

S11

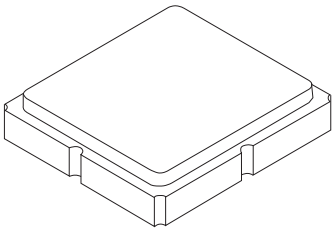


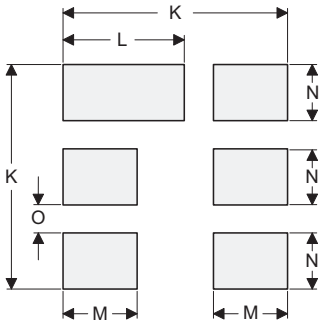
S22



SM3030-6 Case

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





PCB Footprint Top View

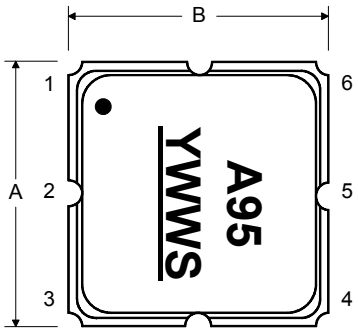
Case and PCB Footprint Dimensions

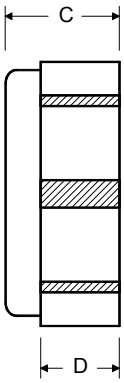
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	2.87	3.00	3.13	0.113	0.118	0.123
B	2.87	3.00	3.13	0.113	0.118	0.123
C	1.12	1.25	1.40	0.044	0.049	0.055
D	0.77	0.90	1.03	0.030	0.035	0.040
E	2.67	2.80	2.93	0.105	0.110	0.115
F	1.47	1.60	1.73	0.058	0.063	0.068
G	0.72	0.85	0.98	0.028	0.033	0.038
H	1.37	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

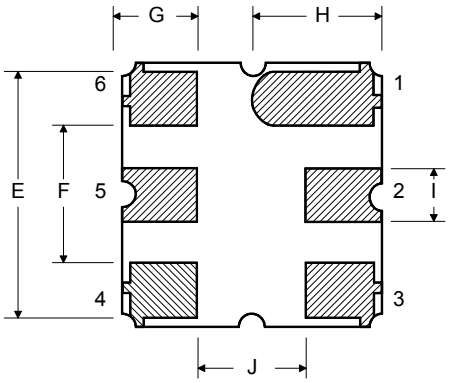
Materials	
Solder Pad Plating	0.3 to 1.0 µm Gold over 1.27 to 8.89 µm Nickel
Lid Plating	2.0 to 3.0 µm Nickel
Body	Al_2O_3 Ceramic
Pb Free	

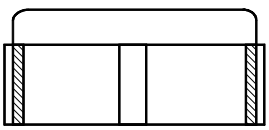
Top View



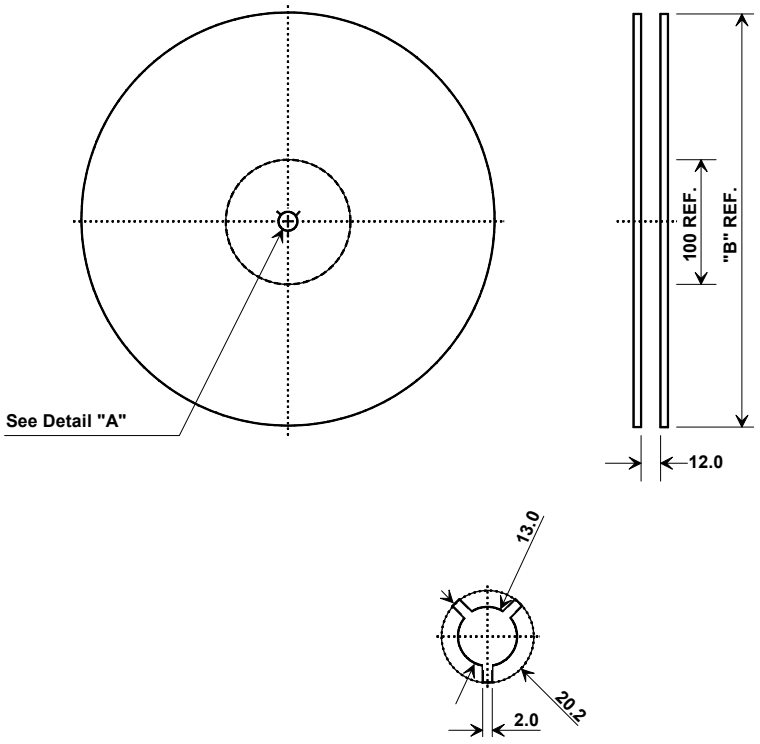


Bottom View





Tape and Reel Specifications



"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