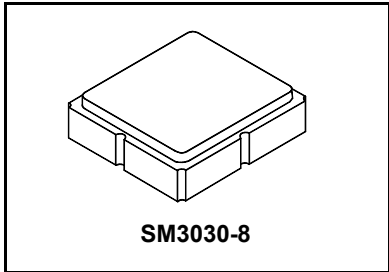



**SF2165E**

**1586.36 MHz  
SAW Filter**



- SAW Filter for Digital Television
- Complies with Directive 2002/95/EC (RoHS) 

**Characteristics:**

Differential Source and Load Configuration  
Terminating Source/Load Impedance :  $Z_S = 150 \Omega$

**Maximum Rating**

Rating	Value	Units
Input Power Level	10	dBm
DC Voltage on any Non-ground Terminal	3	V
Operating Temperature Range	-40 to +85	°C
Storage Temperature Range	-50 to +95	°C
Suitable for Lead-free Soldering - Maximum Soldering Profile	260 °C for 30 s	

**Electrical Characteristics**

Characteristic	Sym	Notes	Min	Typ	Max	Units
Center Frequency	$f_c$			1586.36		MHz
Insertion Loss, 1566.36 to 1606.36 MHz	IL			1.8	4.5	dB
Amplitude Ripple, 1566.36 to 1606.36 MHz		1		1.0	2.0	dB
Phase Error, 1566.36 to 1606.36 MHz		1		3.5	6.0	deg
Input/Output VSWR, 1566.36 to 1606.36 MHz				1.5:1	2.5:1	
2 dB Bandwidth			40	59		MHz
Attenuation, Referenced to 0 dB						
50 to 1504.3 MHz			46	58		dB
1668.42 to 1810.5 MHz			46	60		
1810.5 to 4250 MHz			35	60		
4250 to 6000 MHz			30	38		

Case Style	SM3030-8 3.0 x 3.0 mm Nominal Footprint					
Lid Symbolization (Y=year, WW=week, S=shift) dot=pin 1 indicator	861, YWWS					
Standard Reel Quantity	Reel Size 7 Inch					500 Pieces/Reel
	Reel Size 13 Inch					3000 Pieces/Reel

**Electrical Connections**

	Connection	Terminals
Port 1	Balanced Input	1,2
Port 2	Balanced Output	5,6
	Ground	All Others

Dot Indicates Pin 1

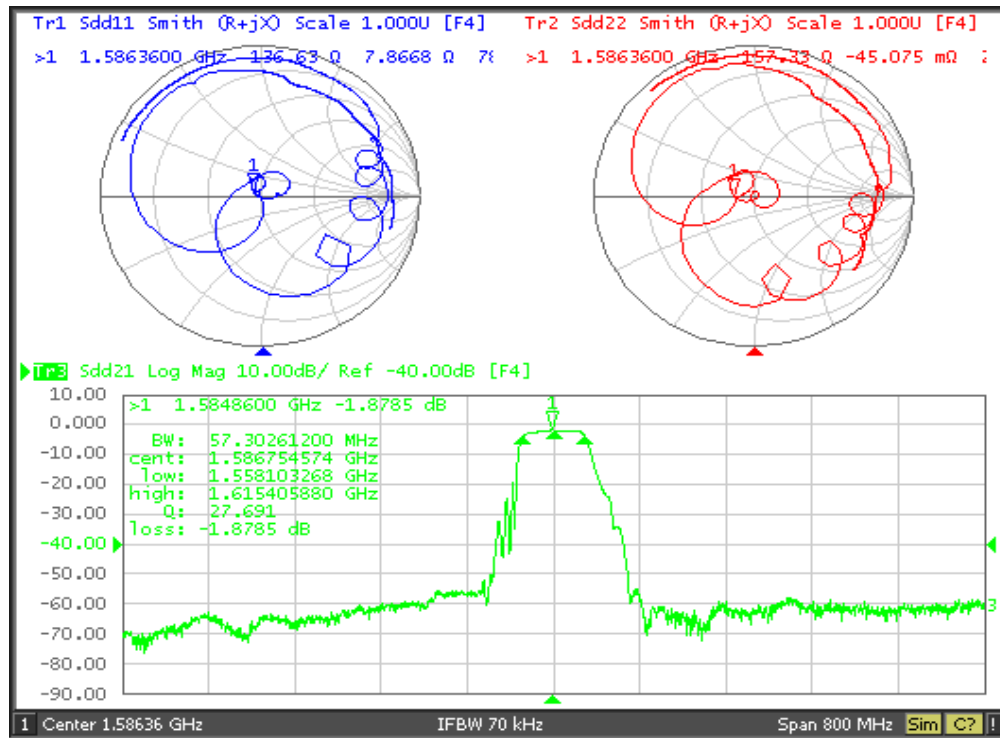


**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

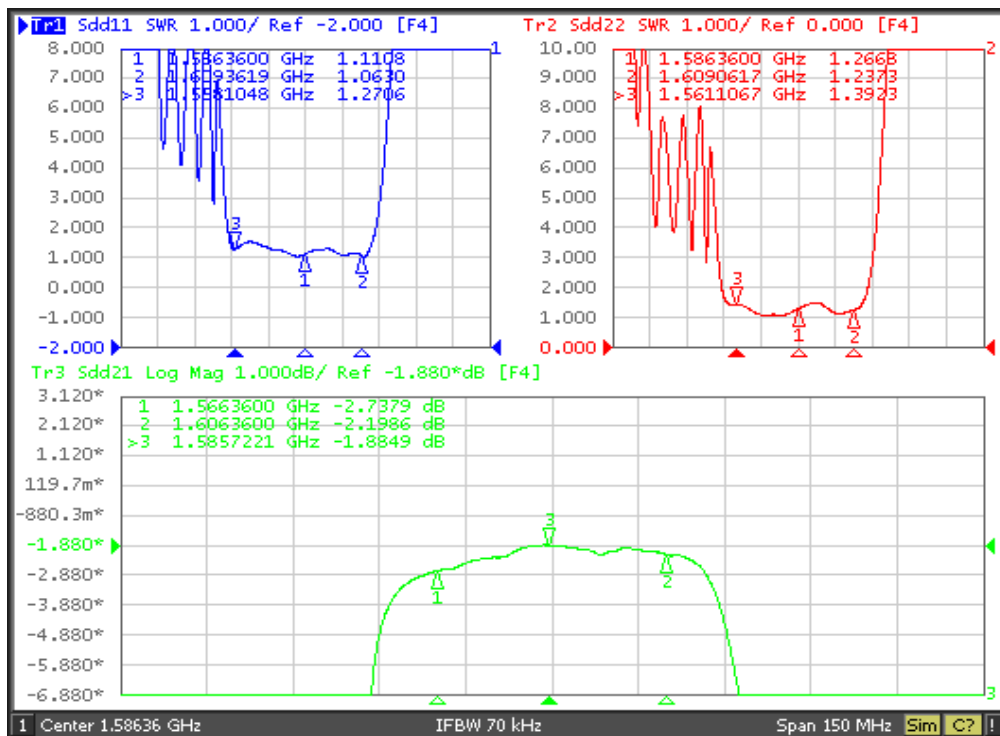
**Notes:**

1. Specification applies to any 30 MHz segment in the passband.
2. US and international patents may apply.
3. Murata, stylized Murata logo, and Murata N.A., Inc. are registered trademarks of Murata Manufacturing Co., Ltd.

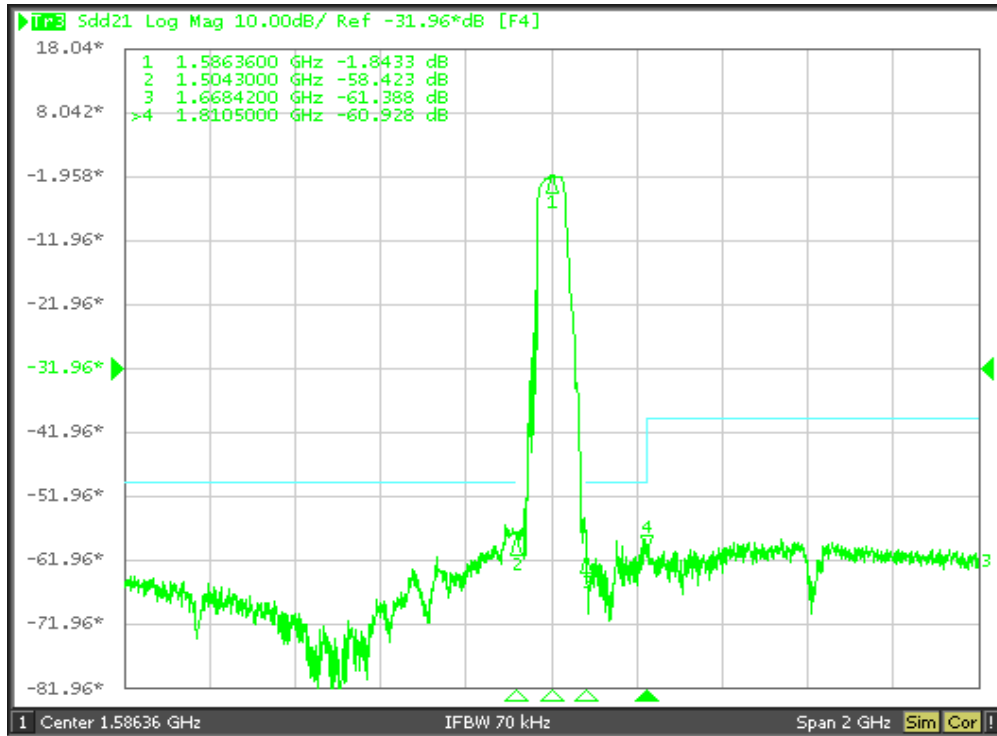
# Filter $S_{11}$ , $S_{22}$ and $S_{21}$ Parameters



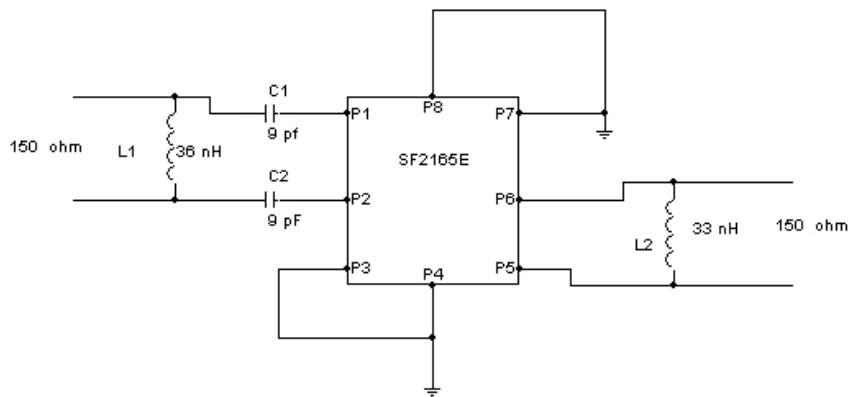
# Filter SWR and Passband Response



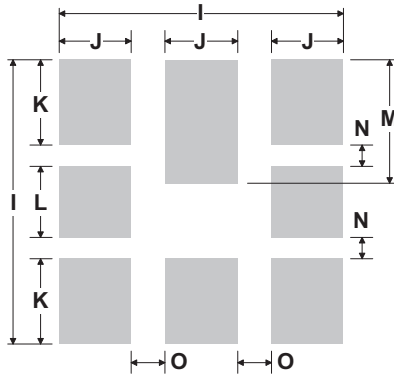
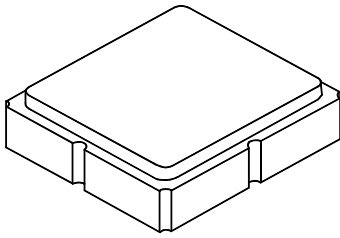
# Filter Broadband Response



# Filter Tuning Network



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



**PCB Footprint Top View**

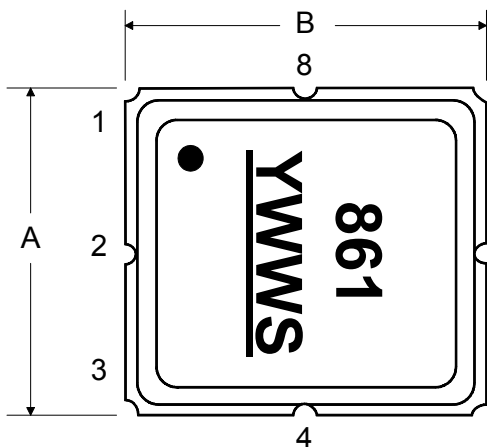
### Case and PCB Footprint Dimensions

Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	2.87	3.0	3.13	0.113	0.118	0.123
B	2.87	3.0	3.13	0.113	0.118	0.123
C	1.14	1.27	1.40	0.045	0.050	0.055
D	0.79	0.92	1.05	0.031	0.036	0.041
E	0.62	0.75	0.88	0.024	0.029	0.034
F	0.47	0.60	0.73	0.018	0.024	0.029
G	0.47	0.60	0.73	0.018	0.024	0.029
H	1.07	1.20	1.33	0.042	0.047	0.052
I		3.19			0.126	
J		0.81			0.032	
K		0.96			0.038	
L		0.81			0.032	
M		1.39			0.055	
N		0.23			0.009	
O		0.38			0.015	

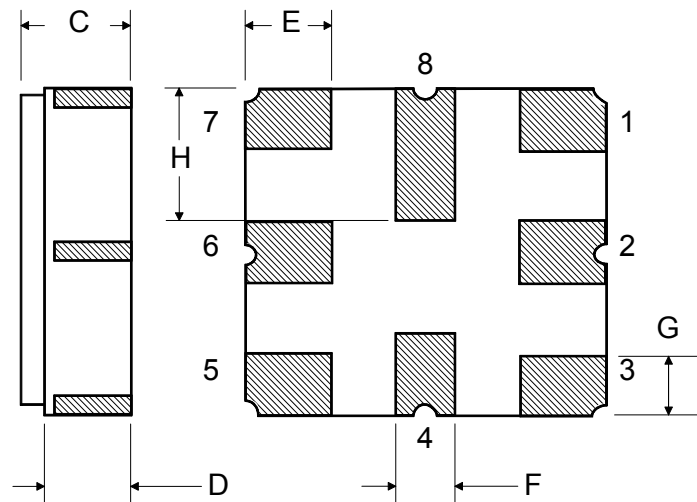
### Case Materials

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
Pb Free	

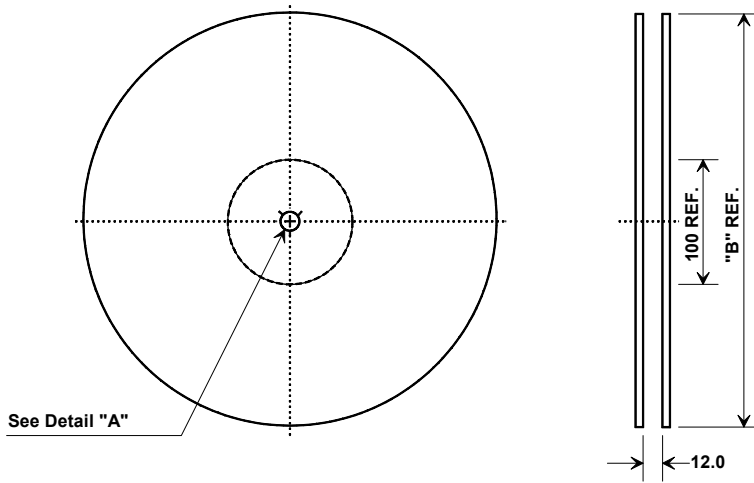
**TOP VIEW**



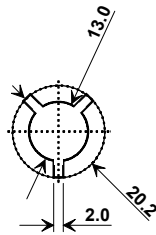
**BOTTOM VIEW**



# Tape and Reel Specifications



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



Carrier Tape Dimensions	
Ao	3.35 mm
Bo	3.35 mm
Ko	1.4 mm
Pitch	8.0 mm
W	12.0 mm

## COMPONENT ORIENTATION and DIMENSIONS

