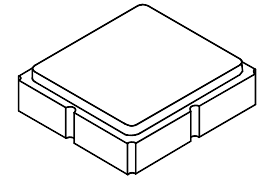


SF2165E

**1586.36 MHz
SAW Filter**



SM3030-8

- 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

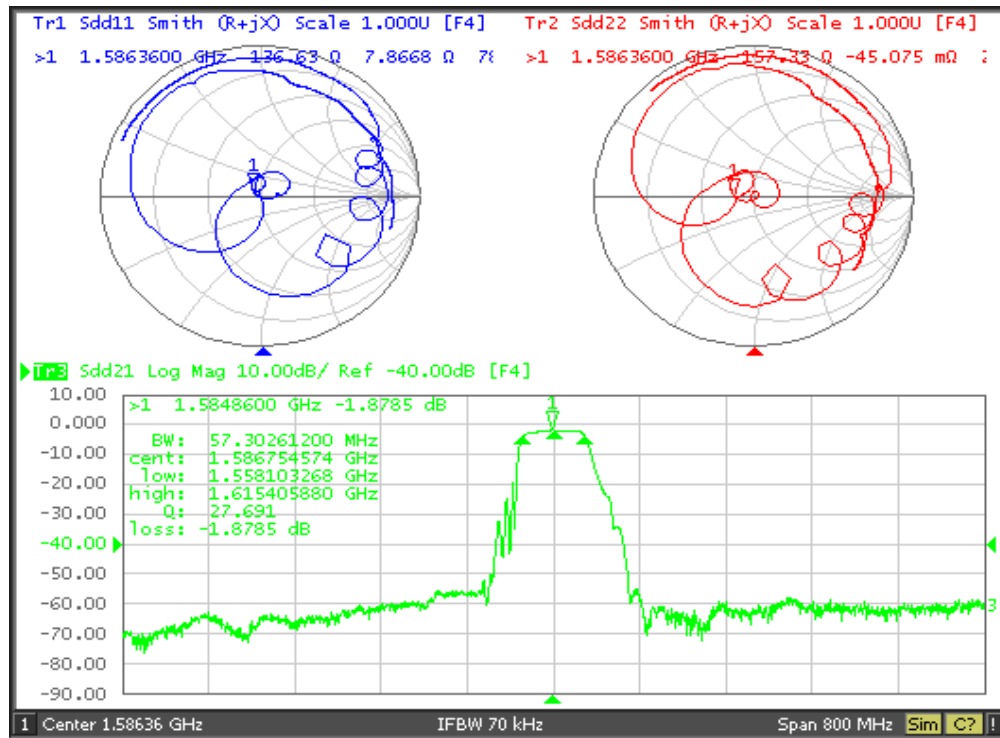


CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

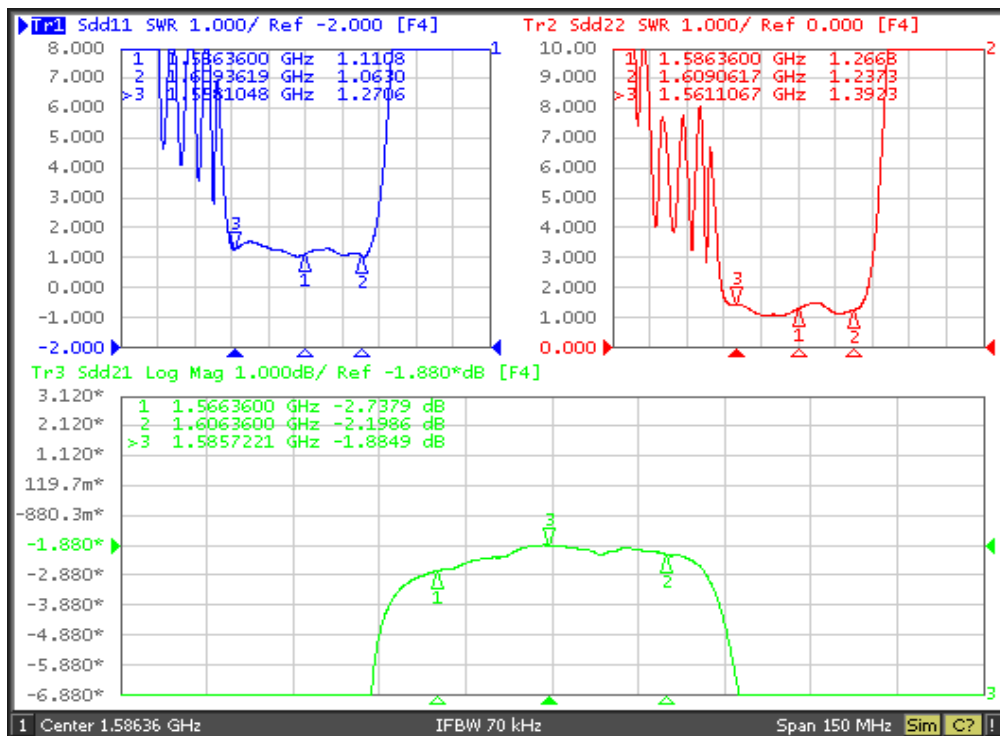
Notes:

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.

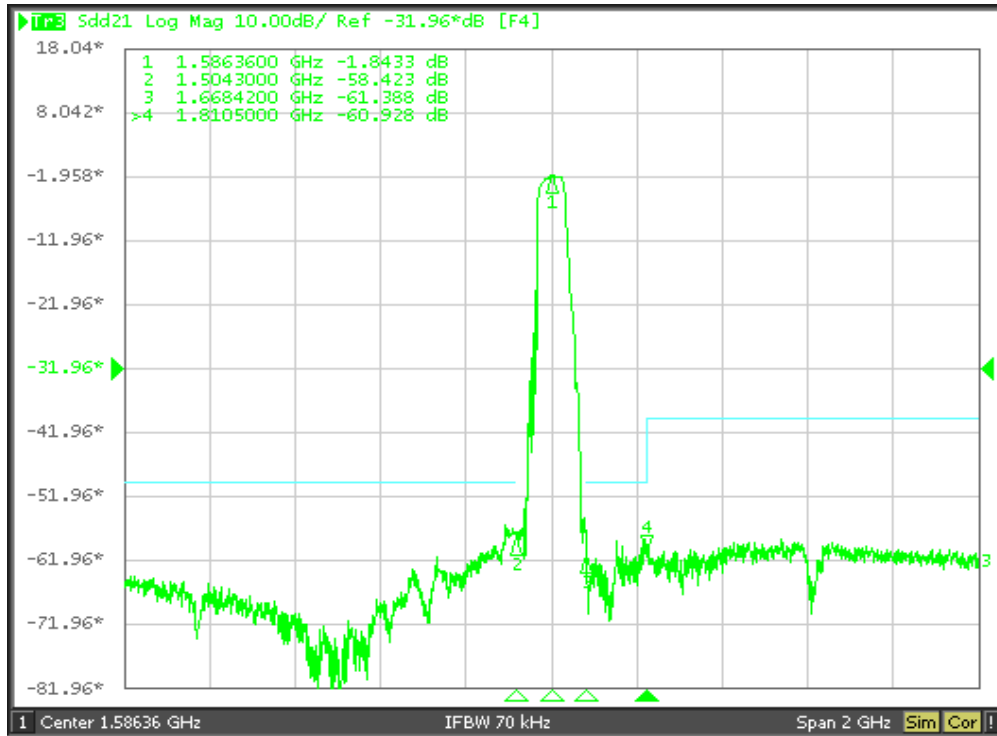
Filter S_{11} , S_{22} and S_{21} Parameters



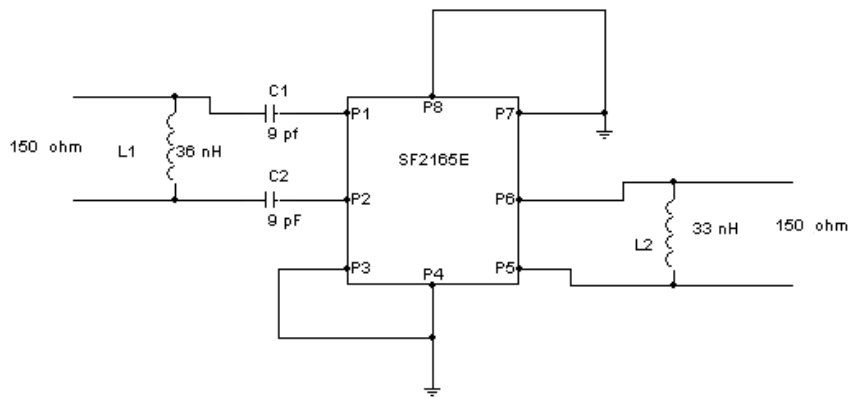
Filter SWR and Passband Response



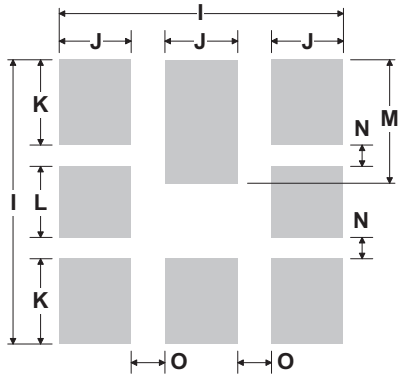
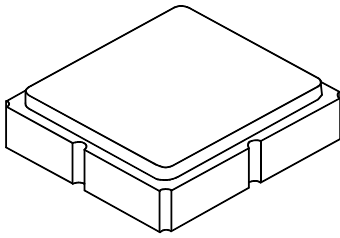
Filter Broadband Response



Filter Tuning Network



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



PCB Footprint Top View

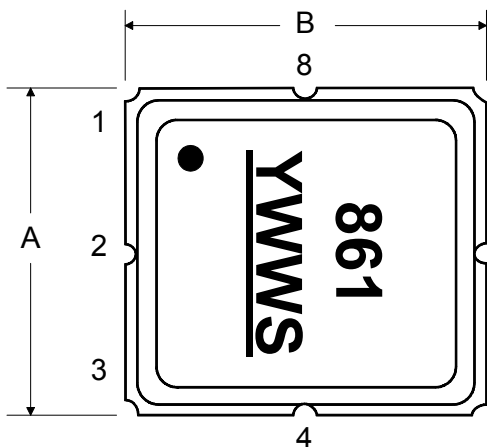
Case and PCB Footprint Dimensions

| 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 | |

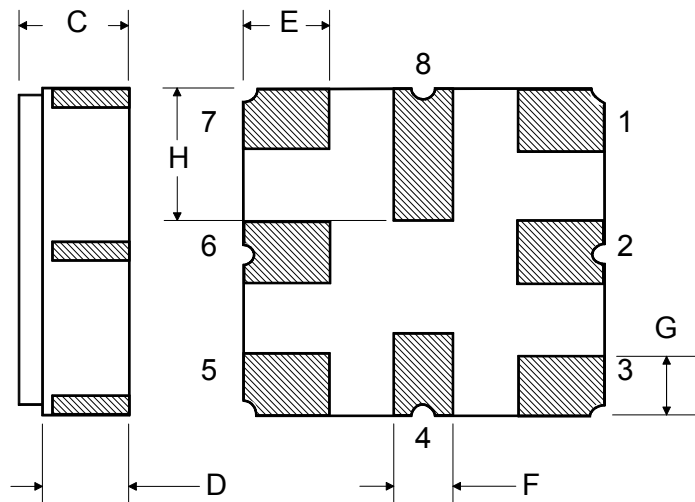
Case Materials

| Materials | |
|--------------------|--|
| Solder Pad Plating | 0.3 to 1.0 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 |

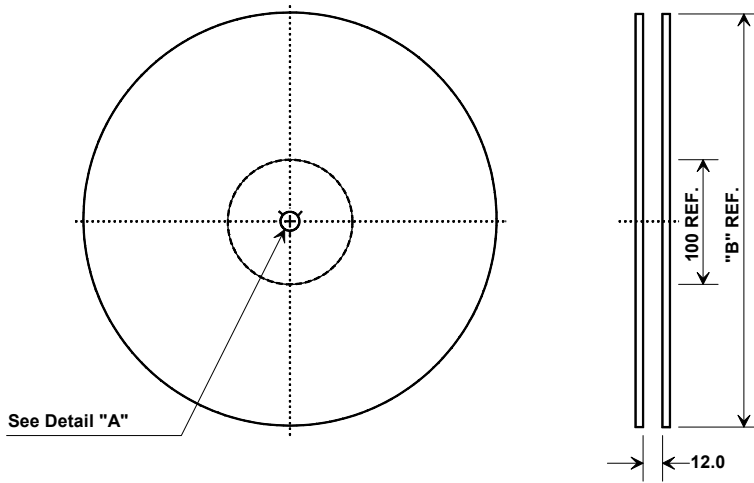
TOP VIEW



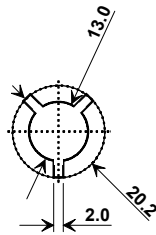
BOTTOM VIEW



Tape and Reel Specifications



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



| 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

