

- Low Insertion Loss L-Band SAW Filter
- 3.0 X 3.0 mm Surface-Mount Case
- Complies with Directive 2002/95/EC (RoHS)

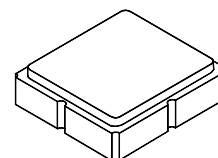


## Absolute Maximum Ratings

| Rating                                      | Value           | Units |
|---|-----------------|-------|
| Maximum Incident Power in Passband          | +10             | dBm   |
| DC Voltage on any Non-ground Terminal       | 5               | V     |
| Operable Temperature Range                  | -45 to +125     | °C    |
| Specification Temperature Range             | -30 to +85      | °C    |
| Storage Temperature Range in Tape and Reel  | -40 to +85      | °C    |
| Maximum Soldering Profile, 5 Cycles Maximum | 265 °C for 10 s |       |

**SF2036E**

**1880 MHz  
SAW Filter**



**SM3030-6**

## Electrical Characteristics

| Characteristic                             | Sym                                 | Notes | Min | Typ  | Max | Units             |
|--|-------------------------------------|-------|-----|------|-----|-------------------|
| Center Frequency                           | $f_C$                               |       |     | 1880 |     | MHz               |
| Insertion Loss, 1850 to 1910 MHz           | IL                                  |       |     | 2.45 | 4.0 | dB                |
| Amplitude Ripple, 1850 to 1910 MHz         |                                     |       |     | 1.2  | 2.5 | dB <sub>p-p</sub> |
| Attenuation Referenced to 0 dB:            |                                     |       |     |      |     |                   |
| DC to 1660 MHz                             |                                     |       | 20  | 32   |     | dB                |
| 1660 to 1721 MHz                           |                                     |       | 30  | 35   |     | dB                |
| 1721 to 1800 MHz                           |                                     |       | 20  | 37   |     | dB                |
| 1930 to 1990 MHz                           |                                     |       | 7   | 19   |     | dB                |
| 2000 to 2040 MHz                           |                                     |       | 25  | 37   |     | dB                |
| 2040 to 2480 MHz                           |                                     |       | 31  | 38   |     | dB                |
| 3700 to 3820 MHz                           |                                     |       | 25  | 35   |     | dB                |
| Input/Output Return Loss, 1850 to 1910 MHz |                                     |       | 7.4 | 13   |     | dB                |
| Source Impedance                           | $Z_S$                               |       |     | 50   |     | $\Omega$          |
| Load Impedance                             | $Z_L$                               |       |     | 50   |     | $\Omega$          |
| Case Style                                 | SM3030-6 3 x 3 mm Nominal Footprint |       |     |      |     |                   |
| Lid Symbolization, Y=year, WW=week, S=shif | 510 YWWS                            |       |     |      |     |                   |

## Electrical Connections

| Connection | Terminals  |
|------------|------------|
| Input      | 2          |
| Output     | 5          |
| Ground     | All others |

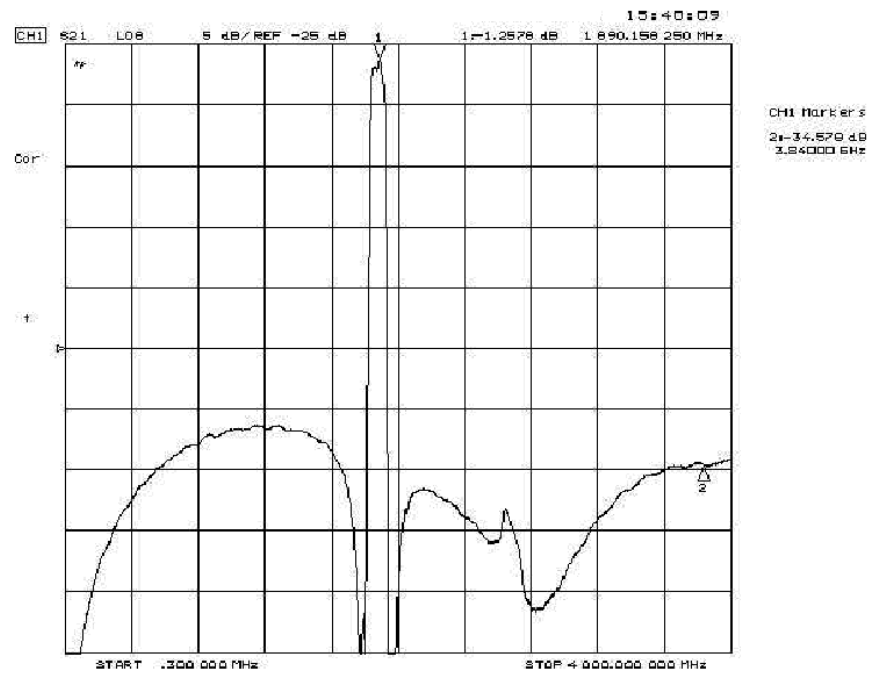
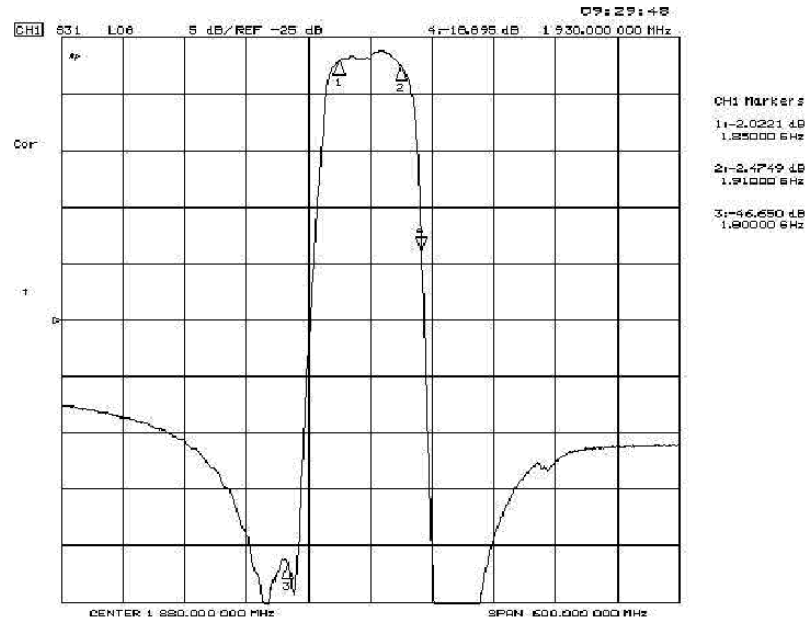


**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

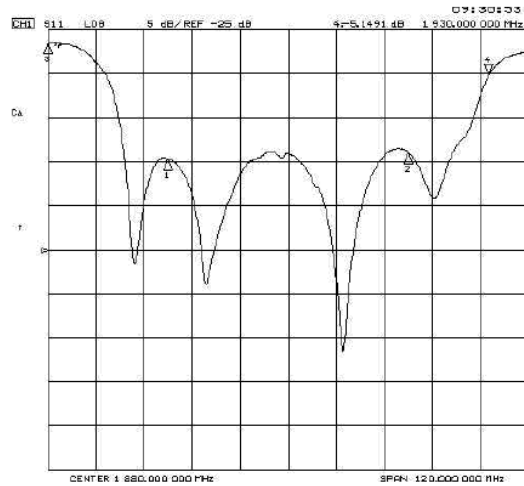
## NOTES:

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.

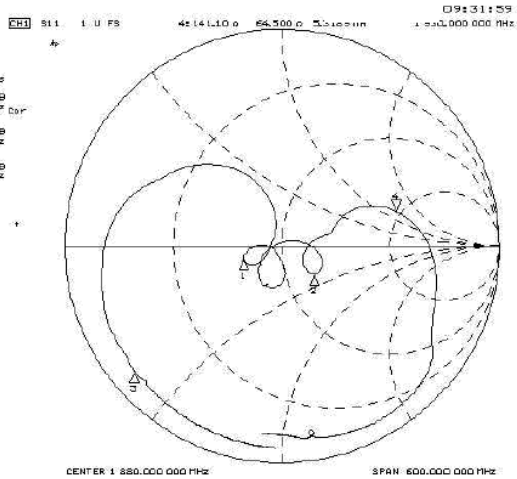
**Frequency Characteristics :**  
**Transfer function**



## S11

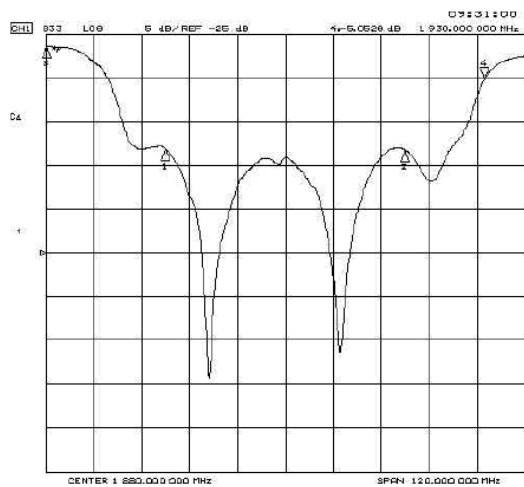


CH1 Markers  
 1: -14.639 dB  
 1.880000 GHz  
 2: -13.870 dB  
 1.910000 GHz  
 3: -13.559 dB  
 1.930000 GHz

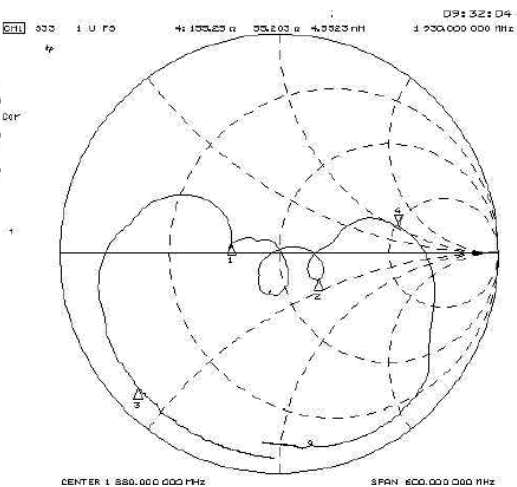


CH1 Markers  
 1: 34.939 a  
 -14.639 dB  
 1.880000 GHz  
 2: 65.107 a  
 -13.870 dB  
 1.910000 GHz  
 3: 32.109 a  
 -13.559 dB  
 1.930000 GHz

## S22



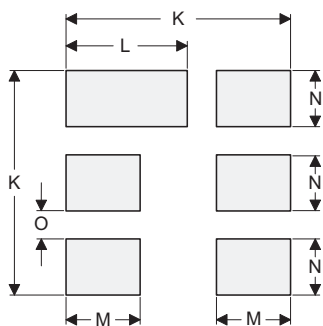
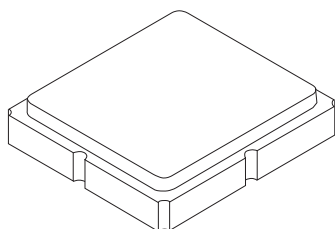
CH1 Markers  
 1: -13.156 dB  
 1.880000 GHz  
 2: -13.236 dB  
 1.910000 GHz  
 3: -13.764 dB  
 1.930000 GHz



CH1 Markers  
 1: 32.140 a  
 -13.156 dB  
 1.880000 GHz  
 2: 65.670 a  
 -13.236 dB  
 1.910000 GHz  
 3: 33.355 a  
 -13.764 dB  
 1.930000 GHz

# SM3030-6 Case

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



PCB Footprint Top View

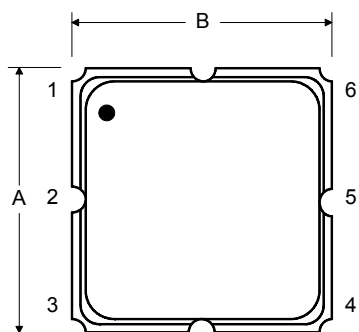
Case and PCB Footprint Dimensions

| 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 | 1.38 | 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 |       |

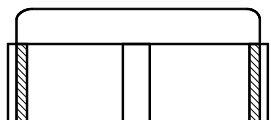
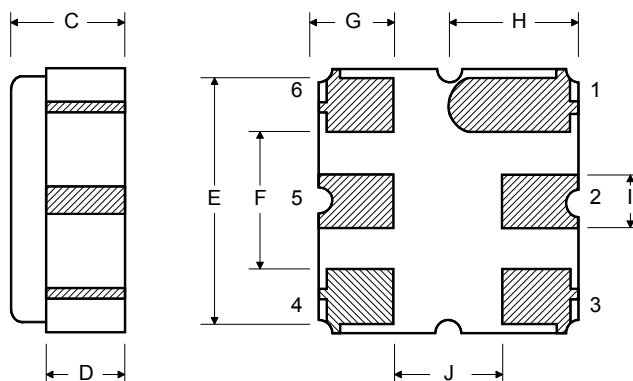
Case Materials

| 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            |  |

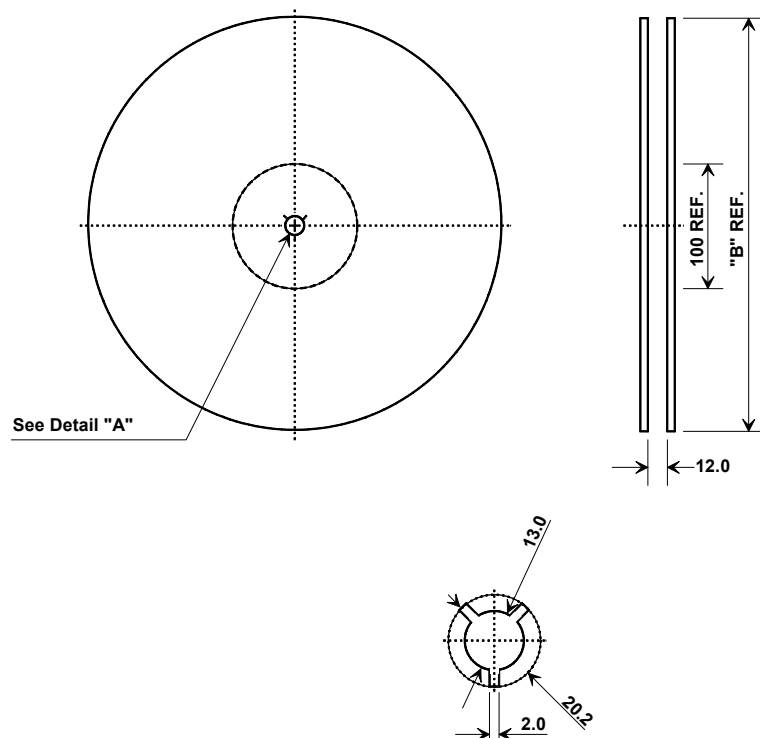
Top View



Bottom View



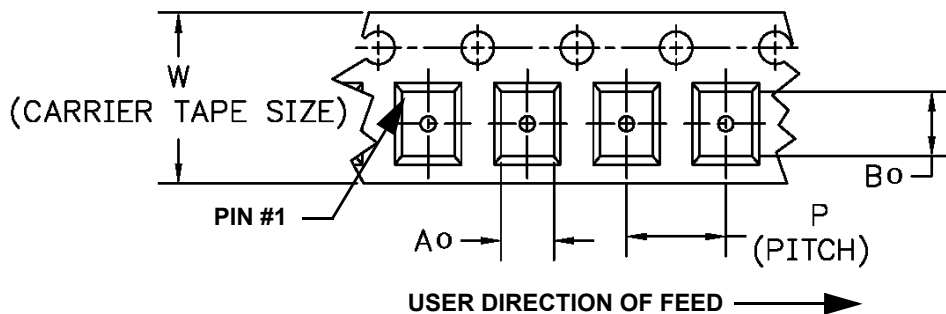
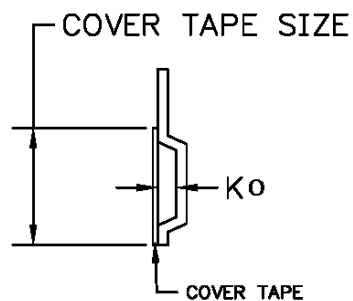
## Tape and Reel Specifications



| “B”<br>Nominal Size |             | 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                      | 1.4 mm  |
| Pitch                   | 8.0 mm  |
| W                       | 12.0 mm |



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