

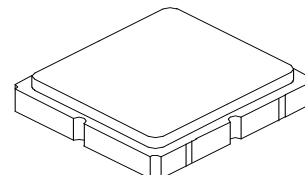
- **Low Loss SAW Filter**
- **Surface Mount 3.0 x 3.0 mm Package**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Moisture Sensitivity Level: 1**

#### Absolute Maximum Ratings

| Rating                                                 | Value       | Units |
|--------------------------------------------------------|-------------|-------|
| Input Power Level                                      | 5           | dBm   |
| DC Voltage on any Non-ground Terminal                  | 3           | V     |
| Operable Temperature Range                             | -45 to +105 | °C    |
| Specification Temperature Range                        | -40 to +90  | °C    |
| Storage Temperature Range in Tape and Reel             | -40 to +85  | °C    |
| Maximum Soldering Profile, 5 cycles/10 seconds maximum | 265         | °C    |

**SF2133E-3**

**1747.5 MHz  
SAW Filter**



**SM3030-6**

#### Electrical Characteristics

| Characteristic                       | Sym   | Notes | Min | Typ    | Max<br>+25°C | Max<br>-20 to +70 °C | Max<br>-40 to +90°C | Units             |
|--------------------------------------|-------|-------|-----|--------|--------------|----------------------|---------------------|-------------------|
| Center Frequency                     | $f_c$ |       |     | 1747.5 |              |                      |                     | MHz               |
| Insertion Loss, 1710 to 1785 MHz     | IL    |       |     | 2.3    | 2.8          | 4.0                  | 4.5                 | dB                |
| Amplitude Ripple, 1710 to 1785 MHz   |       |       |     | 1.1    |              | 2.5                  | 3.0                 | dB <sub>P-P</sub> |
| Group Delay Ripple, 1710 to 1785 MHz | GDV   |       |     | 14     |              | 40                   |                     | ns                |
| Attenuation Referenced to 0 dB:      |       |       |     |        |              |                      |                     |                   |
| 10 to 1670 MHz                       |       |       | 15  | 20     |              |                      |                     | dB                |
| 1670 to 1690 MHz                     |       |       | 6   | 30     |              |                      |                     |                   |
| 1805 to 1880 MHz                     |       |       | 6   | 18     |              |                      |                     |                   |
| 1880 to 4500 MHz                     |       |       | 15  | 21     |              |                      |                     |                   |
| 4500 to 5000 MHz                     |       |       | 10  | 20     |              |                      |                     |                   |
| Input/Output VSWR, 1710 to 1785 MHz  |       |       |     | 1.9:1  |              | 2.5:1                | 2.5:1               |                   |
| Source Impedance                     | $Z_S$ |       |     | 50     |              |                      |                     | $\Omega$          |
| Load Impedance                       | $Z_L$ |       |     | 50     |              |                      |                     | $\Omega$          |

|                                                                  |                                         |
|------------------------------------------------------------------|-----------------------------------------|
| Case Style                                                       | SM3030-6 3.0 x 3.0 mm Nominal Footprint |
| Lid Symbolization (Y=year, WW=week, S=shift) dot=pin 1 indicator | 8R, <u>YWW</u> S                        |

#### Electrical Connections

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

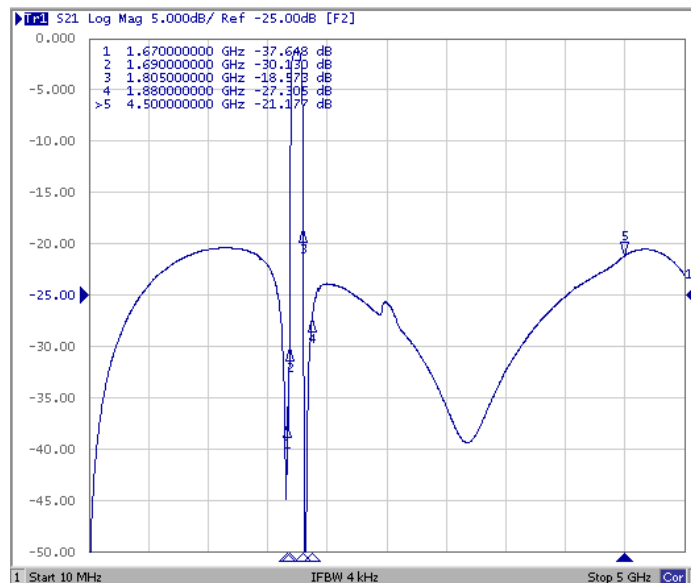
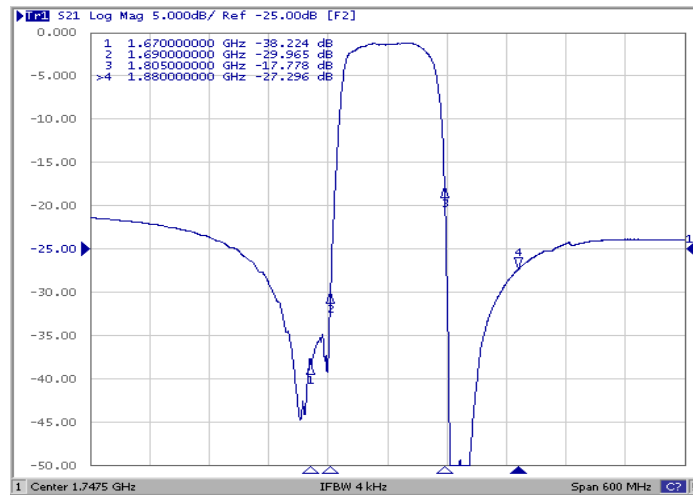
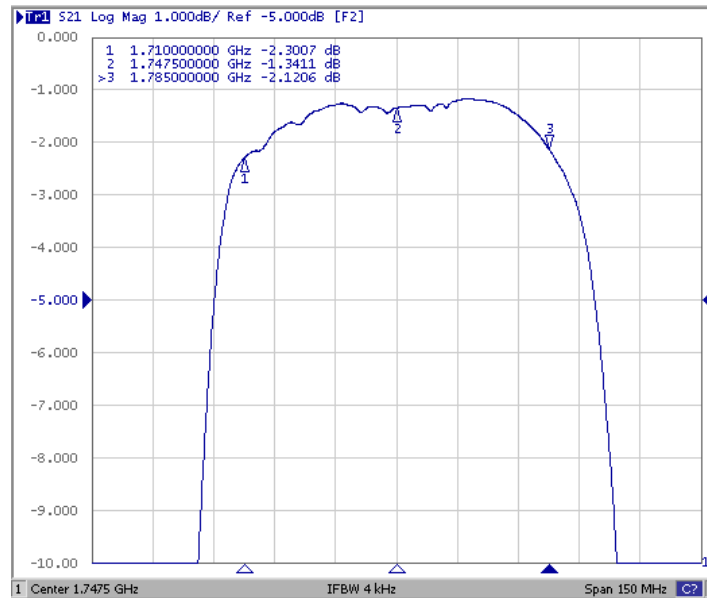


**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

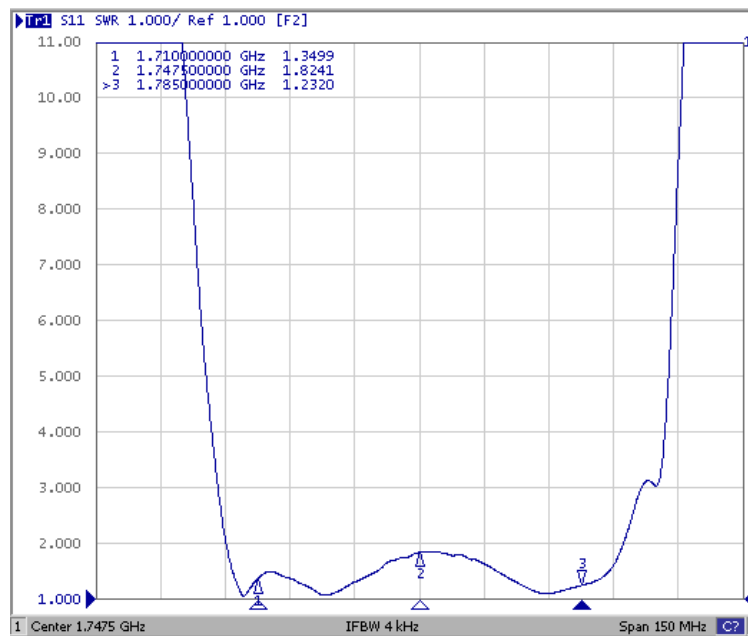
#### NOTES:

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

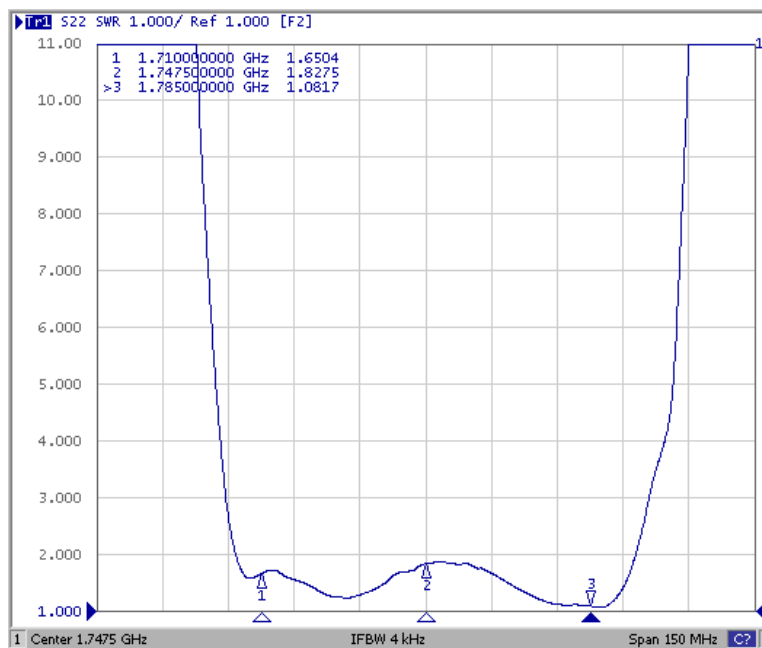
## Frequency Characteristics



## S11



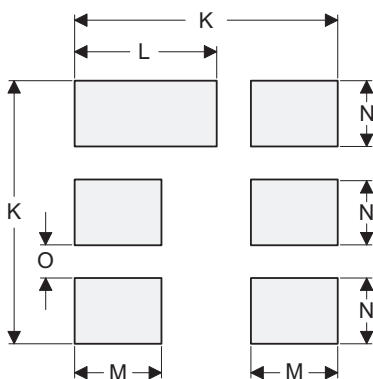
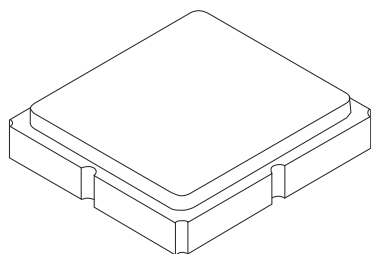
## S22



# SM3030-6 Case

## 6-Terminal Ceramic Surface-Mount Case

### 3.0 X 3.0 mm Nominal Footprint



PCB Footprint Top View

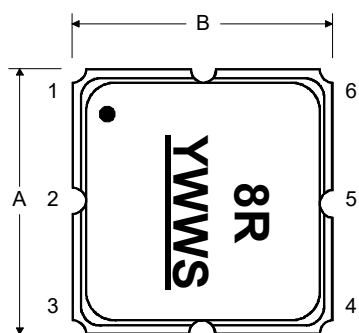
Case and PCB Footprint Dimensions

| 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 | 1.38 | 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 |       |

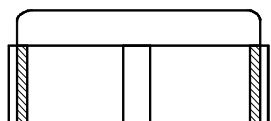
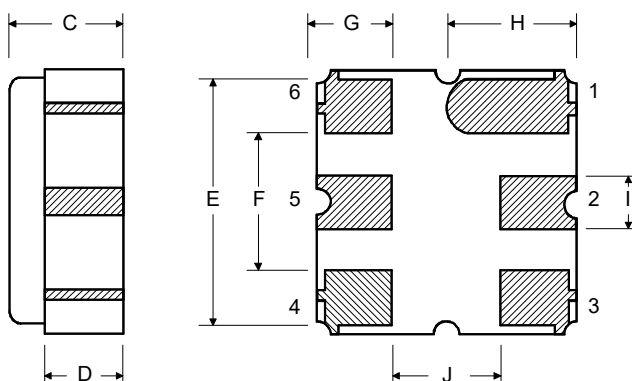
Case Materials

| 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                   |

Top View

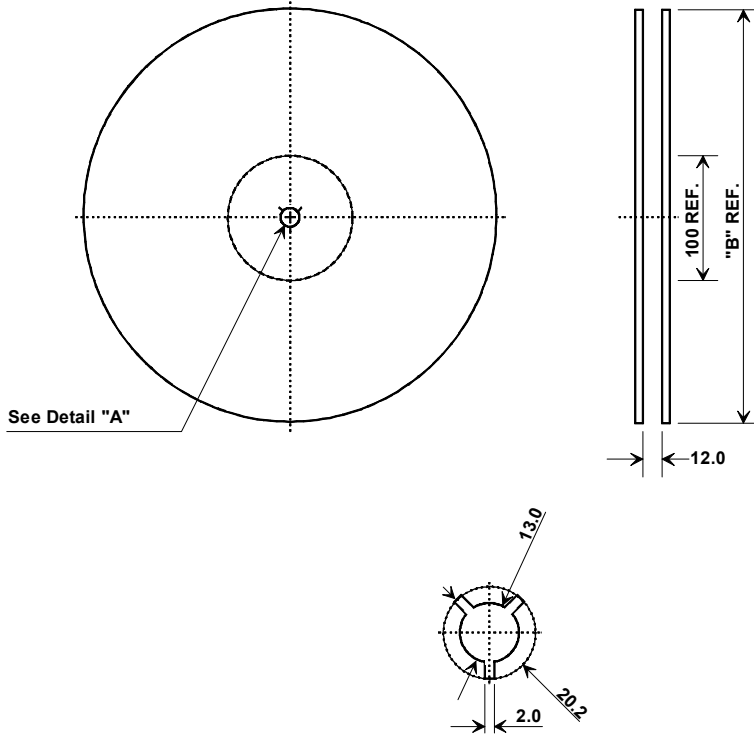


Bottom View



## Tape and Reel Specifications

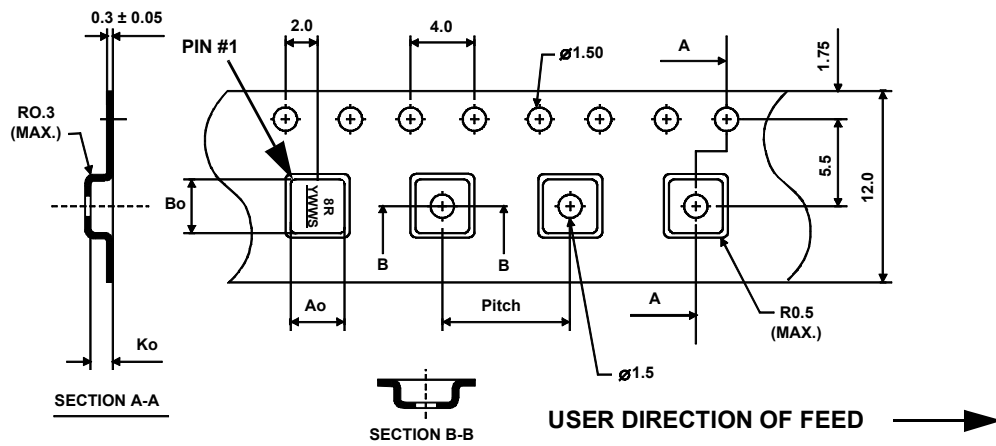
Tape and Reel Standard per ANSI/EIA-481



| "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                   | 4.0 mm  |
| W                       | 12.0 mm |



## Recommended Reflow Profile

1. Preheating shall be fixed at 150~180°C for 60~90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50~80 seconds and at 260°C+0/-5°C peak (10 seconds).
4. Time: 5 times maximum.

