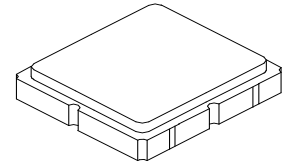


SF2053E

**915.00 MHz
SAW Filter**



SM3030-6

- **Low Loss Filter for 915 MHz Front End**
- **Complies with Directive 2011/65/EU (RoHS)**
- **Moisture Sensitivity Level: 1**
- **AEC-Q200 Qualified**

Absolute Maximum Ratings

| Rating | Value | Units |
|--|-------------|-------|
| Input Power Level | 20 | dBm |
| DC Voltage on any Non-ground Terminal | 3 | V |
| Operable Temperature Range | -45 to +125 | °C |
| Specification Temperature Range | -20 to +60 | °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 | | | 915 | | MHz |
| Insertion Loss, 908.75 to 921.25 MHz | IL_{MIN} | | | 3.0 | 5.0 | dB |
| Amplitude Variation, 910.25 to 921.25 MHz | | | | 1.0 | 1.5 | dB _{P-P} |
| Amplitude Variation, 908.75 to 921.25 MHz | | | | 1.0 | 3.1 | |
| Attenuation, Referenced to IL_{MIN} | | | | | | dB |
| 850 to 902 MHz | | | 18 | 31 | | |
| 928 to 940 MHz | | | 7.5 | 15 | | |
| 800 to 850 MHz | | | 35 | 48 | | |
| 940 to 1000 MHz | | | 33 | 41 | | |
| Temperature Coefficient of Frequency | TC_f | | | -42 | | ppm/K |
| Source Impedance | Z_S | | | 50 | | Ω |
| Load Impedance | Z_L | | | 50 | | Ω |

| | |
|--|---|
| Case Style | SM3030-6 3.0 x 3.0 mm Nominal Footprint |
| Lid Symbolization (Y=year, WW=week, S=shift) dot=pin 1 indicator | 531, <u>YWWS</u> |

Electrical Connections

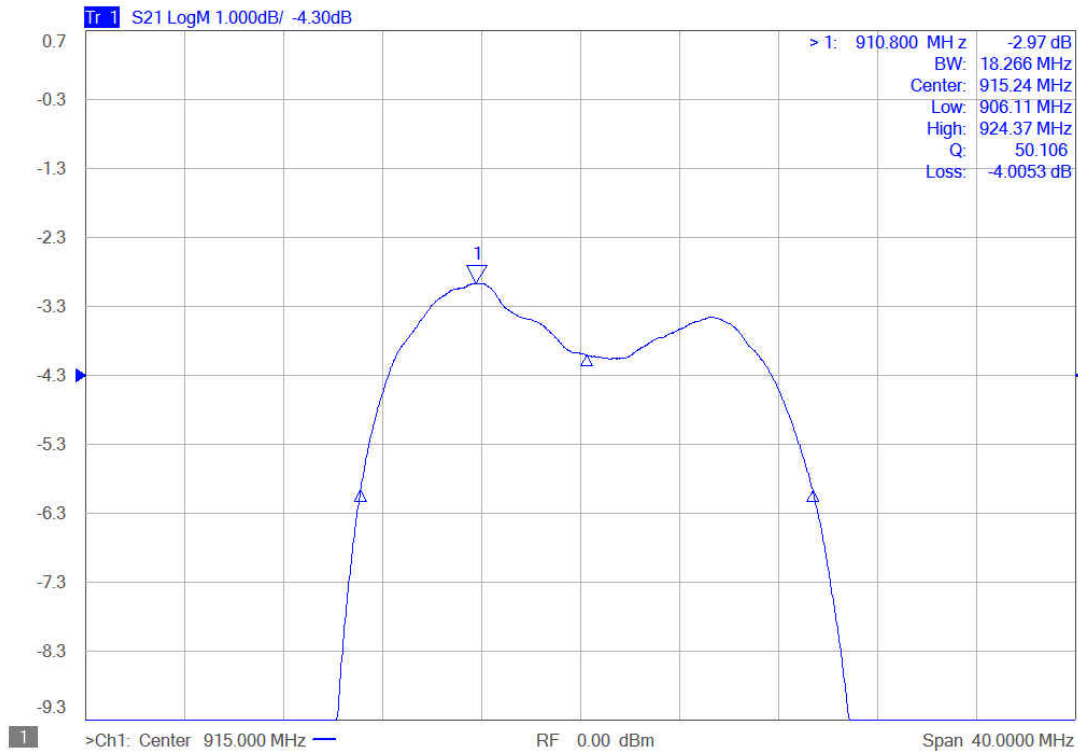
| Connection | Terminals |
|-------------|------------|
| Input | 2 |
| Output | 5 |
| Case Ground | All others |

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

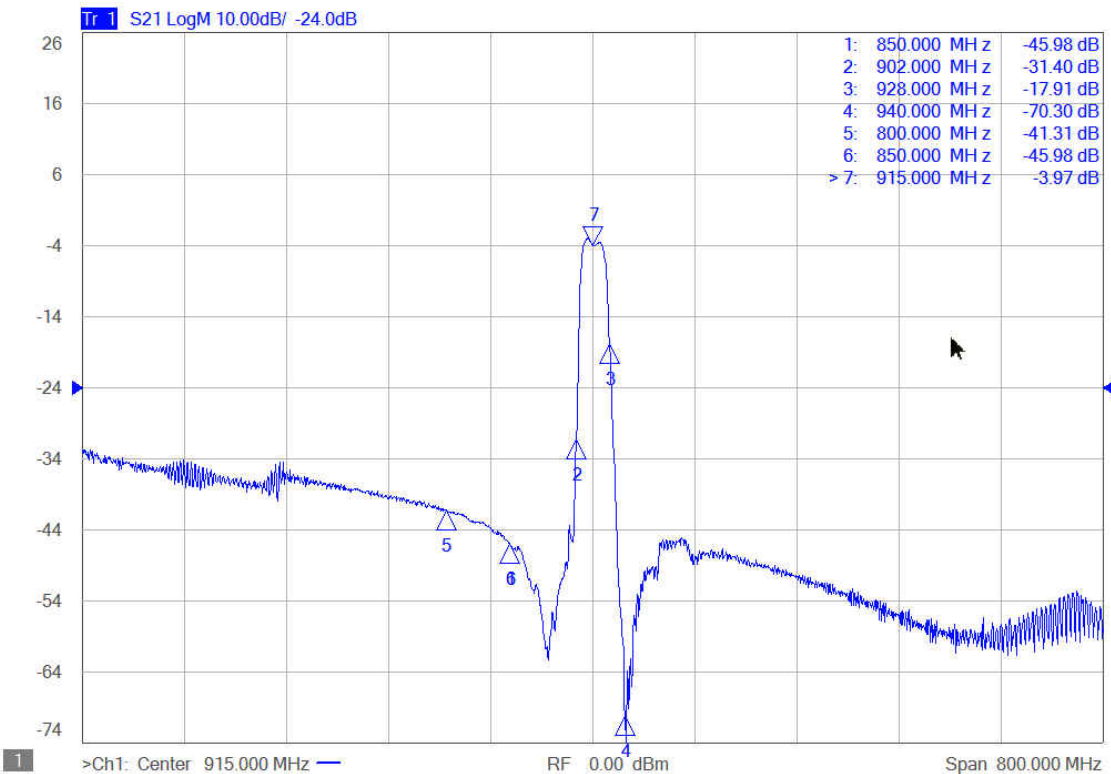
1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

Frequency Characteristics

Passband

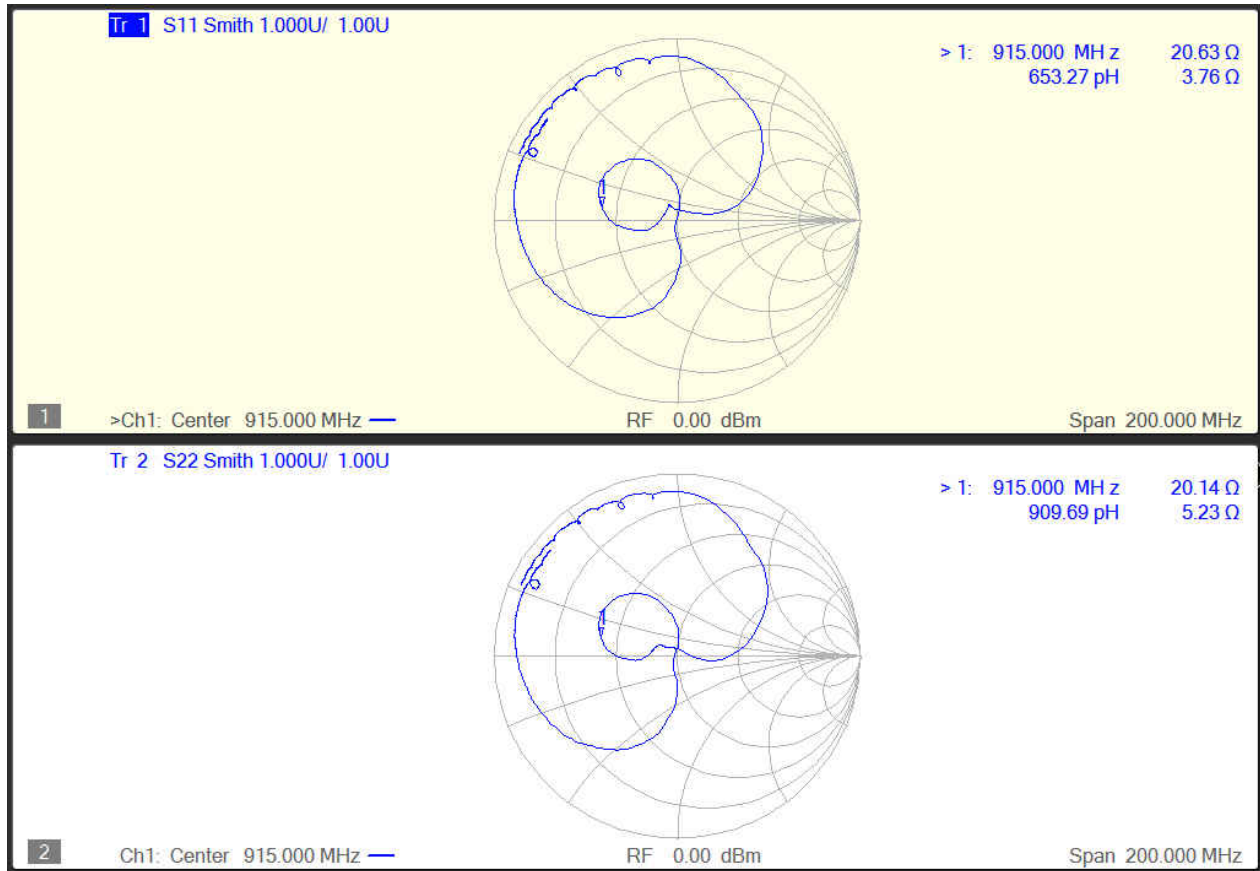


Rejection



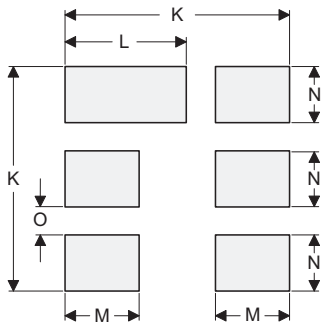
Frequency Characteristics (Continued)

Smith Chart



SM3030-6 Case

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



PCB Footprint Top View

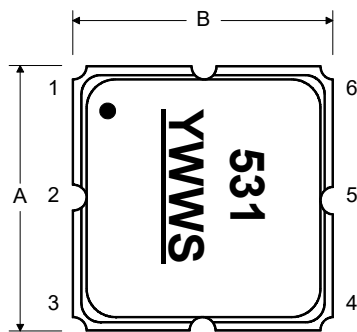
Case and PCB Footprint Dimensions

| 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 | |

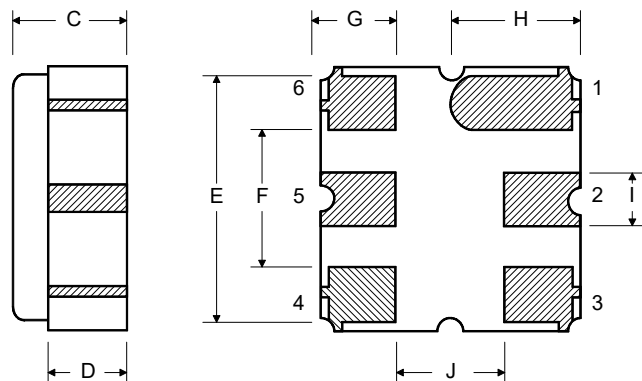
Case Materials

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

TOP VIEW

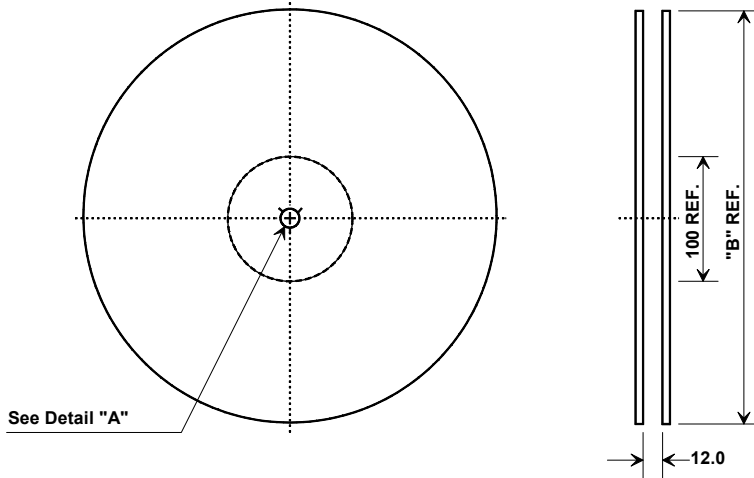


BOTTOM VIEW

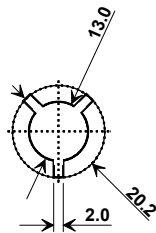


Tape and Reel Specifications

Tape and Reel Standard per ANSI/EIA-481

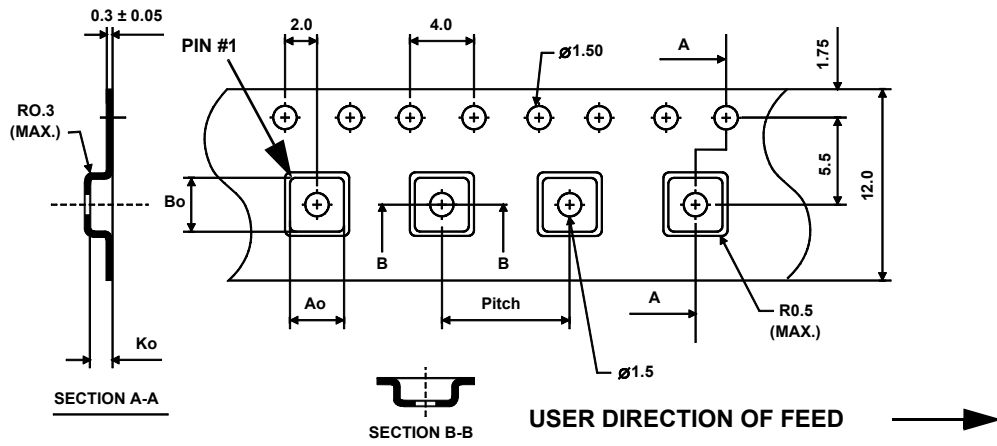


| "B" | | Quantity Per Reel |
|--------|-------------|-------------------|
| Inches | millimeters | |
| 7 | 178 | 500 |
| 13 | 330 | 3000 |



COMPONENT ORIENTATION and DIMENSIONS

| Carrier Tape Dimensions | |
|-------------------------|---------|
| Ao | 3.35 mm |
| Bo | 3.35 mm |
| Ko | 1.40 mm |
| Pitch | 8.0 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.

