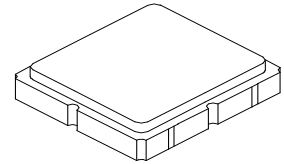


**SF2234E**

**1980 MHz  
SAW Filter**



**SM3030-6**

- **Low-loss SAW Filter**
- **No Matching Required for 50 Ω Source/Load Impedances**
- **Complies with Directive 2011/65/EU (RoHS)**
- **Moisture Sensitivity Level: 1**

**Absolute Maximum Ratings**

| Rating   | Value       | Units |
|--|-------------|-------|
| Input Power Level                                      | +15         | dBm   |
| DC Voltage on any Non-grounded Terminal                | 3           | V     |
| Operable Temperature Range                             | -45 to +125 | °C    |
| Operating Temperature Range                            | -40 to +85  | °C    |
| Storage Temperature Range in Tape and Reel             | -40 to +85  | °C    |
| Maximum Soldering Profile, 5 cycles/10 seconds maximum | 265         | °C    |

| Characteristic - 1980 MHz                  | Sym   | Notes | Min | Typ  | Max | Units             |
|--|-------|-------|-----|------|-----|-------------------|
| Center Frequency                           | $f_C$ |       |     | 1980 |     | MHz               |
| Insertion Loss, 1965 to 1995 MHz           | IL    |       |     |      | 3.0 | dB                |
| Amplitude Ripple, 1965 to 1995 MHz         |       |       |     |      | 2.0 | dB <sub>P-P</sub> |
| Input/Output Return Loss, 1965 to 1995 MHz |       |       | 11  |      |     | dB                |
| Attenuation, Referenced to 0 dB:           |       |       |     |      |     | dB                |
| DC to 1850 MHz                             |       |       | 20  |      |     |                   |
| 1850 to 1915 MHz                           |       |       | 25  |      |     |                   |
| 2103 to 2130 MHz                           |       |       | 25  |      |     |                   |
| 3930 to 3990 MHz                           |       |       | 20  |      |     |                   |
| 3990 to 6000 MHz                           |       |       | 17  |      |     |                   |

| Characteristic - 1985 MHz  | Sym                                     | Notes | Min | Typ  | Max | Units             |
|--|---|-------|-----|------|-----|-------------------|
| Center Frequency   | $f_C$                                   |       |     | 1985 |     | MHz               |
| Insertion Loss, 1965 to 2005 MHz                                 | IL                                      |       |     | 1.8  | 3.5 | dB                |
| Amplitude Ripple, 1965 to 2005 MHz                               |   |       |     | 1.5  | 2.0 | dB <sub>P-P</sub> |
| Input/Output Return Loss, 1965 to 2005 MHz                       |   |       | 11  | 14   |     | dB                |
| Attenuation, Referenced to 0 dB:                                 |   |       |     |      |     | dB                |
| DC to 1880 MHz   |   |       | 20  | 25   |     |                   |
| 1885 to 1915 MHz   |   |       | 25  | 30   |     |                   |
| 2103 to 2160 MHz   |   |       | 35  | 45   |     |                   |
| 3930 to 3990 MHz   |   |       | 25  | 30   |     |                   |
| 3990 to 6000 MHz   |   |       | 17  | 35   |     |                   |
| 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 | 969, YWWS                               |       |     |      |     |                   |

## Electrical Connections

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

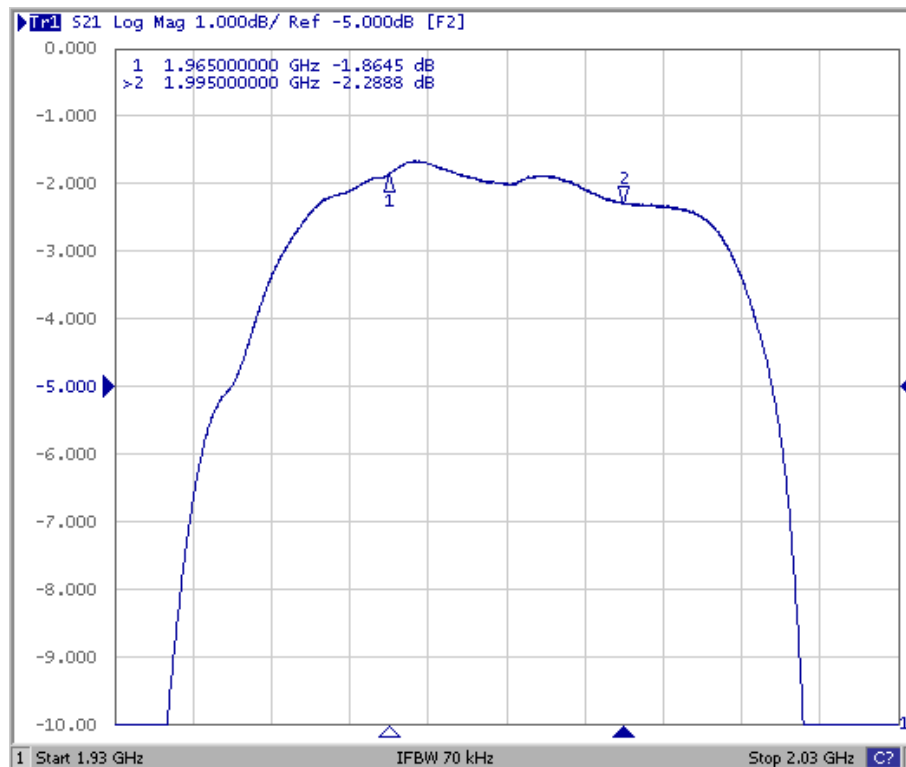


**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

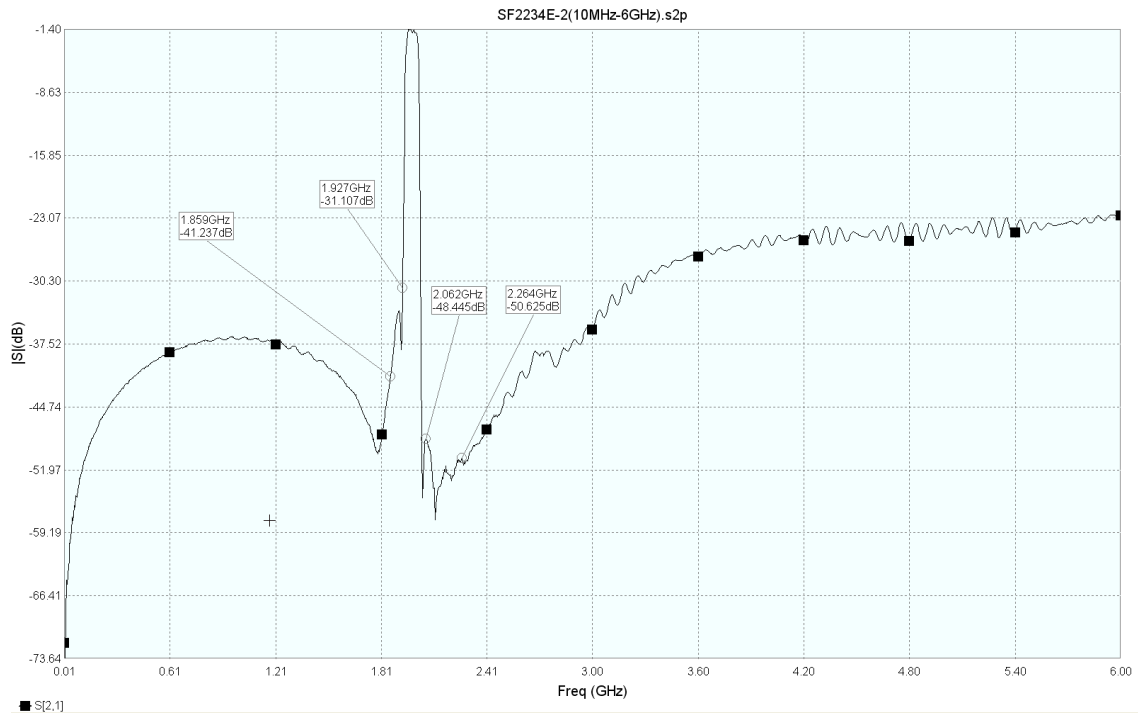
### NOTES:

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.

## Filter Passband Response



# Filter Broadband Response



# SM3030-6 Case

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



PCB Footprint Top View

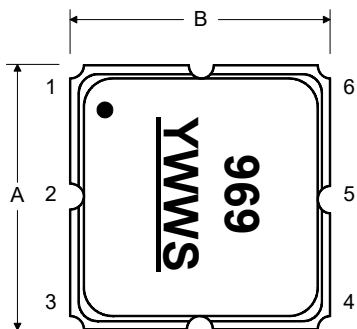
### Case and PCB Footprint Dimensions

| 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 |       |

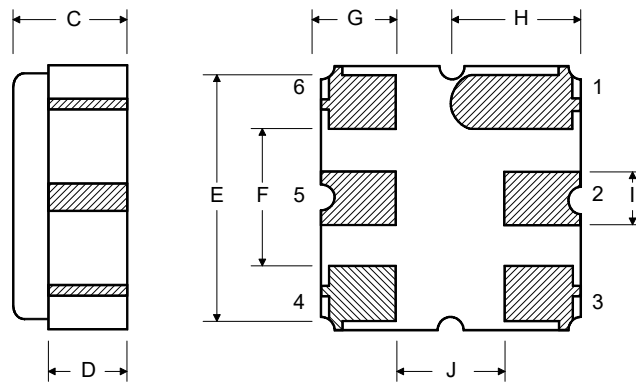
### Case Materials

| Materials          |  |
|--------------------|--|
| Solder Pad Plating | 0.3 to 1.0 $\mu\text{m}$ 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                                      |

### TOP VIEW

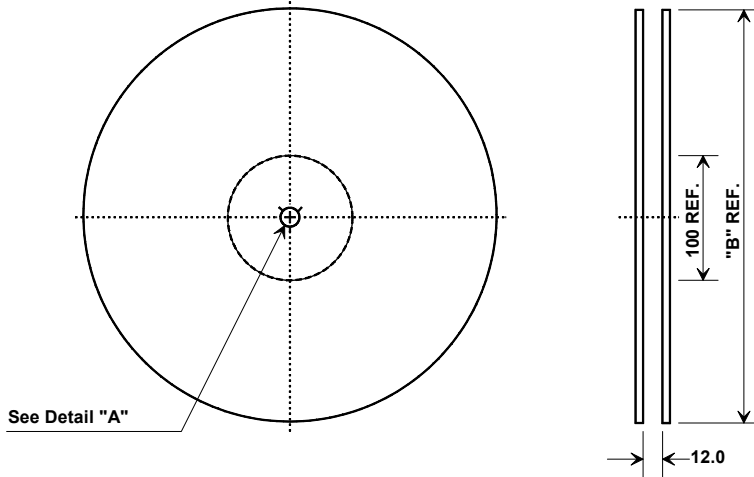


### BOTTOM VIEW

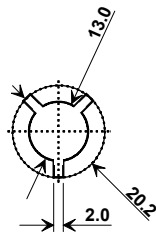


## Tape and Reel Specifications

Tape and Reel Standard per ANSI/EIA-481

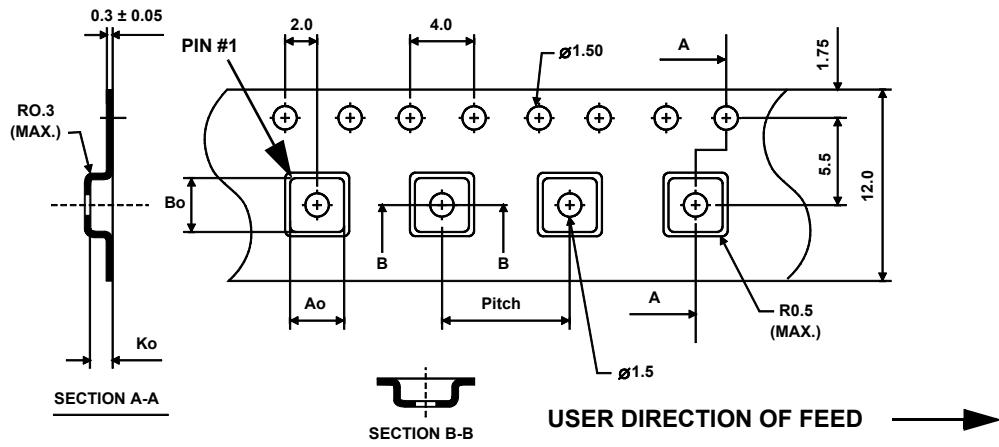


| "B"    |             | Quantity Per Reel |
|--------|-------------|-------------------|
| Inches | millimeters |                   |
| 7      | 178         | 500               |
| 13     | 330         | 3000              |



### 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.

