

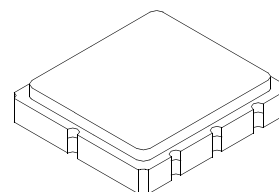
- **Low Insertion Loss SAW Filter**
- **5.0 x 5.0 mm Surface-mount Case**
- **Direct 50 ohm Operation**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Moisture Sensitivity Level: 1**

#### Absolute Maximum Ratings

| Rating                                        | Value           | Units |
|-----------------------------------------------|-----------------|-------|
| Maximum Incident Power in Passband            | +10             | dBm   |
| Maximum DC Voltage on any Non-ground Terminal | 3               | V     |
| Operating Temperature                         | -40 to + 85     | °C    |
| Storage Temperature Range in Tape and Reel    | -40 to + 85     | °C    |
| Maximum Soldering Profile                     | 265 °C for 10 s |       |

**SF2271C**

**460 MHz  
SAW Filter**



**SM5050-8**

#### Electrical Characteristics

| Characteristic                               | Sym        | Notes | Min                                 | Typ  | Max | Units  |
|----------------------------------------------|------------|-------|-------------------------------------|------|-----|--------|
| Center Frequency                             | $f_C$      |       |                                     | 460  |     | MHz    |
| Minimum Insertion Loss                       | $IL_{MIN}$ |       |                                     | 1.5  | 2.8 | dB     |
| 2 dB Bandwidth                               | $BW_2$     |       | 20                                  | 23.4 |     | MHz    |
| Rejection Referenced to 0 dB:                |            |       |                                     |      |     | dB     |
| $f_C-45$ to $f_C-100$ MHz                    |            |       | 40                                  | 56   |     |        |
| $f_C+45$ to $f_C+55$ MHz                     |            |       | 30                                  | 56   |     |        |
| $f_C+55$ to $f_C+100$ MHz                    |            |       | 40                                  | 54   |     |        |
| Frequency Temperature Coefficient            | FTC        |       |                                     | -36  |     | ppm/°C |
| Source Impedance                             |            |       |                                     | 50   |     | ohms   |
| Load Impedance                               |            |       |                                     | 50   |     | ohms   |
| Case Style                                   |            |       | SM5050-8 5 x 5 mm Nominal Footprint |      |     |        |
| Lid Symbolization (Y=year, WW=week, S=shift) |            |       | A19, YWWS                           |      |     |        |

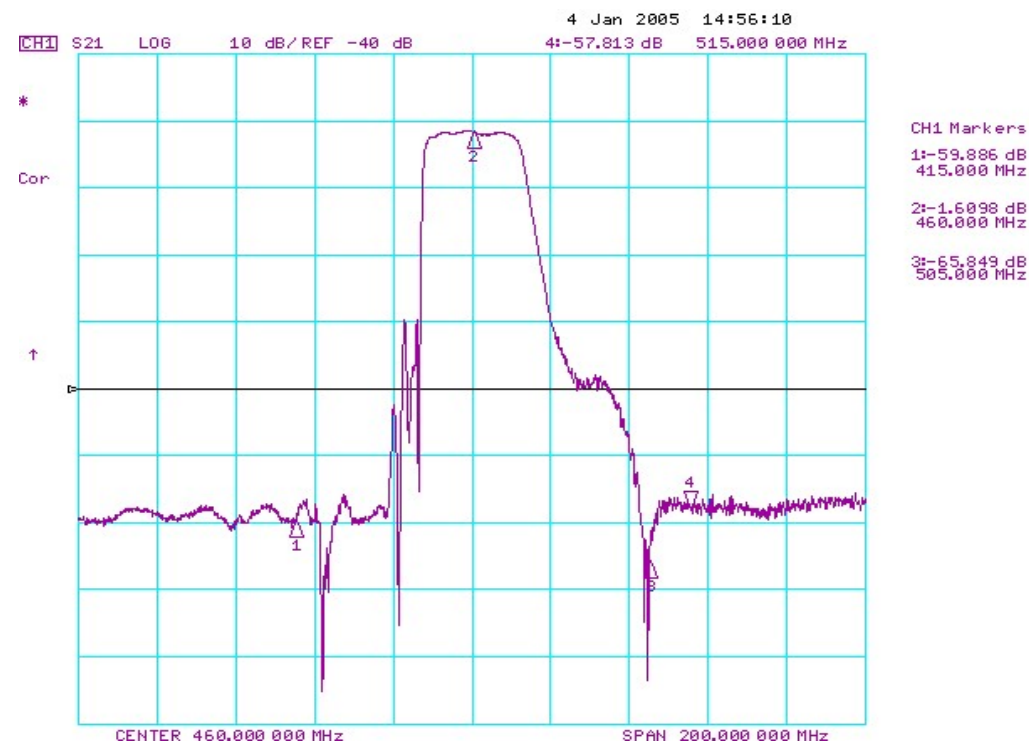


**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

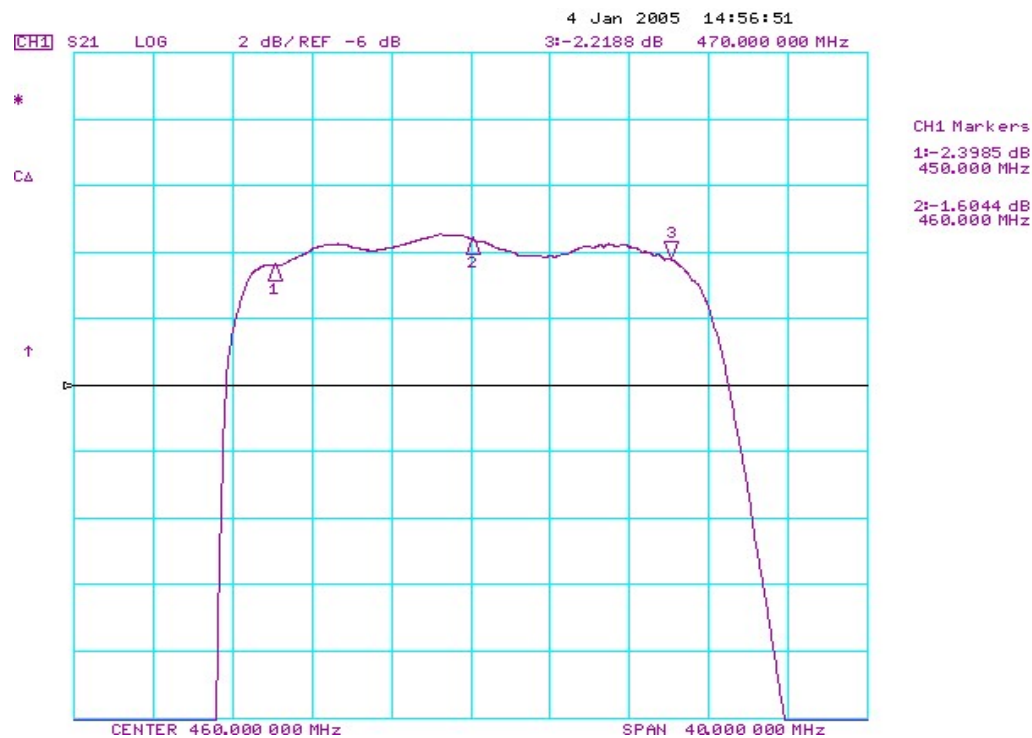
#### NOTES:

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 Transition Bandwidth Plot



# Filter Passband Plot



# SM5050-8 Surface-Mount 8-Terminal Ceramic Case

## 5.0 X 5.0 mm Nominal Footprint

### Case Dimensions

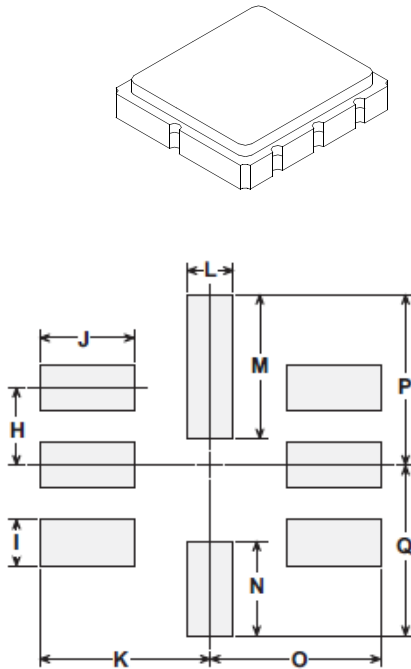
| Dimension | mm   |      |      | Inches |       |       |
|-----------|------|------|------|--------|-------|-------|
|           | Min  | Nom  | Max  | Min    | Nom   | Max   |
| A         | 4.80 | 5.00 | 5.20 | 0.189  | 0.197 | 0.205 |
| B         | 4.80 | 5.00 | 5.20 | 0.189  | 0.197 | 0.205 |
| C         | 1.30 | 1.50 | 1.70 | 0.050  | 0.060 | 0.067 |
| D         | 1.98 | 2.08 | 2.18 | 0.078  | 0.082 | 0.086 |
| E         | 1.07 | 1.17 | 1.27 | 0.042  | 0.046 | 0.050 |
| F         | 0.50 | 0.64 | 0.70 | 0.020  | 0.025 | 0.028 |
| G         | 2.39 | 2.54 | 2.69 | 0.094  | 0.100 | 0.106 |
| H         |      | 1.27 |      |        | 0.050 |       |
| I         |      | 0.76 |      |        | 0.030 |       |
| J         |      | 1.55 |      |        | 0.061 |       |
| K         |      | 2.79 |      |        | 0.110 |       |
| L         |      | 0.76 |      |        | 0.030 |       |
| M         |      | 2.36 |      |        | 0.093 |       |
| N         |      | 1.55 |      |        | 0.061 |       |
| O         |      | 2.79 |      |        | 0.110 |       |
| P         |      | 2.79 |      |        | 0.110 |       |
| Q         |      | 2.79 |      |        | 0.110 |       |

### Case Materials

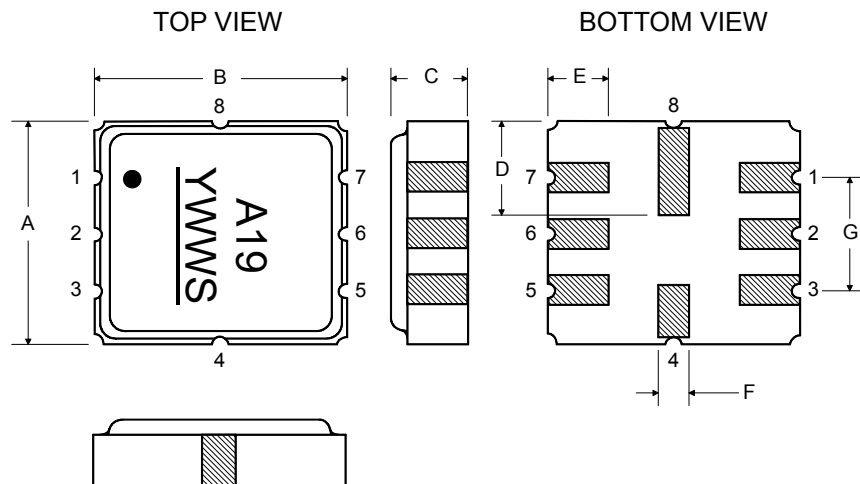
| Materials          |                                                          |
|--------------------|----------------------------------------------------------|
| Solder Pad Plating | 0.3 to 1.0 $\mu$ m Gold over 1.27 to 8.89 $\mu$ m Nickel |
| Lid Plating        | 2.0 to 3.0 $\mu$ m Nickel                                |
| Body               | Al <sub>2</sub> O <sub>3</sub> Ceramic                   |

### Electrical Connections

| Connection          |        | Terminals  |
|---------------------|--------|------------|
| Port 1              | Input  | 2          |
| Port 2              | Output | 6          |
|                     | Ground | All others |
| Dot indicates Pin 1 |        |            |

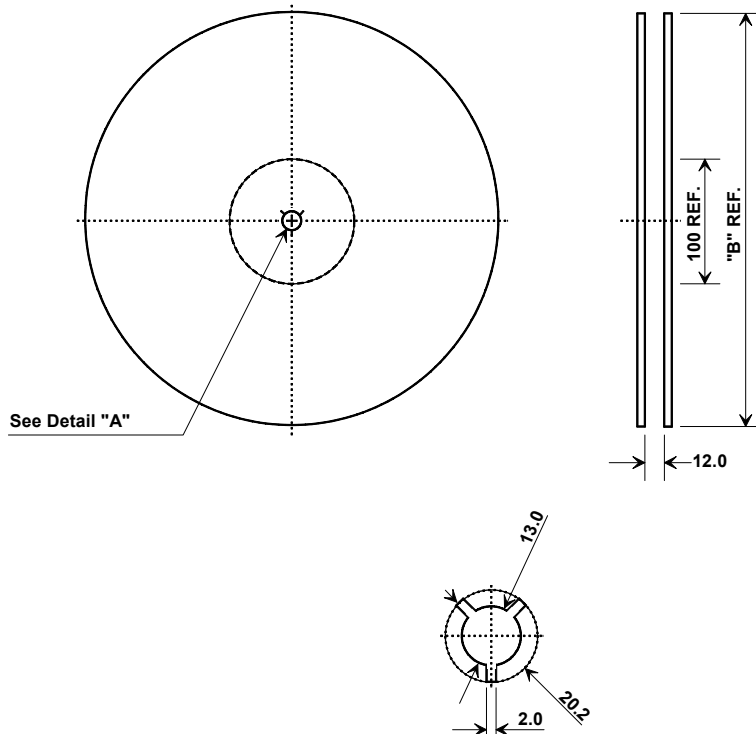


PCB Footprint



## Tape and Reel Specifications

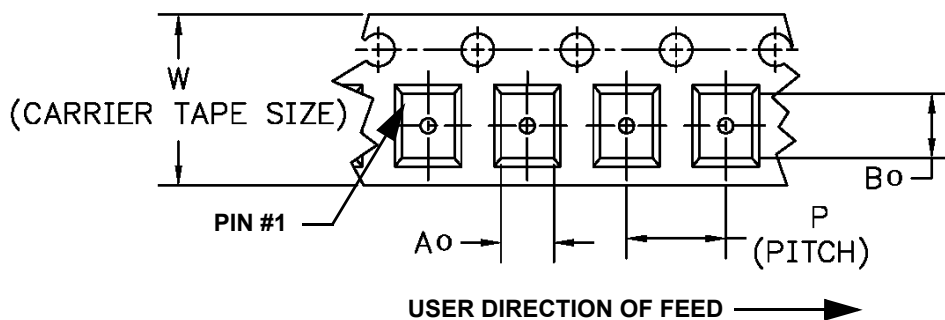
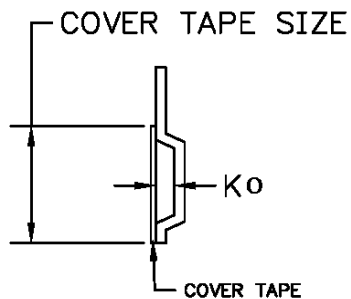
## Tape and Reel Standard per ANSI/EIA-481



| "B"<br>Nominal Size |             | Quantity Per Reel |
|---------------------|-------------|-------------------|
| Inches              | millimeters |                   |
| 7                   | 178         | 500               |
| 13                  | 330         | 3000              |

## COMPONENT ORIENTATION and DIMENSIONS

| Carrier Tape Dimensions |         |
|-------------------------|---------|
| Ao                      | 5.3 mm  |
| Bo                      | 5.3 mm  |
| Ko                      | 2.0 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.

