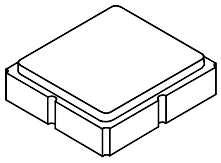
RFMi
A BRAND OF AKOUSTIS

Preliminary

RoHS compliant

# SF2235E

# 1542.5 MHz SAW Filter



SM3030-8

- ***Low-loss SAW Filter***
- ***Complies with Directive 2002/95/EC (RoHS)***
- ***Moisture Sensitivity Level: 1***

**Characteristics:**

Single-ended to Balanced operation

Terminating source/load impedance: 50/150 Ω

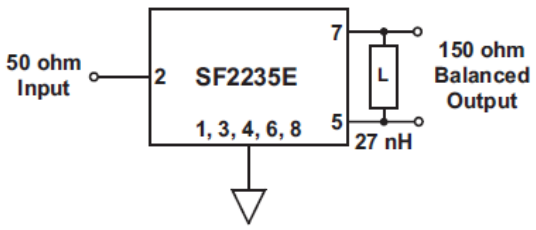
**Maximum Rating**

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

| Characteristic | Sym | Notes | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|
| Center Frequency | $f_C$ | | | 1542.5 | | MHz |
| Insertion Loss, 1525 to 1560 MHz | IL | | | 3.2 | 4.5 | dB |
| Amplitude Ripple, 1525 to 1560 MHz | | | | 0.5 | 2.2 | dB |
| Attenuation, 0 dB Reference: | | | | | | |
| DC to 1480 MHz | | | 21 | 45 | | dB |
| 1630 to 1660 MHz | | | 26 | 38 | | |
| 1660 to 2050 MHz | | | 30 | 39 | | |
| 2050 to 3500 MHz | | | 25 | 48 | | |
| Source Impedance, Single Ended | | | | 50 | | Ω |
| Load Impedance, Balanced | | | 150 Ω \|\| 27 nH | | | |
| Temperature Coefficient of Frequency | | | -36 | | | ppm/°C |

| | |
|---|---|
| Case Style | SM3030-8 3.0 x 3.0 mm Nominal Footprint |
| Lid Symbolization (Y=year, WW=week, S=shift) dot=pin 1 indicator | A06, YWWS |
| Standard Reel Quantity Reel Size 7 inch | 500 Pieces/Reel |
| Reel Size 13 inch | 3000 Pieces/Reel |

**Tuning Network**




**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.

**Maximum Rating**

| Rating | Value | Units |
|---|---|---|
| Input Power Level | +10 | dBm |
| DC Voltage on any Non-ground Terminal | 3 | V |
| Operating Temperature Range | -20 to +75 | °C |
| Storage Temperature Range | -40 to +85 | °C |
| Maximum Soldering Profile, 5 cycles/ 10 seconds maximum | 265 | °C |

| Characteristic | Sym | Notes | Min | Typ | Max | Units |
|---|---|---|---|---|---|---|
| Center Frequency | $f_C$ | | | 1542.5 | | MHz |
| Insertion Loss, 1525 to 1560 MHz | IL | | | 3.2 | 4.2 | dB |
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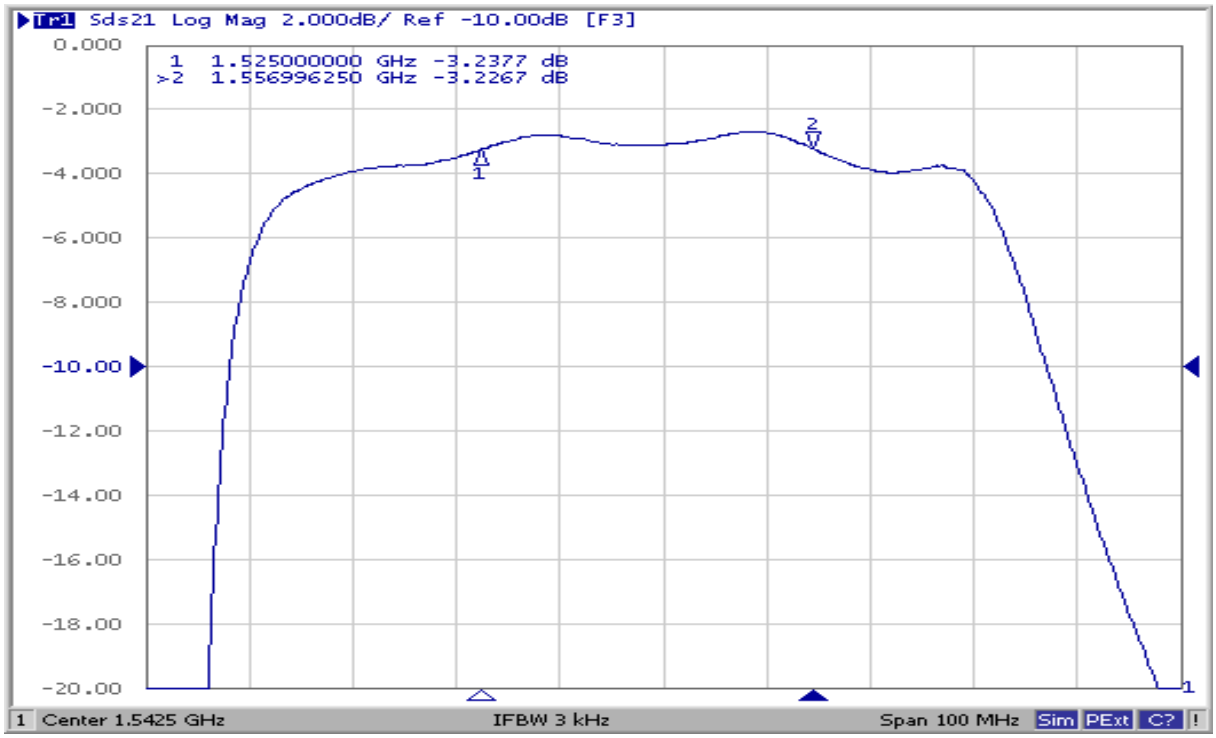
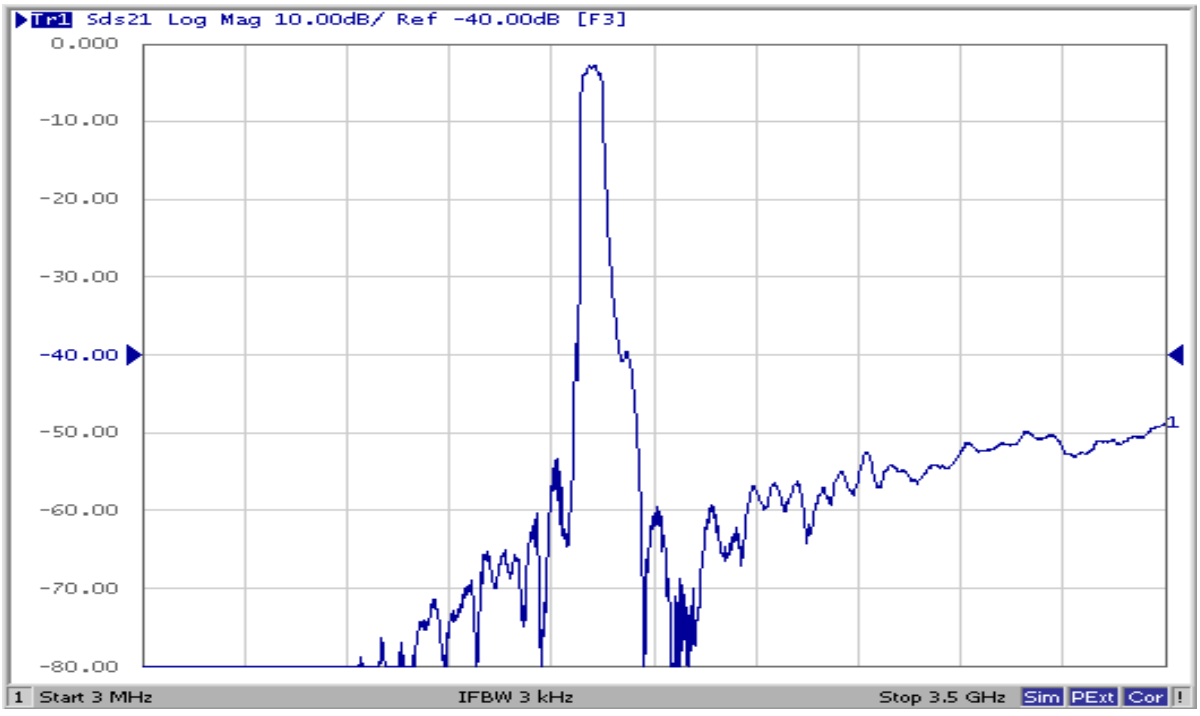
| Load Impedance, Balanced | | | 150 Ω \|\| 27 nH | | | |
| Temperature Coefficient of Frequency | | | -36 | | | ppm/°C |

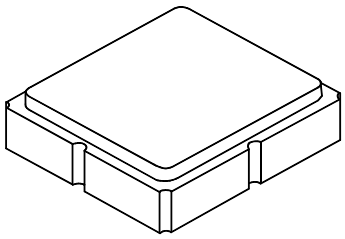
## Filter Response Plots



## Filter Response Plots (cont.)

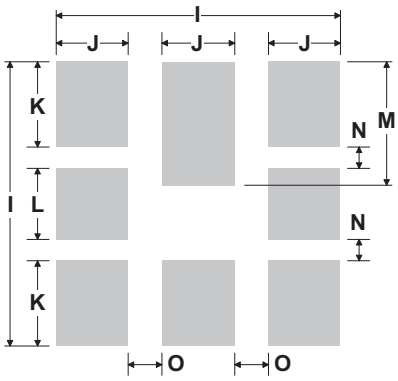



# 8-Terminal Ceramic Surface-Mount Case
# 3.0 X 3.0 mm Nominal Footprint



**Case and PCB Footprint Dimensions**

| Dimension | mm | | | Inches | | |
|---|---|---|---|---|---|---|
| | Min | Nom | Max | Min | Nom | Max |
| A | 2.87 | 3.0 | 3.13 | 0.113 | 0.118 | 0.123 |
| B | 2.87 | 3.0 | 3.13 | 0.113 | 0.118 | 0.123 |
| C | 1.14 | 1.27 | 1.40 | 0.045 | 0.050 | 0.055 |
| D | 0.79 | 0.92 | 1.05 | 0.031 | 0.036 | 0.041 |
| E | 0.62 | 0.75 | 0.88 | 0.024 | 0.029 | 0.034 |
| F | 0.47 | 0.60 | 0.73 | 0.018 | 0.024 | 0.029 |
| G | 0.47 | 0.60 | 0.73 | 0.018 | 0.024 | 0.029 |
| H | 1.07 | 1.20 | 1.33 | 0.042 | 0.047 | 0.052 |
| I | | 3.19 | | | 0.126 | |
| J | | 0.81 | | | 0.032 | |
| K | | 0.96 | | | 0.038 | |
| L | | 0.81 | | | 0.032 | |
| M | | 1.39 | | | 0.055 | |
| N | | 0.23 | | | 0.009 | |
| O | | 0.38 | | | 0.015 | |



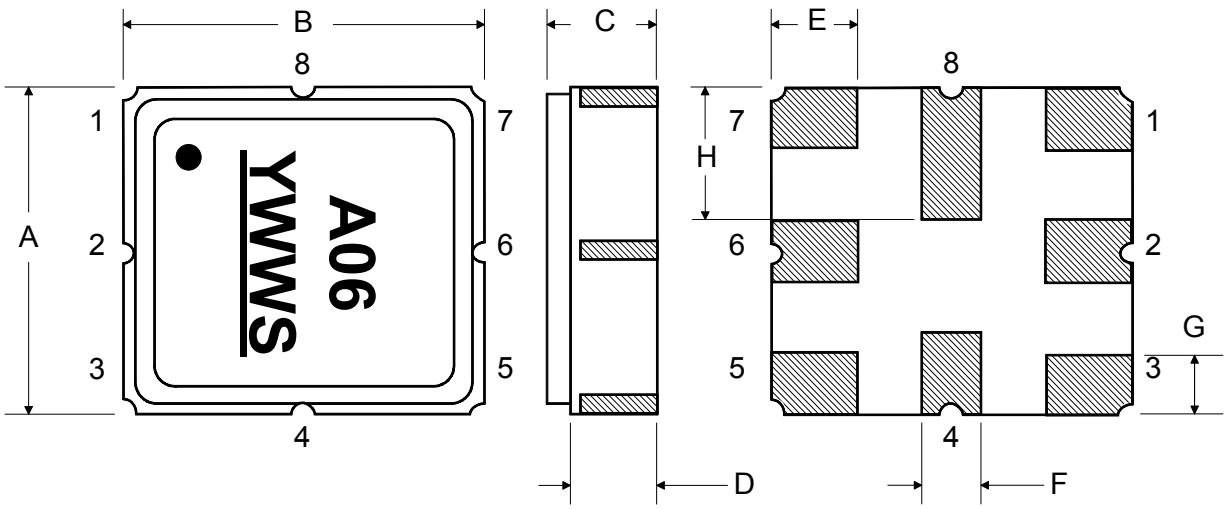

**PCB Footprint Top View**

**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 |

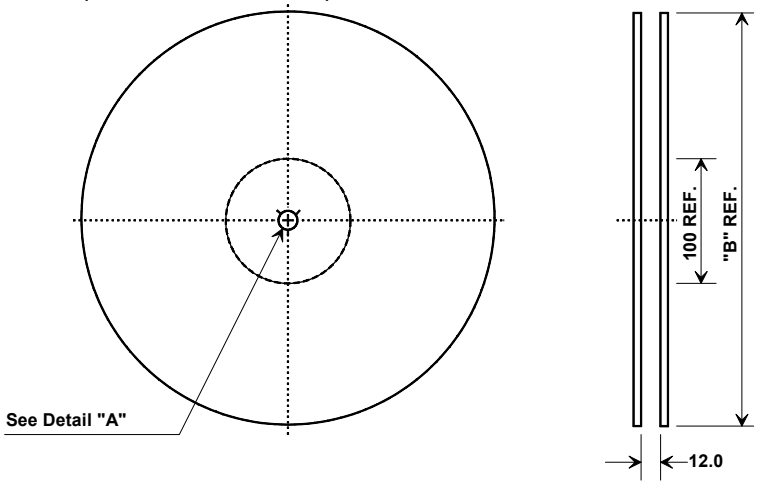
TOP VIEW

BOTTOM VIEW

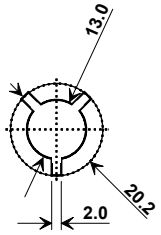


## Tape and Reel Specifications

Tape and Reel Standard per ANSI/EIA-481

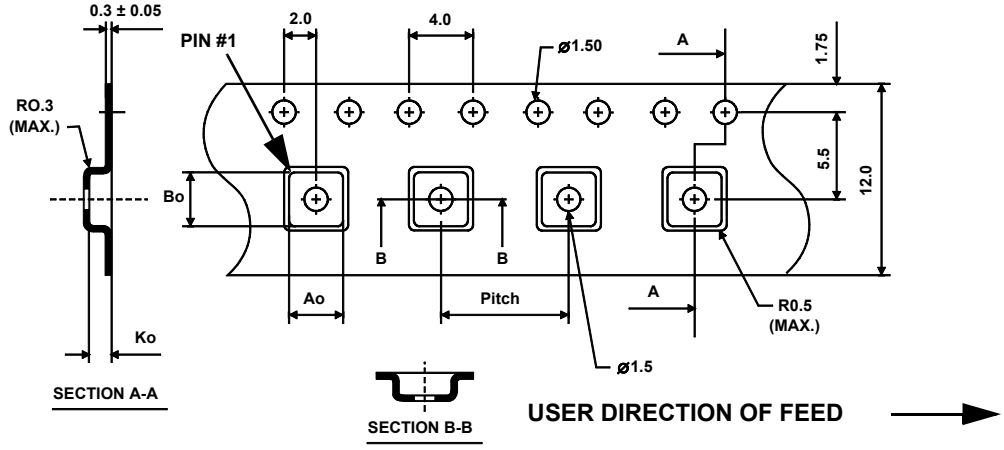



| "B" | | Quantity Per Reel |
|---|---|---|
| Inches | millimeters | |
| 7 | 178 | 500 |
| 13 | 330 | 3000 |




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