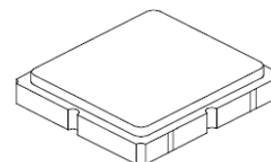


**SF2136E**

**433.92 MHz  
SAW Filter**



**SM3030-6**

- Steep Roll-off Filter for 433.92 MHz Unlicensed Band
- No Matching Required for Operation in 50Ω Environment
- Complies with Directive 2002/95/EC (RoHS)
- Moisture Sensitivity Level: 1

**Absolute Maximum Ratings**

| Rating   | Value      | Units |
|--|------------|-------|
| Input Power Level                                      | 10         | dBm   |
| DC Voltage on any Non-ground Terminal                  | 3          | V     |
| 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    |

**Electrical Characteristics**

| Characteristic                              | Sym   | Notes | Min | Typ    | Max | Units |
|---|-------|-------|-----|--------|-----|-------|
| Center Frequency                            | $f_C$ |       |     | 433.92 |     | MHz   |
| 3 dB Bandwidth                              |       |       |     | 5      |     | MHz   |
| Insertion Loss, 433.05 to 434.79 MHz        | IL    |       |     | 2.0    | 3.3 | dB    |
| Amplitude Ripple, p-p, 433.05 to 434.79 MHz |       |       |     | 0.3    | 1.5 |       |
| Attenuation Referenced to 0 dB:             |       |       |     |        |     |       |
| 389.0 to 392.0 MHz                          |       |       | 42  | 54     |     |       |
| 411.0 to 414.0 MHz                          |       |       | 40  | 50     |     |       |
| 454.0 to 457.0 MHz                          |       |       | 40  | 51     |     |       |
| 475.0 to 478.5 MHz                          |       |       | 42  | 52     |     |       |
| 863.0 to 870.0 MHz                          |       |       | 41  | 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 | 682, <u>YWWS</u>                        |

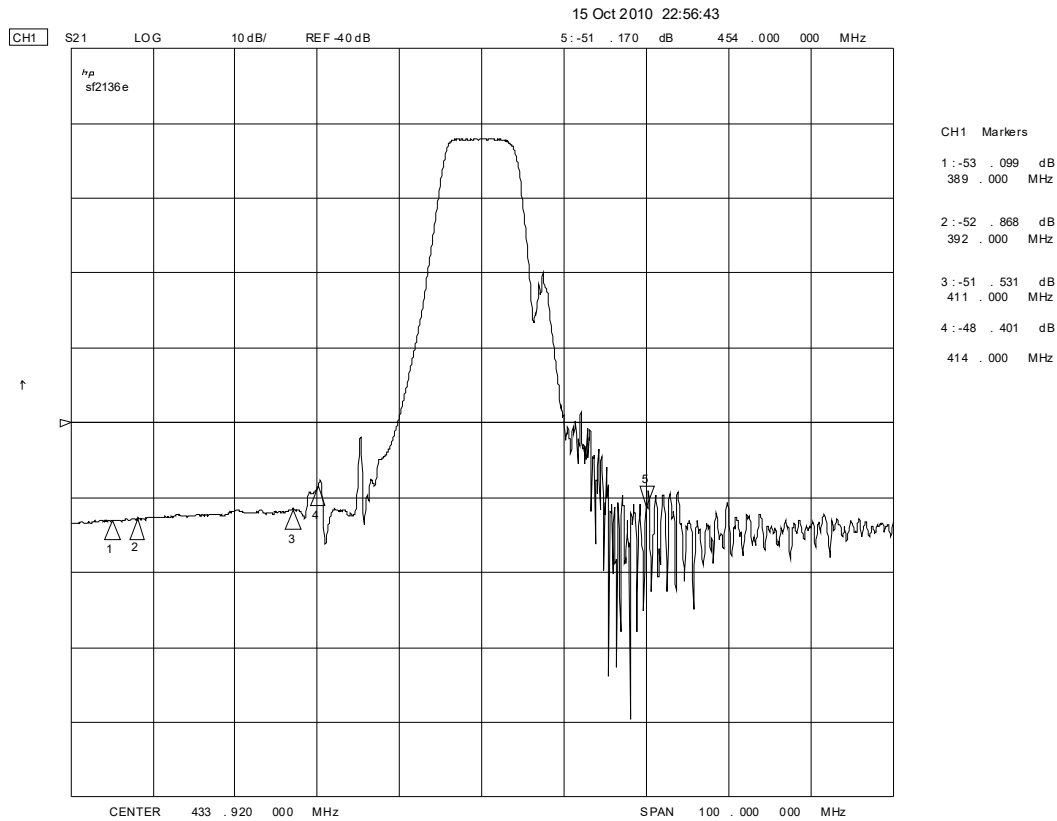
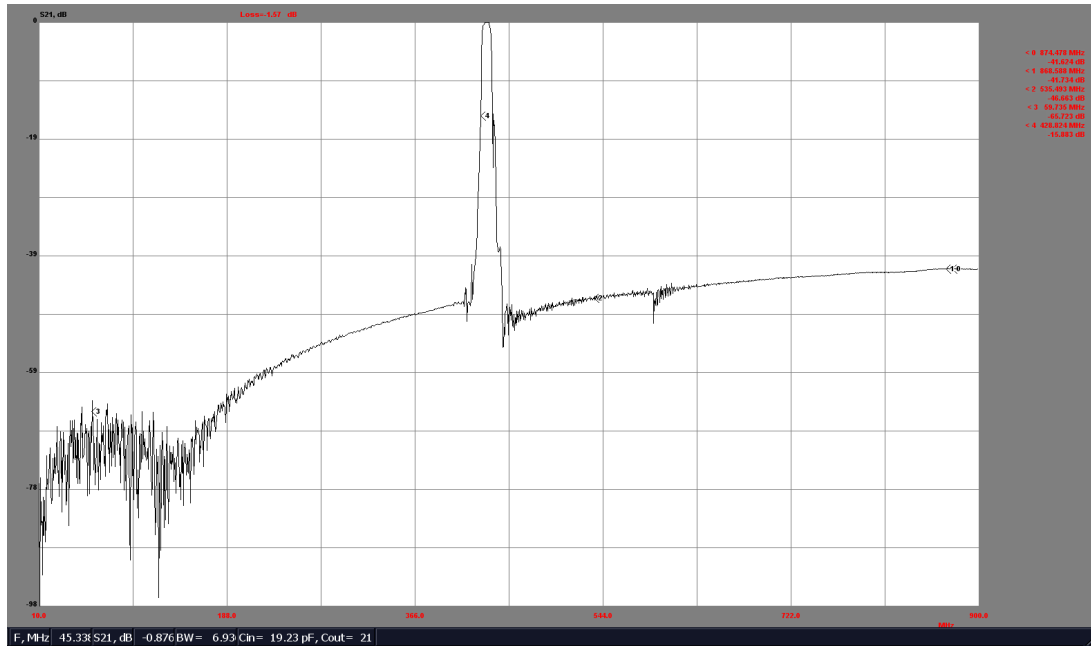
**Electrical Connections**

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

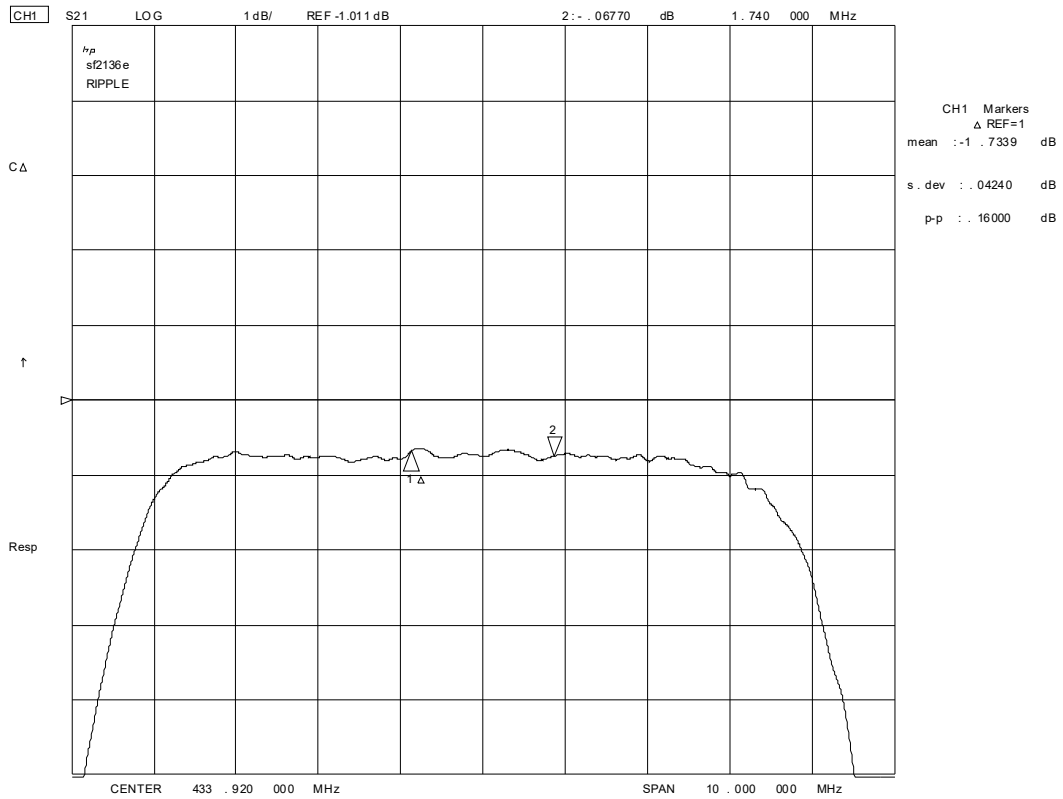
 **CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**  
**NOTES:**

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.

# SF2136E Frequency Response Plots

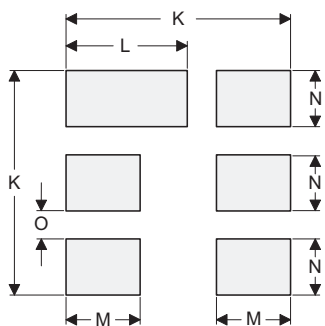
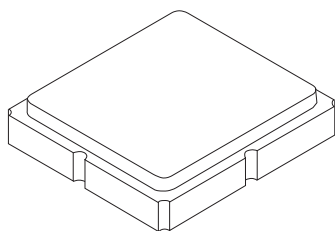


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# SM3030-6 Case

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



PCB Footprint Top View

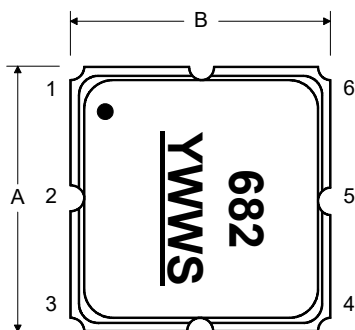
### Case and PCB Footprint Dimensions

| 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 | 1.30 | 0.044  | 0.049 | 0.051 |
| 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 |       |

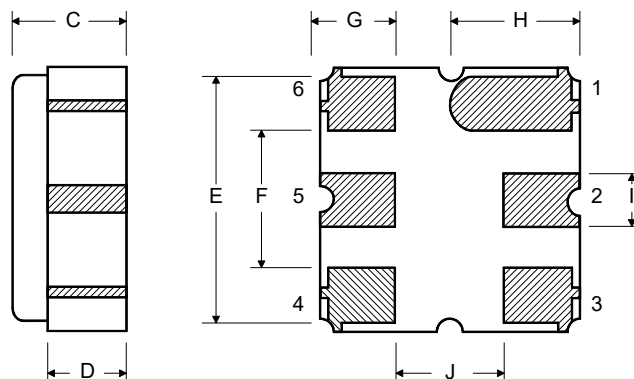
### Case Materials

| 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





## 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.

