

- **SAW Filter for Digital Television**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Moisture Sensitivity Level: 1**

**Characteristics:**

Balance-to-balanced operation

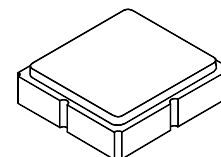
Terminating source/load impedance :  $Z_S = 150 \Omega$

**Maximum Rating**

| 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                               | -50 to +95 | °C    |
| Maximum Soldering Profile, 5 cycles/ 10 seconds maximum | 265        | °C    |

**SF2166E**

**1280.18 MHz**

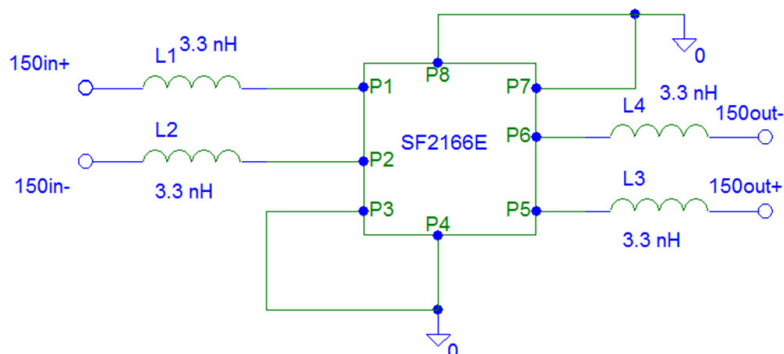


**SM3030-8**

| Characteristic                             | Sym   | Notes | Min | Typ     | Max | Units             |
|--------------------------------------------|-------|-------|-----|---------|-----|-------------------|
| Center Frequency                           | $f_C$ |       |     | 1280.18 |     | MHz               |
| Insertion Loss, 1260.18 to 1300.18 MHz     | IL    |       |     | 3.2     | 4.5 | dB                |
| Amplitude Ripple, 1260.18 to 1300.18 MHz   |       |       |     | 1.0     | 2.3 | dB                |
| Group Delay Ripple, 1260.18 to 1300.18 MHz |       |       |     | 20      | 30  | ns <sub>p-p</sub> |
| Attenuation, 0 dB Reference:               |       |       |     |         |     |                   |
| 100 to 1198.12 MHz                         |       |       | 47  | 50      |     | dB                |
| 1362.24 to 2000 MHz                        |       |       | 45  | 55      |     |                   |
| 2000 to 6000 MHz                           |       |       | 30  | 40      |     |                   |

|                                                                  |                                         |
|------------------------------------------------------------------|-----------------------------------------|
| Case Style                                                       | SM3030-8 3.0 x 3.0 mm Nominal Footprint |
| Lid Symbolization (Y=year, WW=week, S=shift) dot=pin 1 indicator | 858, YWWS                               |

**Tuning Network, 150 ohm Balanced Source/Load**

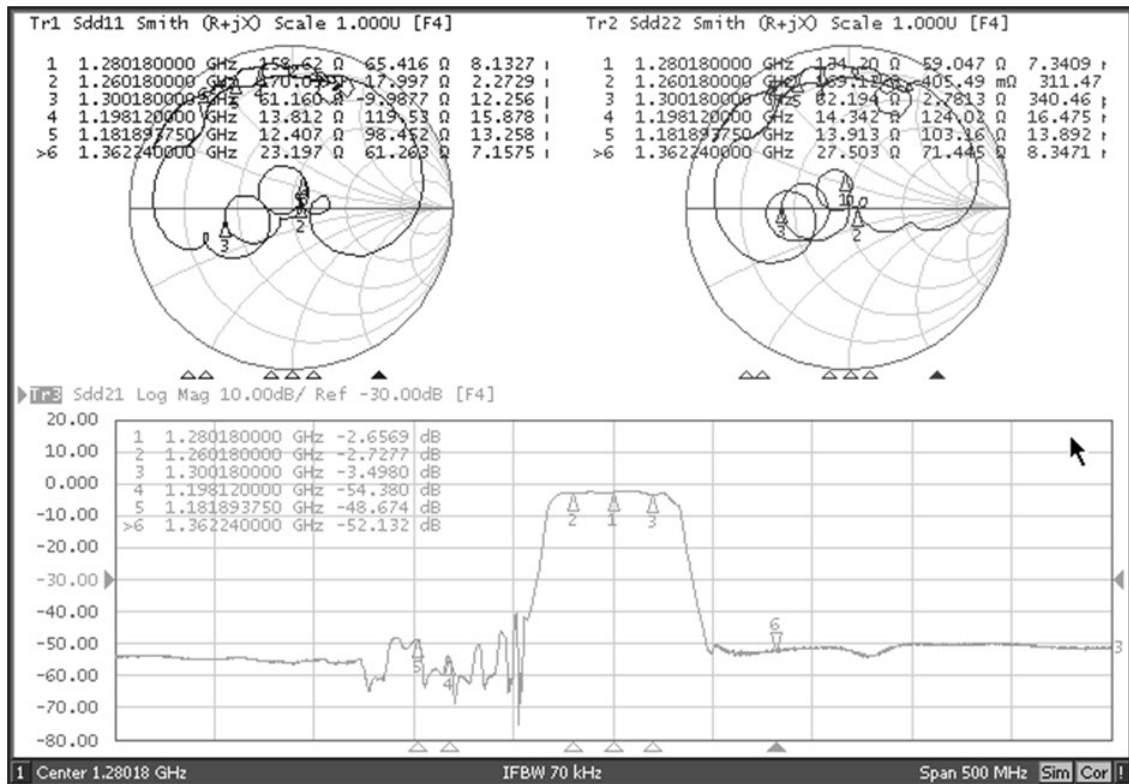


**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

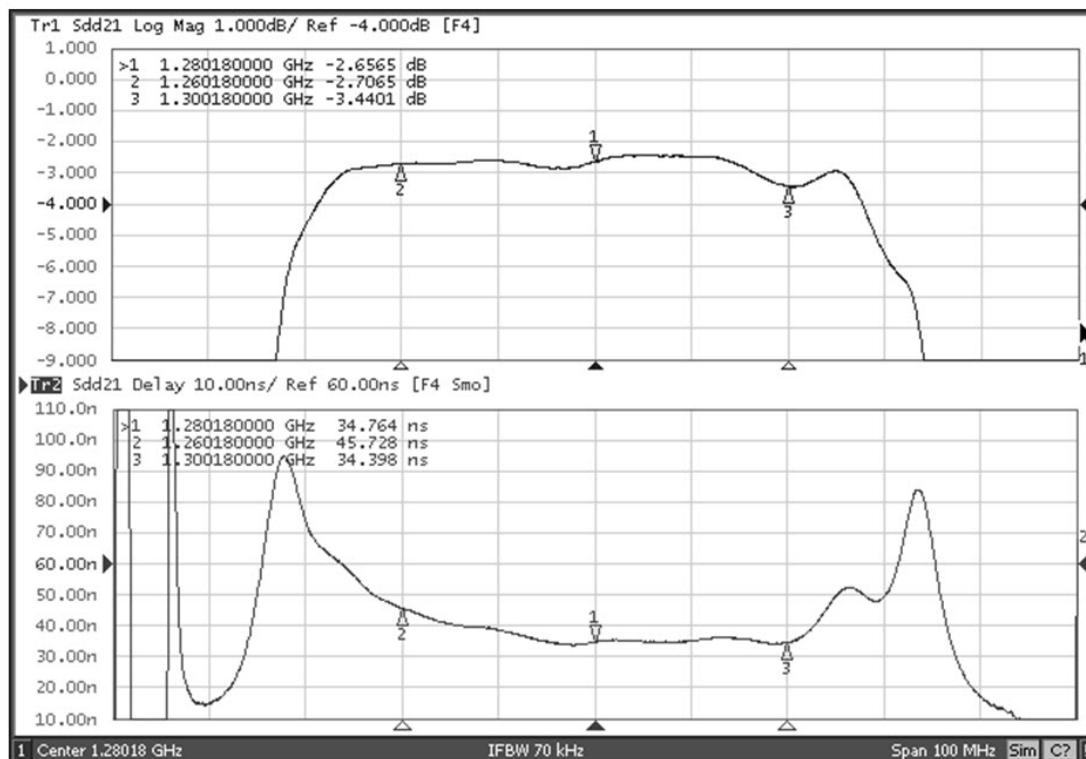
**NOTES:**

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 S21, S11 and S22 Plots

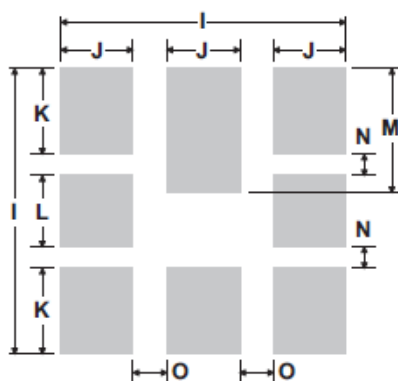
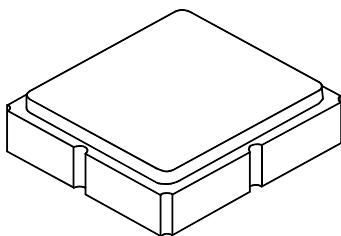


## Filter Passband and Group Delay Plot



## 8-Terminal Ceramic Surface-Mount Case

### 3.0 X 3.0 mm Nominal Footprint



PCB Footprint Top View

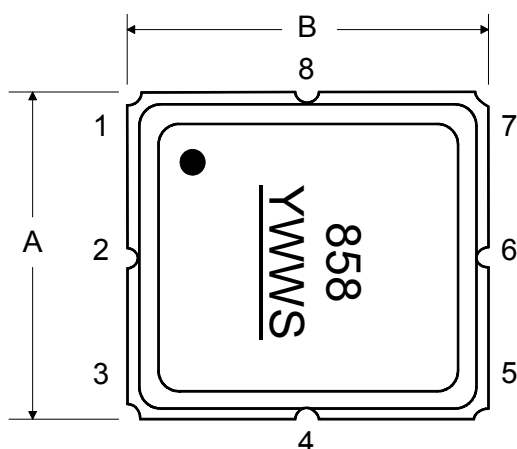
Case and PCB Footprint Dimensions

| Dimension | mm   |      |      | Inches |       |       |
|-----------|------|------|------|--------|-------|-------|
|           | Min  | Nom  | Max  | Min    | Nom   | Max   |
| A         | 2.87 | 3.0  | 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 | -     |

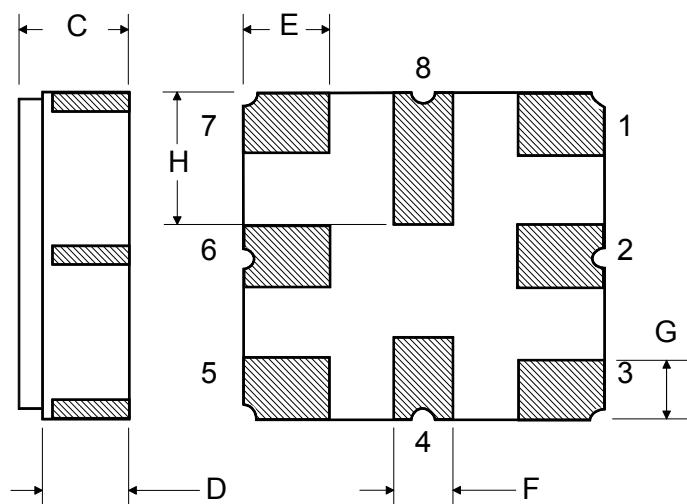
Case Materials

| 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

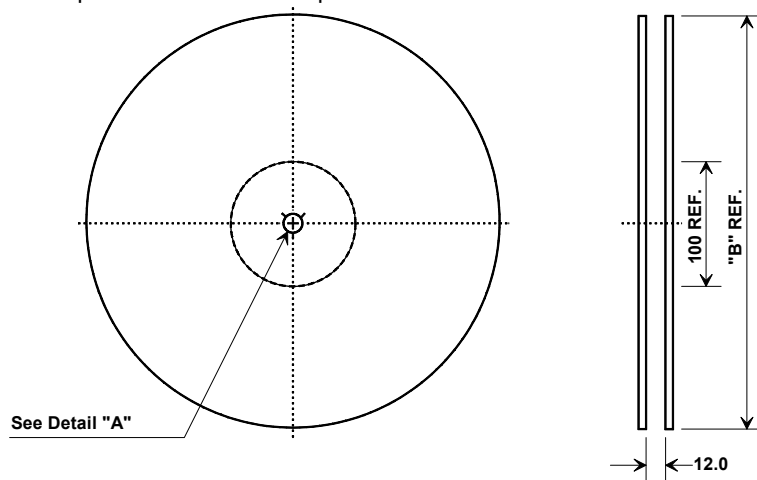


BOTTOM VIEW

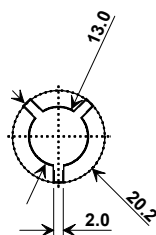


## Tape and Reel Specifications

Tape and Reel Standard per ANSI/EIA-481

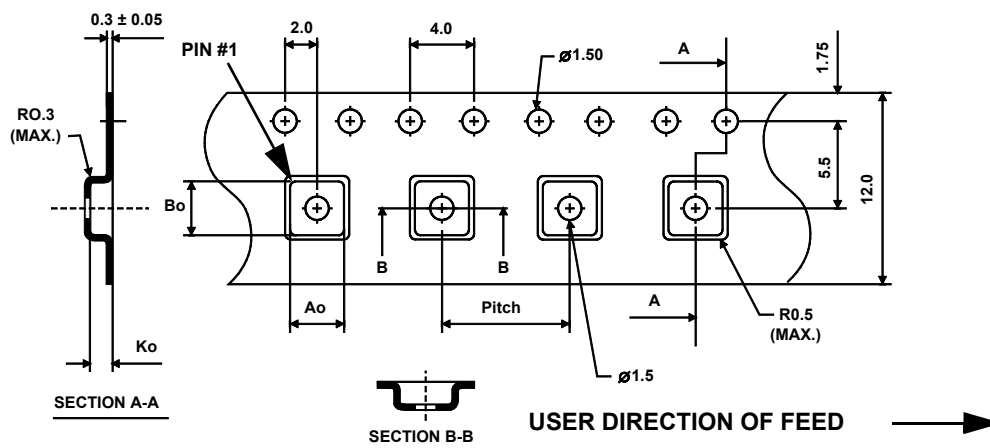


| “B”    |             | Quantity Per Reel |
|--------|-------------|-------------------|
| Inches | millimeters |                   |
| 7      | 178         | 500               |
| 13     | 330         | 3000              |



## 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.

