



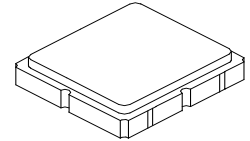
- **Hermetically sealed Surface Mount package**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Moisture Sensitivity Level: 1**

**Absolute Maximum Ratings**

| Rating                | Value      | Units |
|-----------------------|------------|-------|
| Maximum Input Power   | 10         | dBm   |
| DC Voltage            | 10         | VDC   |
| Operating Temperature | -40 to +85 | °C    |
| Storage Temperature   | -40 to +85 | °C    |

**SF2424D**

**505 MHz  
SAW Filter**



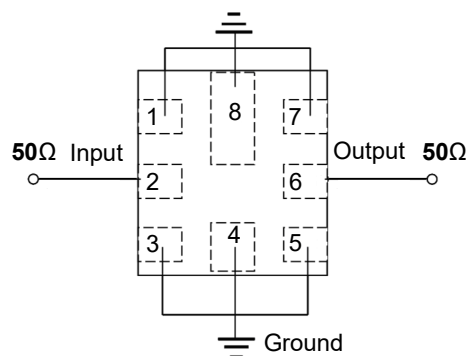
**SM3838-8**

**Electrical Characteristics**

| Characteristic                               | Sym   | Notes         | Minimum          | Typical | Maximum | Units    |                  |    |    |
|--|-------|---------------|------------------|---------|---------|----------|------------------|----|----|
| Center Frequency                             | $f_c$ |               |                  | 505     |         | MHz      |                  |    |    |
| Insertion Loss                               | IL    | 500 - 508 MHz |                  | 2.6     | 4.1     | dB       |                  |    |    |
|  |       | 500 - 510 MHz |                  | 2.8     | 4.1     |          |                  |    |    |
| Amplitude Ripple                             |       | 500 - 508 MHz |                  | 0.5     | 2.5     | dB       |                  |    |    |
|  |       | 500 - 510 MHz |                  | 0.6     | 2.5     |          |                  |    |    |
| Attenuation (Reference level from 0dB)       |       |               |                  |         |         | dB       |                  |    |    |
|  |       |               |                  |         |         |          | 404 to 463.2 MHz | 42 | 50 |
|  |       |               |                  |         |         |          | 544 to 604 MHz   | 42 | 48 |
| Temperature Coefficient of Frequency         |       |               |                  | -36     |         | ppm/k    |                  |    |    |
| Terminating Source Impedance (single) $Z_S$  |       |               |                  | 50      |         | $\Omega$ |                  |    |    |
| Terminating Load Impedance (single) $Z_L$    |       |               |                  |         |         |          |                  |    |    |
| Footprint Size: 3.8 X 3.8                    |       |               | SM3838-8         |         |         |          |                  |    |    |
| Lid Symbolization (Y=Year, WW=week, S=shift) |       |               | B38, <u>YWWS</u> |         |         |          |                  |    |    |

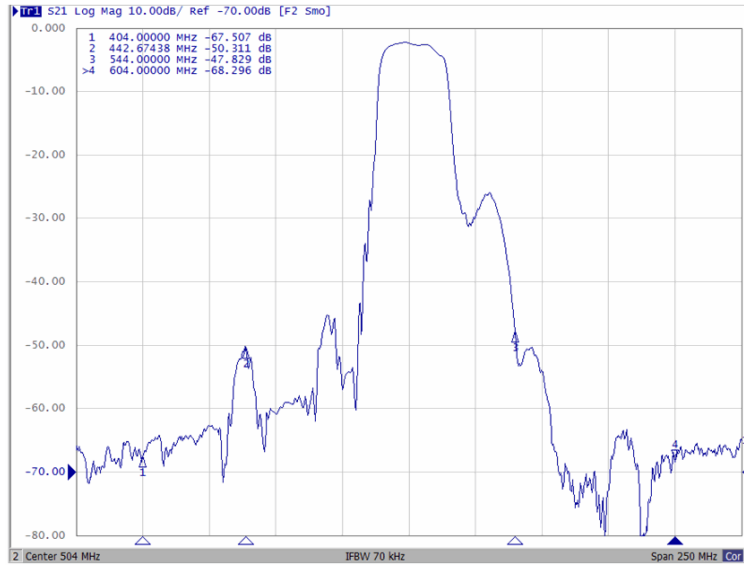
**Electrical Connections**

| Connection | Terminals  |
|------------|------------|
| Input      | 2          |
| Output     | 6          |
| Ground     | All Others |

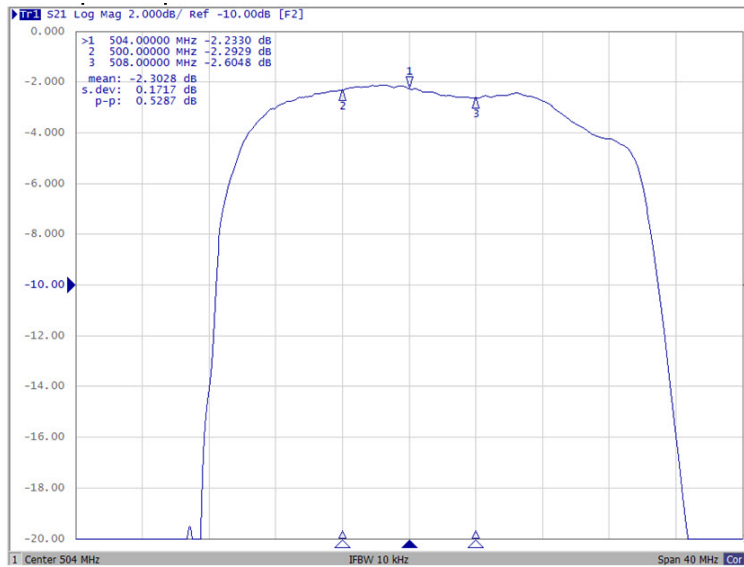


# Frequency Characteristics

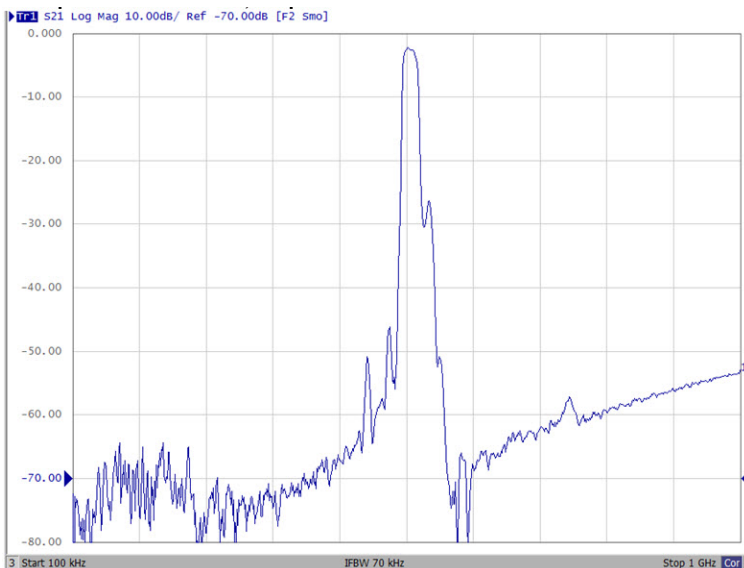
## S21 Response: Center 504 MHz, Span 250 MHz



## S21 Response: Span 40 MHz



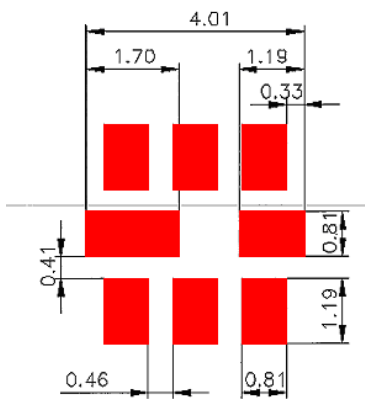
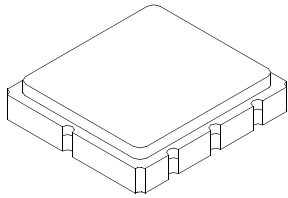
## S21 Response: 0 - 1000 MHz



# SM3838-8 Case

## 8-Terminal Ceramic Surface-Mount Case

### 3.8 X 3.8 mm Nominal Footprint



PCB Footprint

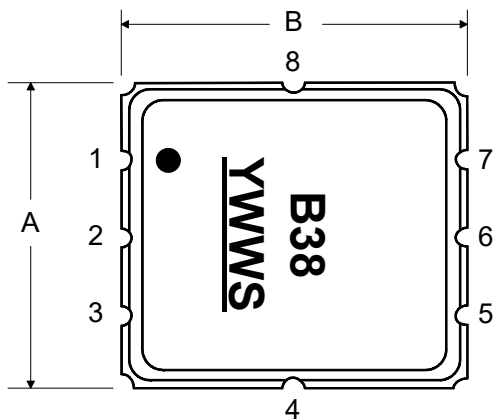
| Case Dimensions |      |      |      |        |       |       |
|-----------------|------|------|------|--------|-------|-------|
| Dimension       | mm   |      |      | Inches |       |       |
|                 | Min  | Nom  | Max  | Min    | Nom   | Max   |
| A               | 3.65 | 3.80 | 3.95 | 0.143  | 0.149 | 0.155 |
| B               | 3.65 | 3.80 | 3.95 | 0.143  | 0.149 | 0.155 |
| C               | -    | -    | 1.40 | -      | -     | 0.055 |
| D               | 0.95 | 1.10 | 1.25 | 0.037  | 0.043 | 0.049 |
| E               | 0.90 | 1.00 | 1.10 | 0.035  | 0.040 | 0.043 |
| F               | 0.50 | 0.60 | 0.70 | 0.020  | 0.024 | 0.028 |
| G               | 2.39 | 2.54 | 2.69 | 0.090  | 0.100 | 0.110 |
| H               | 1.40 | 1.75 | 2.05 | 0.055  | 0.069 | 0.080 |
| I               | 0.90 | 1.00 | 1.10 | 0.035  | 0.040 | 0.043 |

| Electrical Connections |            |            |
|------------------------|------------|------------|
|                        | Connection | Terminals  |
| Port 1                 | Input      | 2          |
| Port 2                 | Output     | 6          |
|                        | Ground     | All Others |

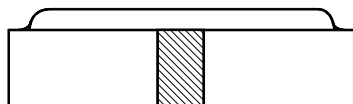
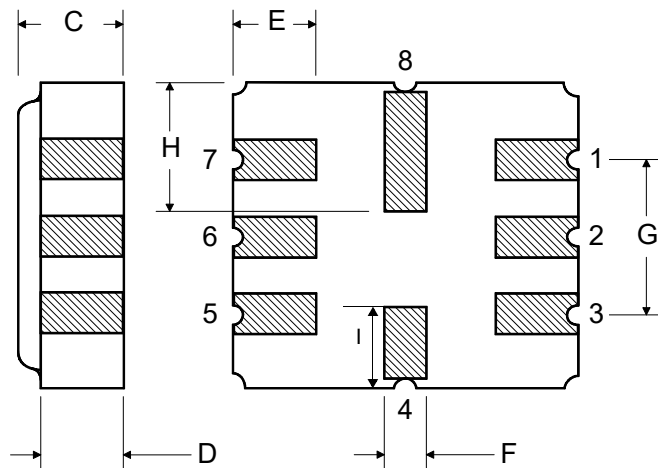
Dot Indicates Pin 1

| Materials              |   |
|------------------------|---|
| Solder Pad Termination | Au plating 30 - 60 $\mu$ Inches (76.2-152 $\mu$ M) over 80-200 $\mu$ Inches (203-508 $\mu$ M) Ni. |
| Lid                    | Fe-Ni-Co Alloy Electroless Nickel Plate (8-11% Phosphorus) 100-200 $\mu$ Inches Thick             |
| Body                   | Al <sub>2</sub> O <sub>3</sub> Ceramic  |

TOP VIEW

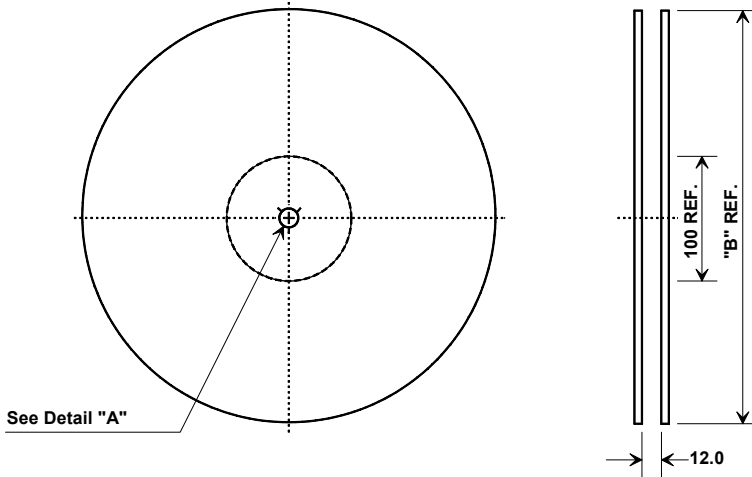


BOTTOM VIEW

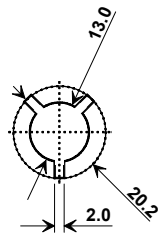


## Tape and Reel Specifications

Tape and Reel Standard per ANSI/EIA-481

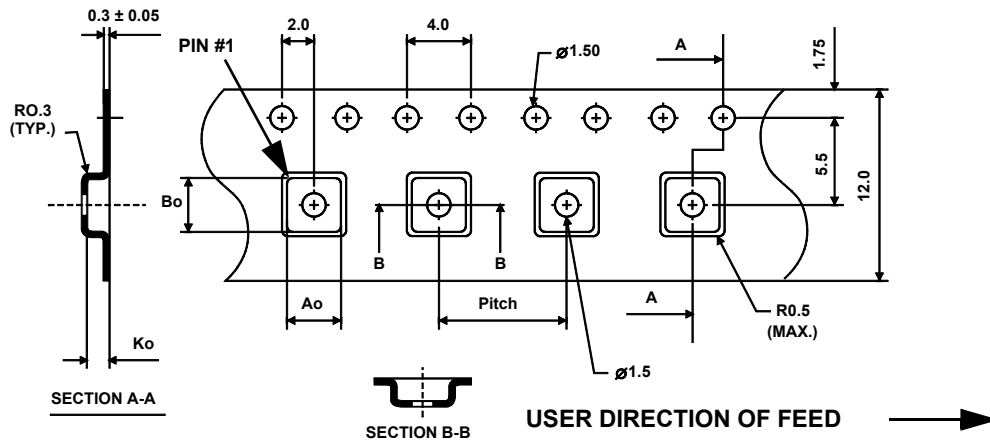


| "B" Nominal Size |             | Quantity Per Reel |
|------------------|-------------|-------------------|
| Inches           | millimeters |                   |
| 7                | 178         | 500               |
| 13               | 330         | 3000              |



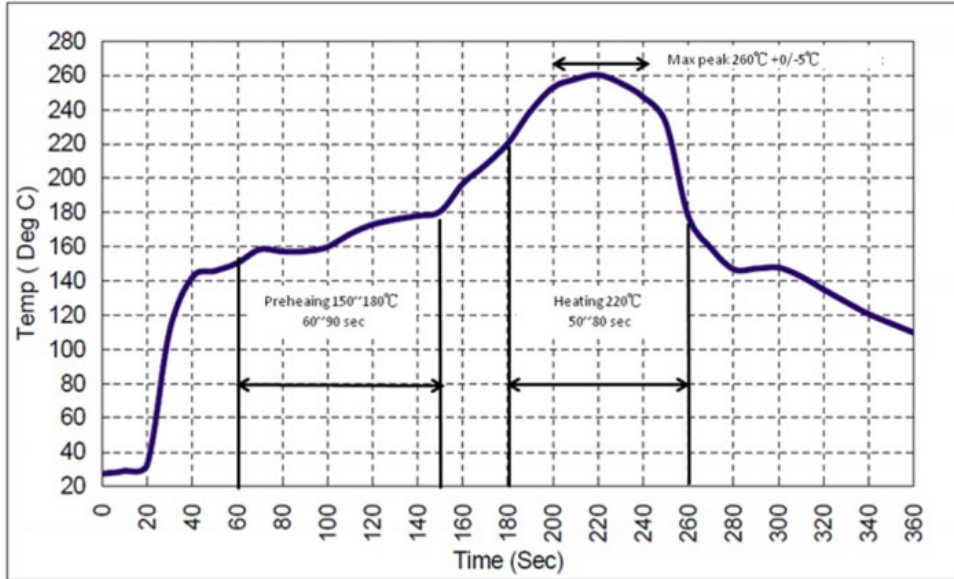
### COMPONENT ORIENTATION and DIMENSIONS

| Carrier Tape Dimensions |         |
|-------------------------|---------|
| Ao                      | 4.25 mm |
| Bo                      | 4.25 mm |
| Ko                      | 1.30 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.



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