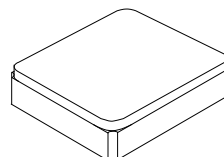


**SF2385H**

**1587.5 MHz**  
**SAW Filter**



**SM2016-4**

- *Designed for Front End GPS, Beidou, and Glonass Applications*
- *Steep Rejection*
- *2.0 x 1.6 x 1.0 mm Surface-Mount Case*
- *No Matching Circuit Required*
- *Complies with Directive 2002/95/EC (RoHS)*
- *Moisture Sensitivity Level: 1*
- *AEC-Q200 Qualified*

**Absolute Maximum Ratings**

| Rating  | Value           | Units |
|---|-----------------|-------|
| Maximum Input Power                             | +20             | dBm   |
| DC Voltage                                      | 5               | VDC   |
| Operable Temperature Range                      | -45 to +125     | °C    |
| Operating Temperature                           | -40 to +105     | °C    |
| Storage Temperature Range in Tape and Reel      | -40 to +85      | °C    |
| Storage Temperature Range without Tape and Reel | -40 to +105     | °C    |
| Maximum Soldering Profile (5 cycles maximum)    | 260 °C for 10 s |       |

**Electrical Characteristics**

| Characteristic 25°C  | Sym                 | Min | Typ               | Max | Units |
|--|---------------------|-----|-------------------|-----|-------|
| Center Frequency   | f <sub>C</sub>      |     | 1587.5            |     | MHz   |
| Insertion Loss, 1559 to 1616 MHz                                       |                     |     | 2.0               | 2.5 | dB    |
| Amplitude Ripple, 1559 to 1616 MHz                                     |                     |     | 1.0               | 1.8 | dB    |
| Group Delay Ripple 1597.78 to 1605.66 MHz (with 2 MHz sliding windows) |                     |     | 2                 | 6   | ns    |
| VSWR 1559 to 1616 MHz  |                     |     | 2.0               | 2.5 |       |
| Attenuation Referenced to 0 dB:  |                     |     |                   |     |       |
| 10 to 1300 MHz   |                     | 40  | 45                |     | dB    |
| 1300 to 1490 MHz   |                     | 30  | 35                |     |       |
| 1490 to 1525 MHz   |                     | 23  | 28                |     |       |
| 1650 to 1660 MHz   |                     | 30  | 35                |     |       |
| 1660 to 1840 MHz   |                     | 35  | 40                |     |       |
| 1840 to 2000 MHz   |                     | 35  | 40                |     |       |
| 2000 to 2500 MHz   |                     | 30  | 35                |     |       |
| Source impedance   | Z <sub>S</sub>      | 50  |                   |     | Ω     |
| Load impedance   | Z <sub>L</sub>      | 50  |                   |     | Ω     |
| Standard Reel Quantity   | Reel Size - 7 inch  |     | 2000 pieces/reel  |     |       |
|  | Reel Size - 13 inch |     | 10000 pieces/reel |     |       |

|   |   |
|---|---|
| Single-ended Input / Output Impedance Match | No matching network required for operation at 50 ohms |
| Package Size                                | SM2016-4  |
| Lid Symbolization (Y=year, W=week)          | 6P, <u>YW</u>   |

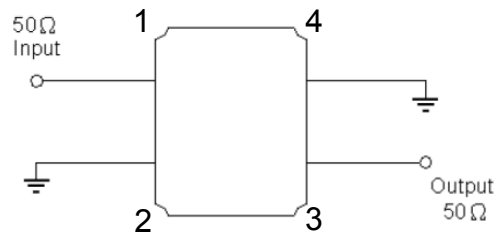
 **CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

**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.

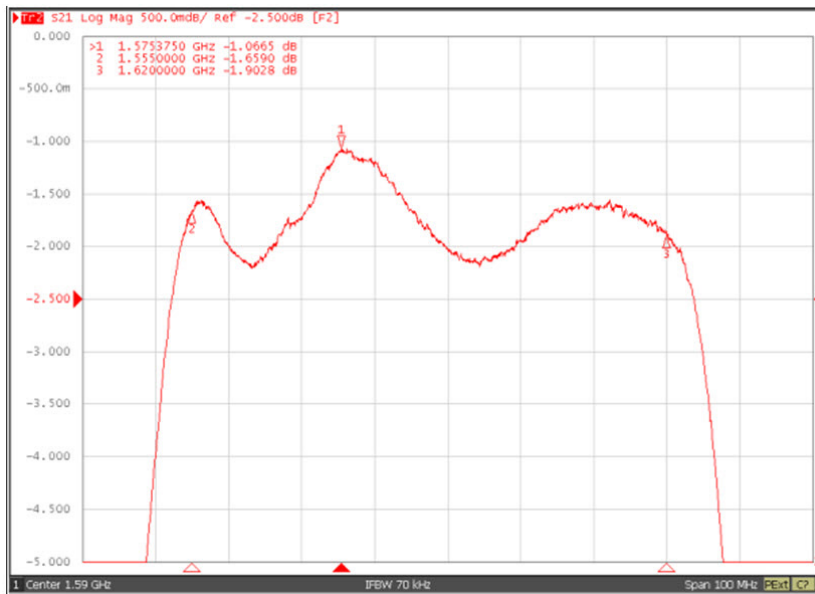
## Electrical Connections

| Connection | Terminals |
|------------|-----------|
| Input      | 1         |
| Output     | 3         |
| Ground     | 2, 4      |

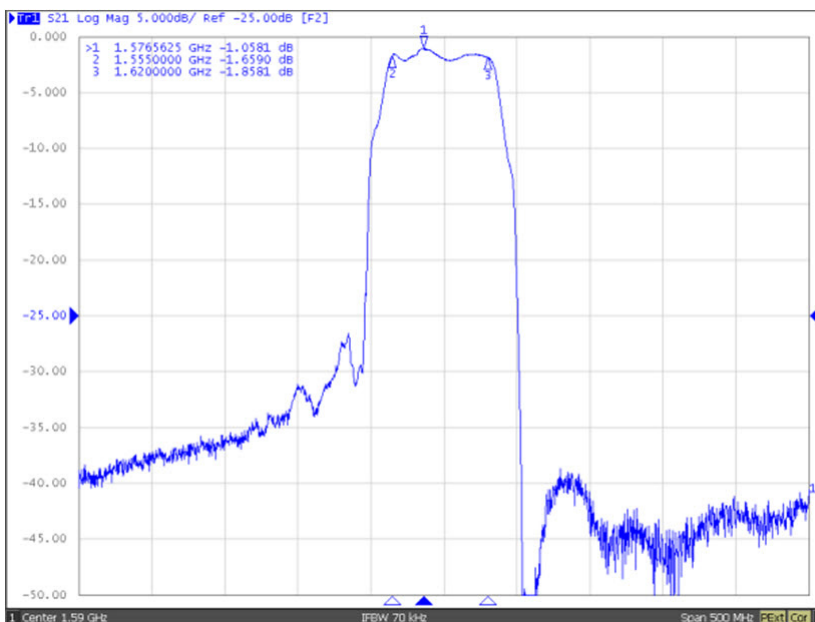


## Frequency Characteristics

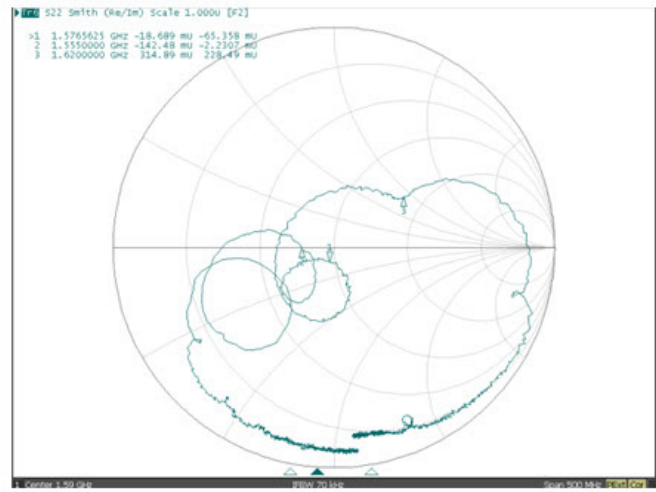
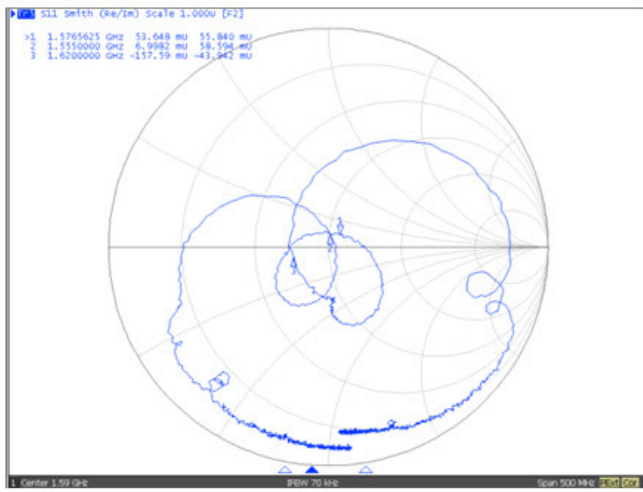
### S21 Response: span 100 MHz



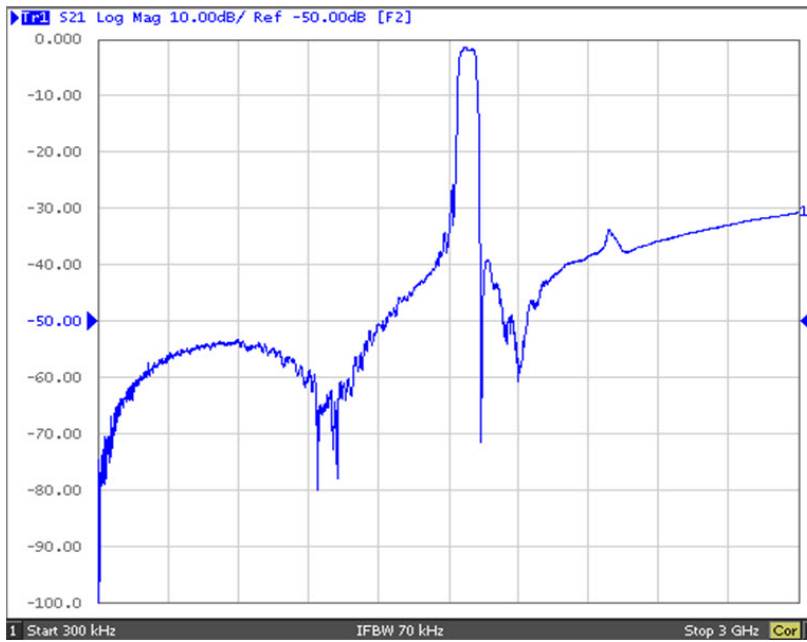
### S21 Response: span 500 MHz



## S11/S22 Response



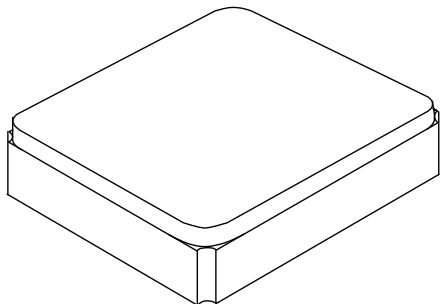
## S21 Response: (span 3GHz)



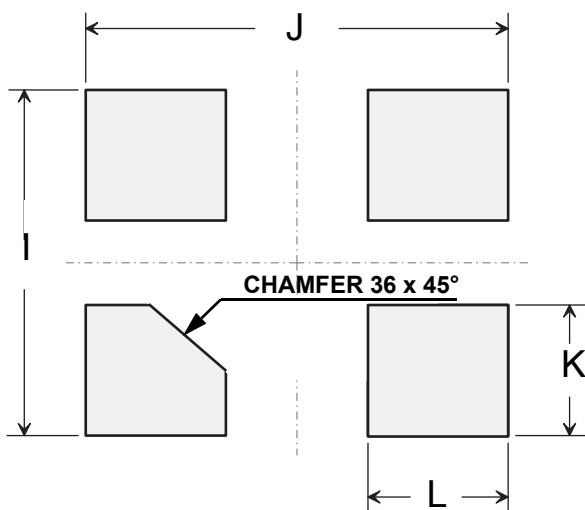
# SM2016-4 Case

## 4-Terminal Ceramic Surface-Mount Case

2.0 X 1.6 mm Nominal Footprint



PCB PAD LAYOUT



Dimensions in mm

All pads have the same dimensions

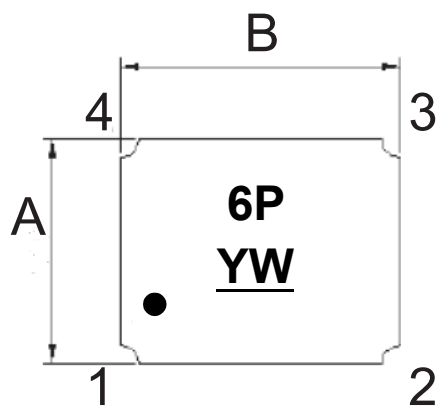
Case Dimensions

| Dimension | mm   |      |      |
|-----------|------|------|------|
|           | Min  | Nom  | Max  |
| A         | 1.57 | 1.60 | 1.73 |
| B         | 1.97 | 2.00 | 2.13 |
| C         | 0.55 | 0.65 | 0.75 |
| D         | -    | 0.10 | -    |
| E         | -    | 0.10 | -    |
| F         | -    | 0.70 | -    |
| G         | -    | 0.50 | -    |
| H         | -    | 0.10 | -    |
| I         | -    | 1.80 | -    |
| J         | -    | 2.20 | -    |
| K         | -    | 0.60 | -    |
| L         | -    | 0.80 | -    |

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                   |

Top View



Bottom View

