



AEC-Q200

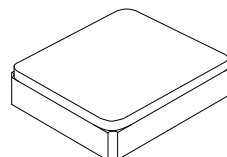
This component was always RoHS compliant from the first date of manufacture.

- **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)**



**SF2385H**

**1587.5 MHz  
SAW Filter**



**SM2016-4**

#### 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	fC		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 (Note 2)			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, YW



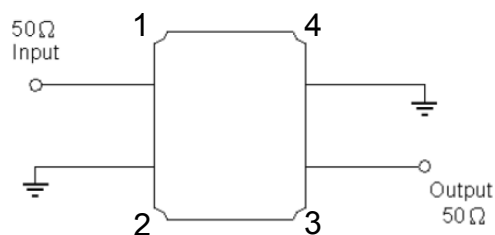
**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

#### NOTES:

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.

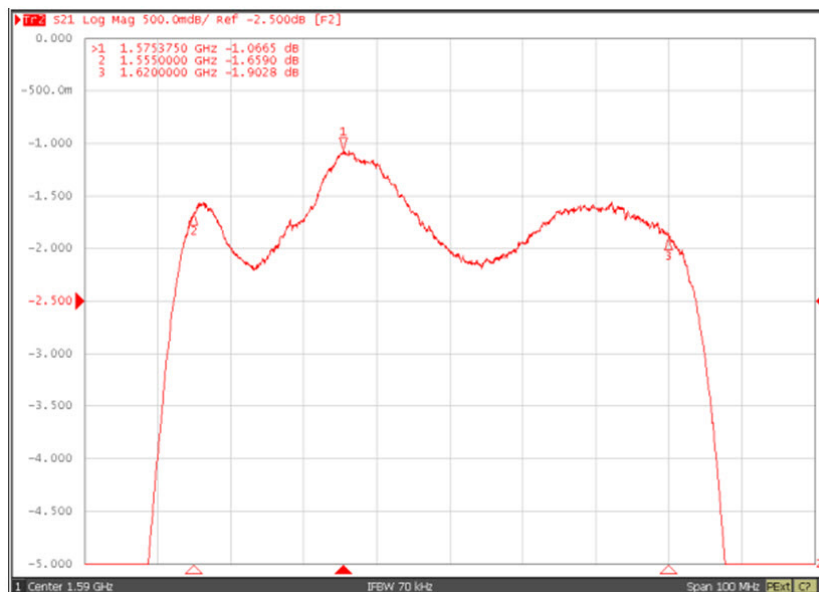
## Electrical Connections

Connection	Terminals
Input	1
Output	3
Ground	2, 4

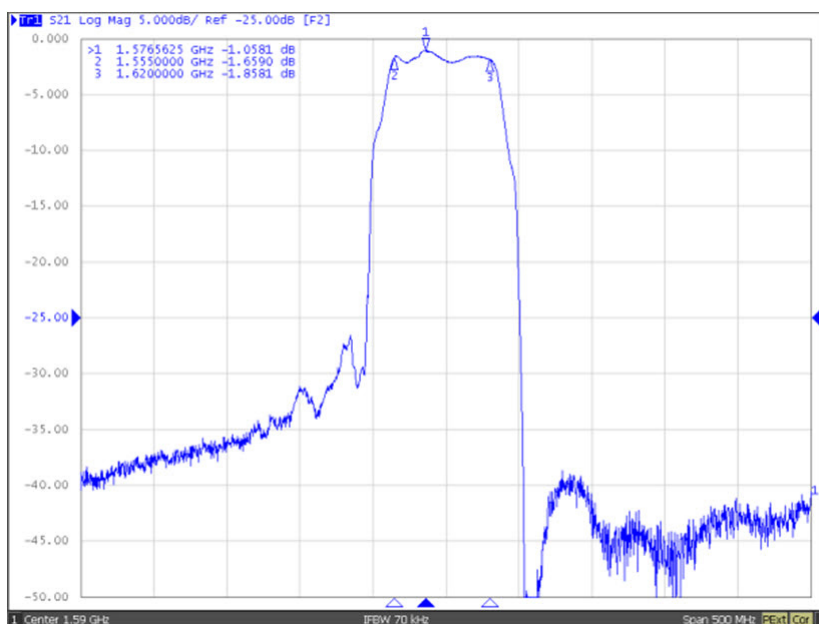


## Frequency Characteristics

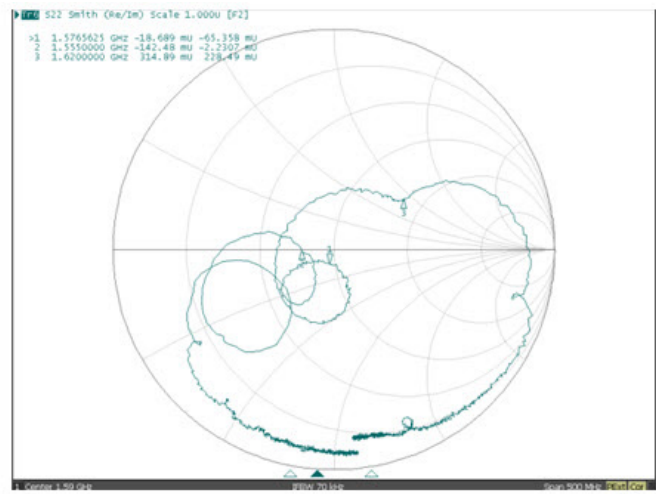
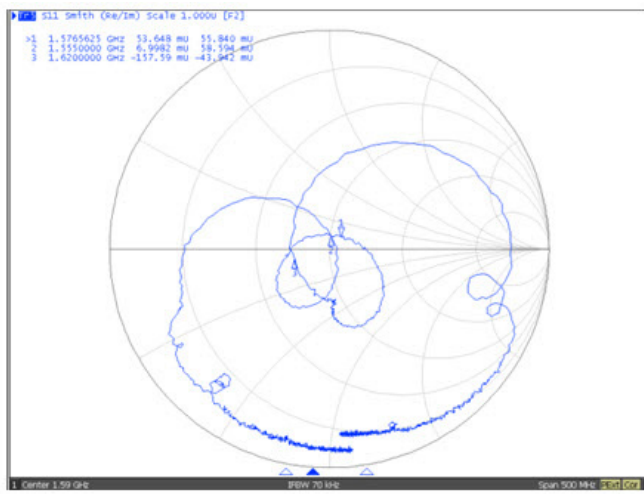
### S21 Response: span 100 MHZ



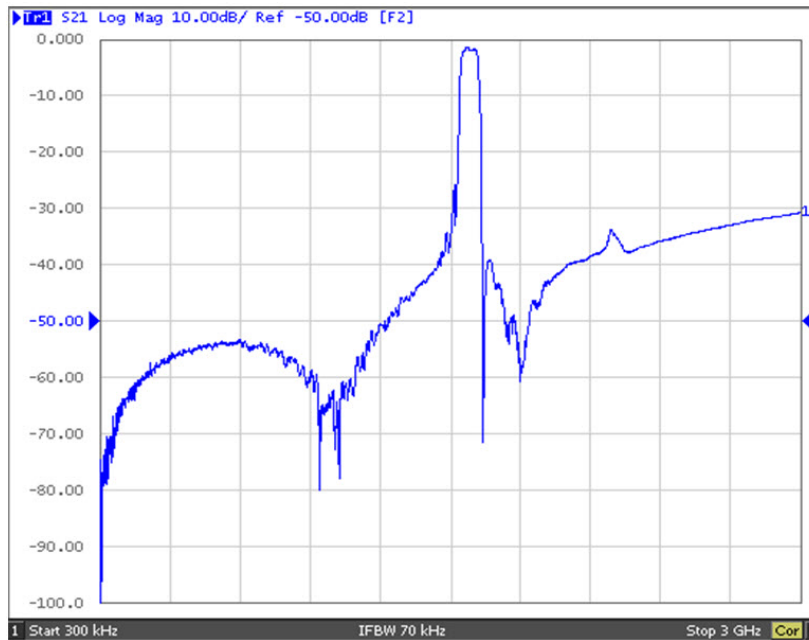
### S21 Response: span 500 MHZ



## S11/S22 Response



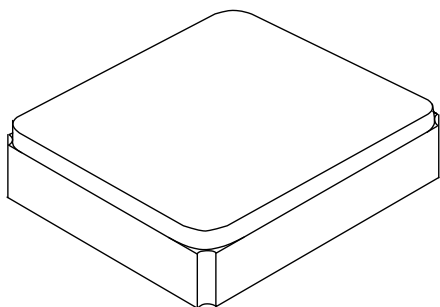
## S21 Response: (span 3GHz)



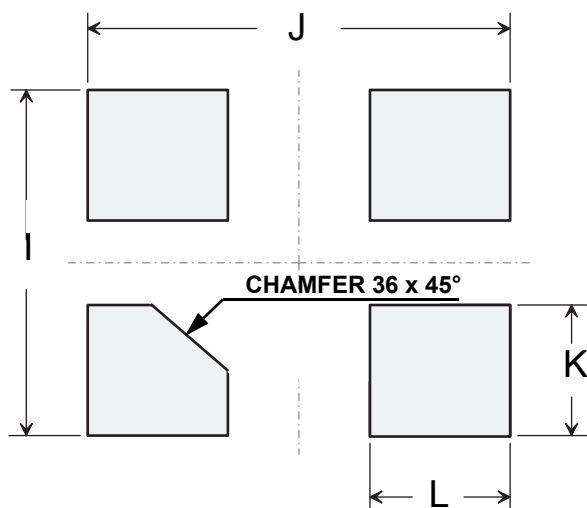
# SM2016-4 Case

## 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

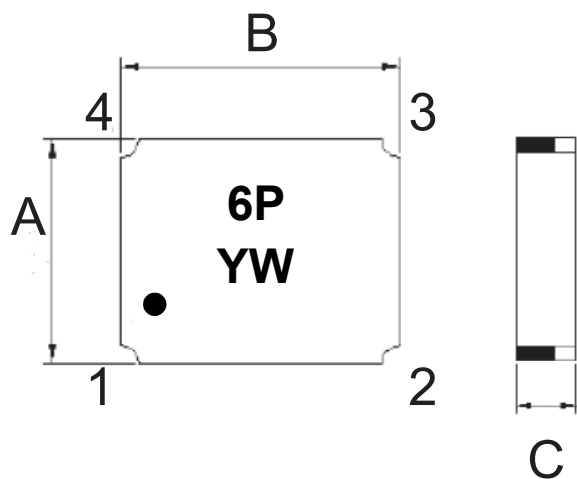
Case Dimensions

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	-

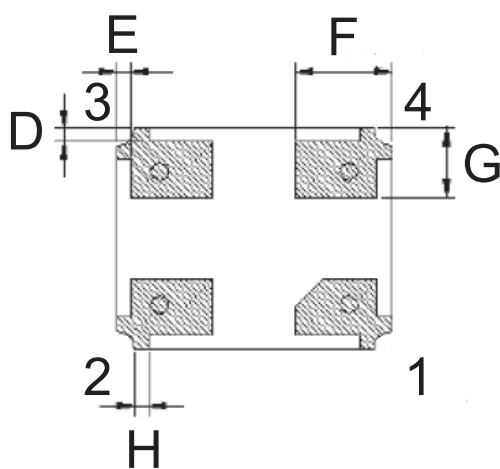
Materials

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
Pb Free	

Top View

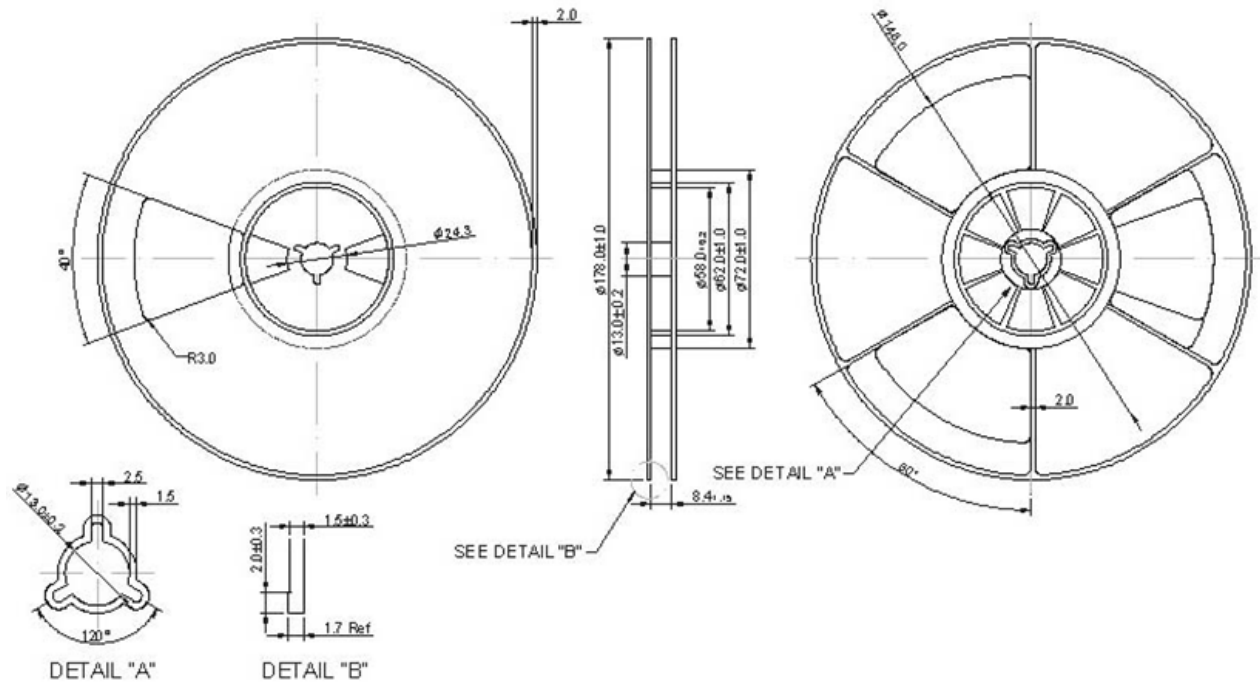


Bottom View

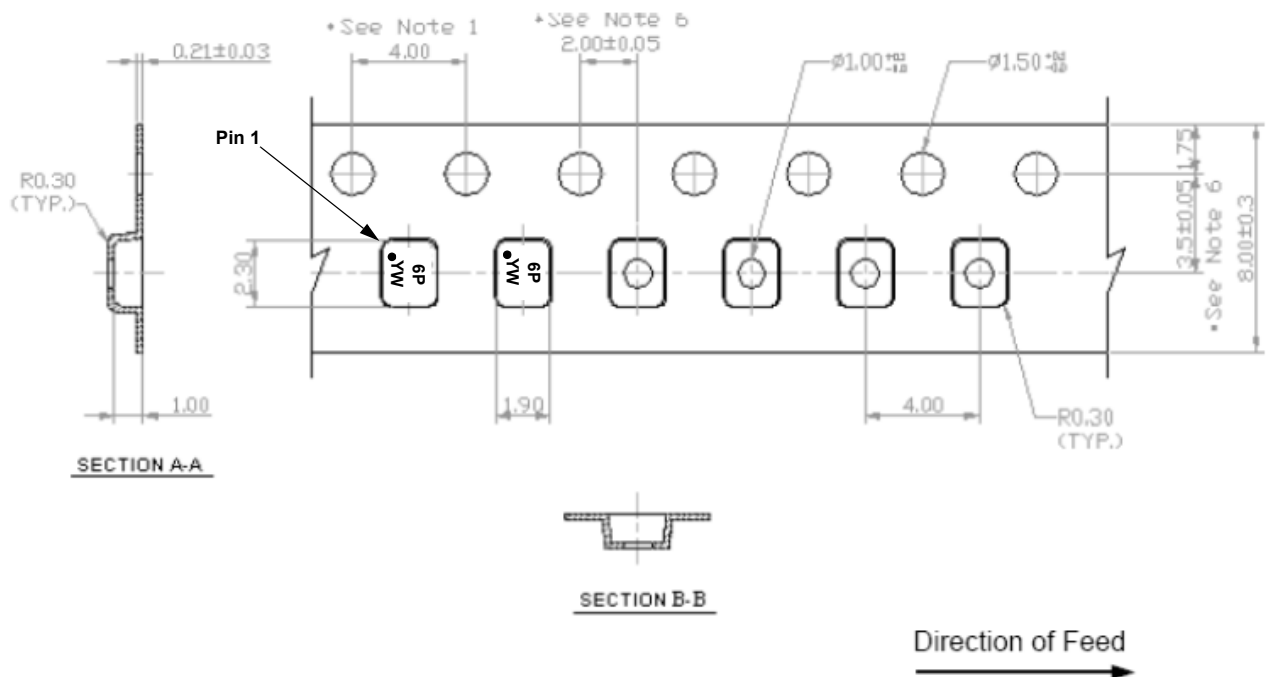


## Reel Dimension

Tape and Reel Standard per ANSI/EIA-481

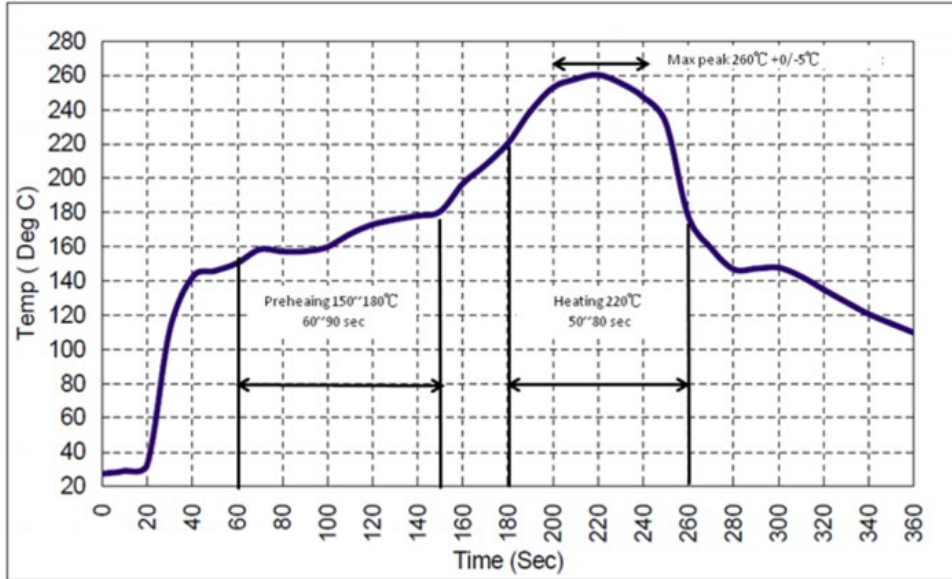


## Tape Dimension



## 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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