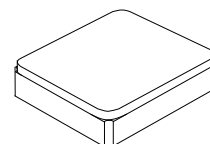


- RF Filter Designed for Front End GPS Applications
- Low Insertion Loss
- Improved Rejection
- 2.0 x 1.6 mm Surface-mount Case
- Complies with Directive 2002/95/EC (RoHS)



**SF1186H-3**

**1575.42 MHz  
SAW Filter**



**SM2016-4**

#### Absolute Maximum Ratings

Rating	Value	Units
Input Power Level	+10	dBm
Maximum DC Voltage on any Non-grounded Terminal	3	VDC
Filter Operating Temperature Range	-40 to +105	°C
Filter Storage Temperature Range	-55 to +105	°C
Storage Temperature Range in Tape & Reel	-40 to +85	°C
Maximum Soldering Profile	265°C for 10 s	

#### Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units
Center Frequency	$f_C$			1575.42		MHz
Maximum Insertion Loss, 1574.42 to 1576.42 MHz	$IL_{MAX}$			1.2	1.8	dB
Amplitude Ripple, 1574.42 to 1576.42 MHz				0.1	0.5	dB
VSWR, 1574.42 to 1576.42 MHz				1.2	1.9	
Attenuation:						dB
100 to 960 MHz			26	29		
960 to 1460 MHz			27	30		
1460 to 1513 MHz			22	26		
1648 to 1710 MHz			22	30		
1710 to 1990 MHz			25	30		
1990 to 2300 MHz			25	33		
2300 to 4000 MHz			21	24		
4000 to 6000 MHz			13	16		
Temperature Coefficient of Frequency				-36		ppm/°C
Source impedance	$Z_S$			50		$\Omega$
Load impedance	$Z_L$			50		$\Omega$

Single-ended Input / Output Impedance Match	No matching network required for operation at 50 ohms
Case Style	SM2016-4
Lid Symbolization, Device, Date Code	3A

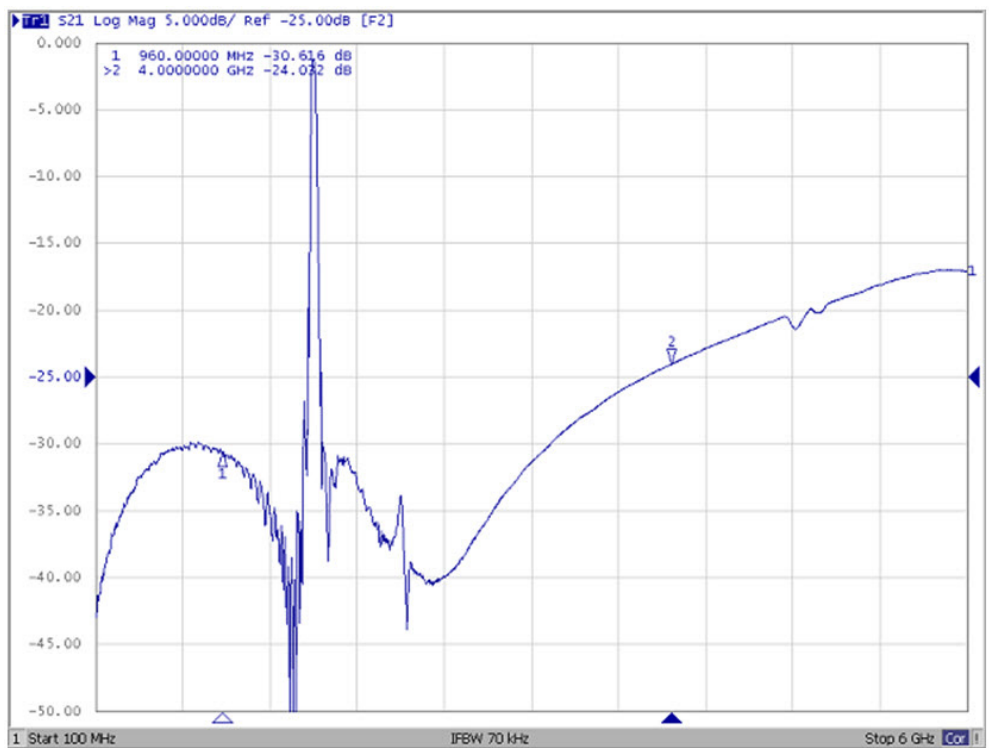
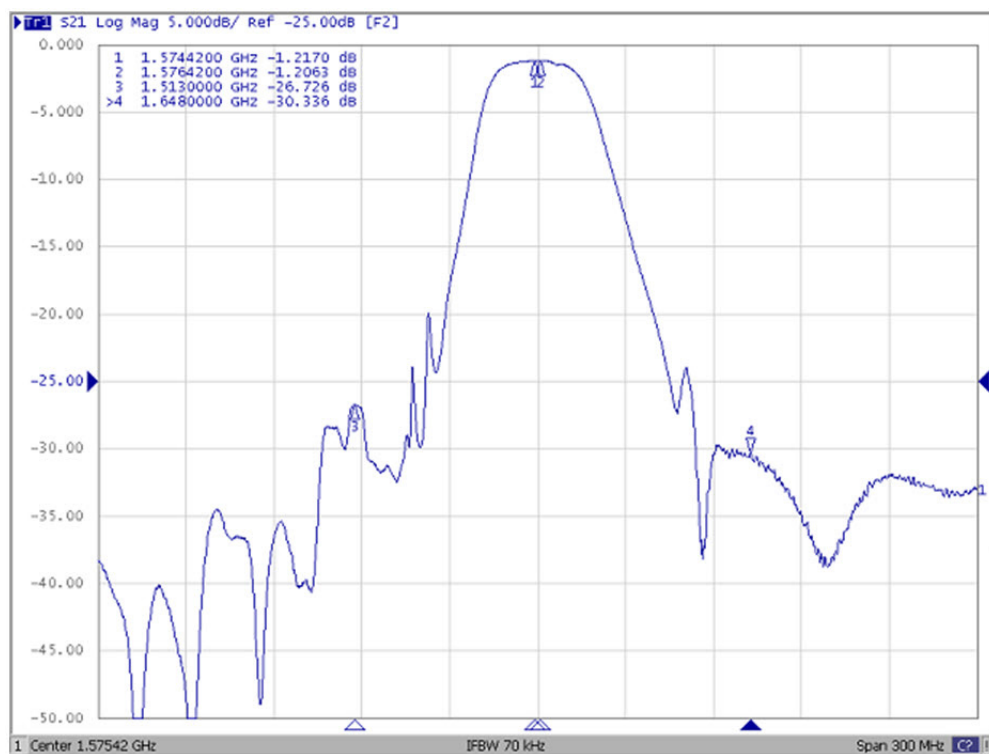


**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

#### NOTES:

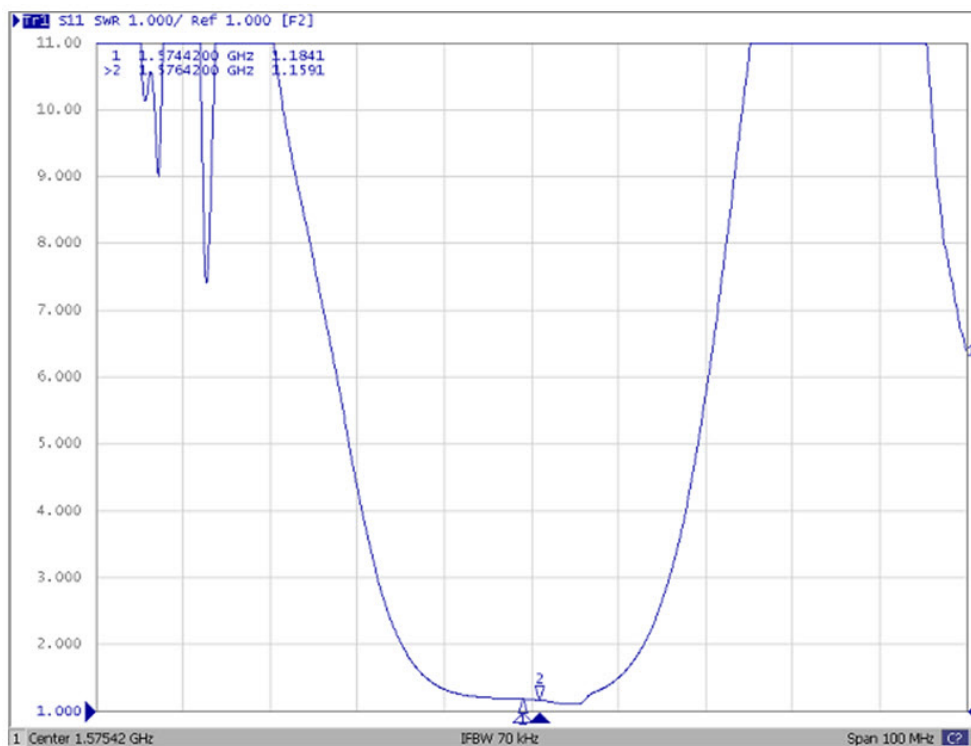
1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.

## Frequency Characteristics

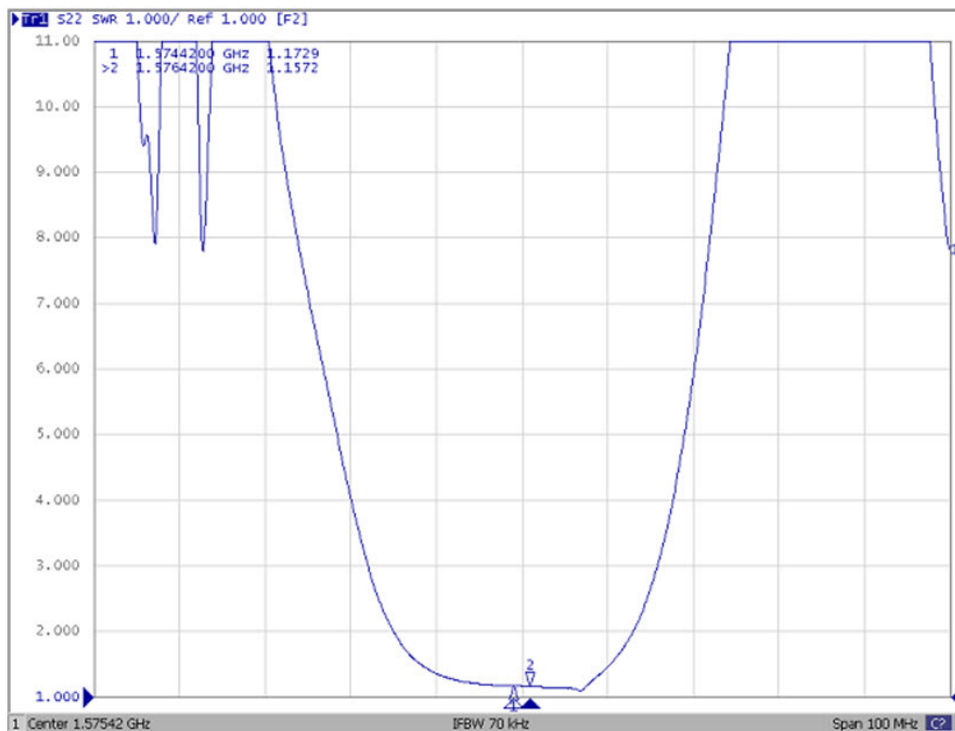


## Reflection Functions

S11



S22



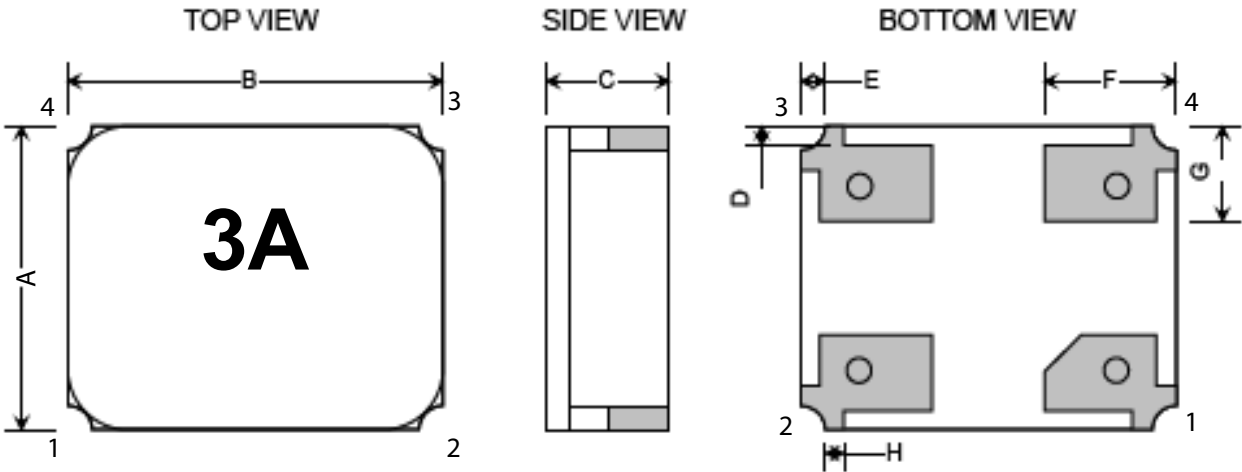
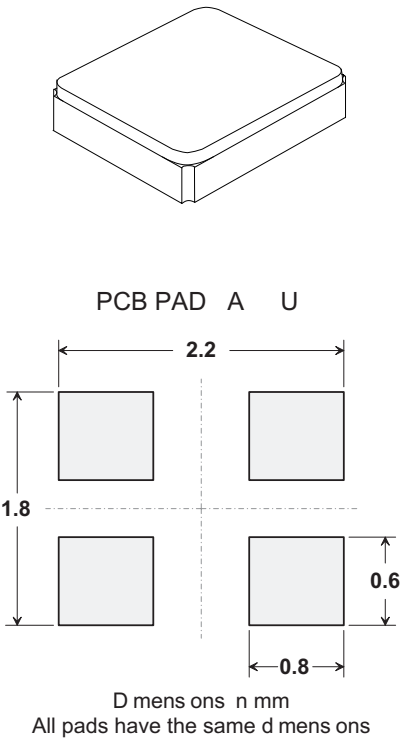
SM2016-4 Case

4-Terminal Ceramic Surface-Mount Case  
2.0 X 1.6 mm Nominal Footprint

Electrical Connections

Connection	Terminals
Input	1
Output	3
Ground	2, 4

Dimensions	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A		1.60				
B		2.00				
C		0.90				
D		0.10				
E		0.10				
F		0.70				
G		0.50				
H		0.10				



Tape and Reel Standard per ANSI/EIA-481

## 1. REEL DIMENSION

Technical drawing of a circular mechanical part, showing three views: front, side, and top.

**Front View (Left):** Shows a circular flange with a central hub. The outer diameter is 100.0. The inner diameter of the hub is 20.0. The flange thickness is 2.0. The hub has a diameter of 68.0. The drawing includes dimensions for diameters, radii, and angles.

**Side View (Middle):** Shows the profile of the part. The total height is 2.0. The central hole has a diameter of 20.0. The hub has a diameter of 68.0. The drawing includes dimensions for diameters, radii, and angles.

**Top View (Right):** Shows the top of the part. The outer diameter is 100.0. The inner diameter of the hub is 20.0. The flange thickness is 2.0. The hub has a diameter of 68.0. The drawing includes dimensions for diameters, radii, and angles.

**DETAIL "A" (Bottom Left):** A detailed view of the central hub. It shows a circular hub with a diameter of 20.0. The hub has a thickness of 1.5. The drawing includes dimensions for diameters, radii, and angles.

**DETAIL "B" (Bottom Right):** A detailed view of the flange. It shows a circular flange with a diameter of 100.0. The flange has a thickness of 2.0. The drawing includes dimensions for diameters, radii, and angles.

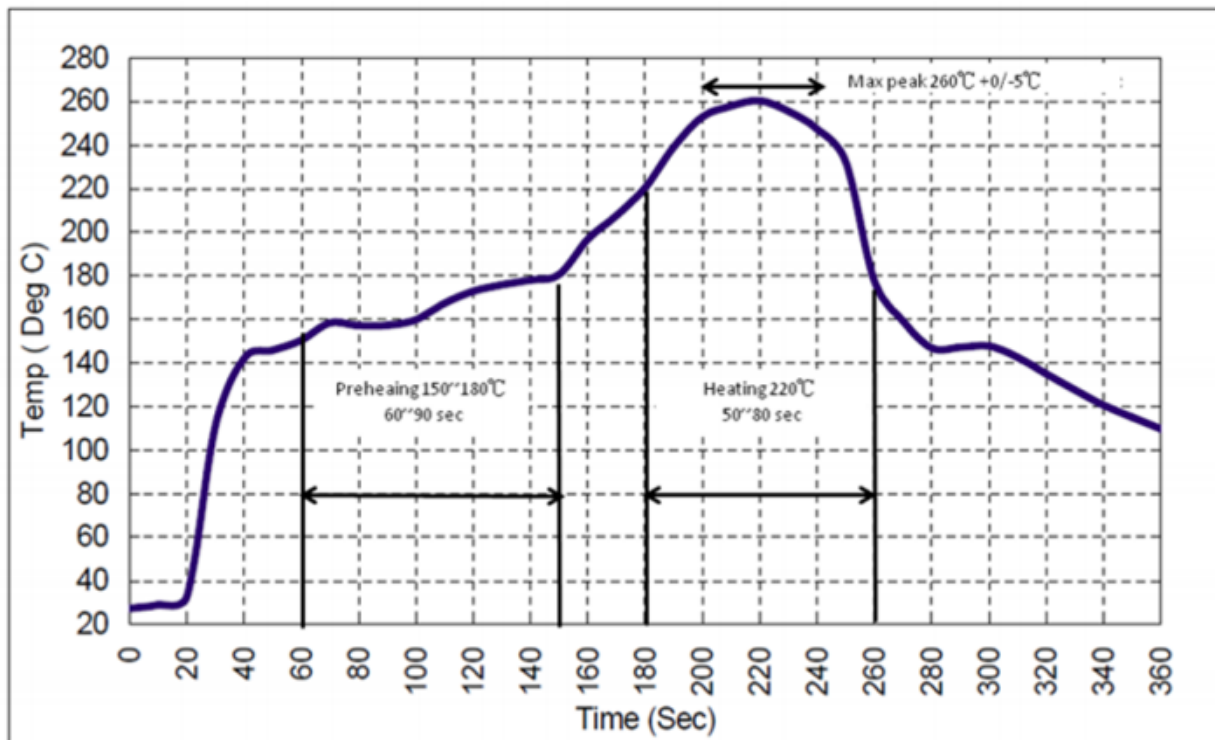
Technical drawing of a 10-hole punch plate. The main view shows a rectangular plate with 10 circular holes. Dimensions include: overall width  $0.21 \pm 0.03$ , hole spacing  $4.00$ , hole diameter  $2.00 \pm 0.05$ , hole diameter  $\phi 1.00 \pm 0.05$ , hole diameter  $\phi 1.50 \pm 0.05$ , hole diameter  $3.5 \pm 0.05$ , hole diameter  $8.00 \pm 0.3$ , hole diameter  $1.75$ , hole diameter  $2.30$ , hole diameter  $1.90$ , hole diameter  $4.00$ , and hole diameter  $R0.30$  (TYP.).

SECTION A-A

SECTION B-B

## 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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