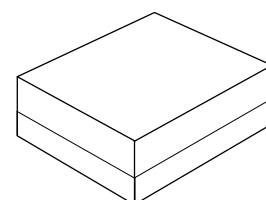


- *RF Filter Designed for Front End GPS Applications*
- *Excellent Rejection*
- *1.45 x 1.15 mm Surface-Mount Case*
- *Complies with Directive 2002/95/EC (RoHS)*
- *Moisture Sensitivity Level - 2A*

**SF1186K-3**

**1575.42 MHz  
SAW Filter**



**SM1411-5**

#### Absolute Maximum Ratings

Rating	Value	Units
Maximum Incident Power in Passband	+10	dBm
Maximum DC Voltage On any Non-ground Terminal	3	VDC
Operating Temperature Range	-40 to +95	°C
Component Storage Temperature Range	-40 to +105	°C
Storage Temperature Range in Tape and Reel	-40 to +85	°C
Maximum Soldering Temperature Profile (5 cycles maximum)	265 °C for 10 s	

#### Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units
Center Frequency	$f_C$			1575.42		MHz
2 dB Bandwidth				40		MHz
Insertion Loss, 1574.42 to 1576.42 MHz	$IL_{MAX}$			0.9	1.5	dB
Amplitude Ripple, 1574.42 to 1576.42 MHz				0.1	0.75	dB <sub>P-P</sub>
Rejection Referenced to $IL_{MAX}$						
DC to 1450 MHz			35	38		dB
1450 to 1520 MHz			30	45		
1625 to 1640 MHz			45	48		
1640 to 1805 MHz			38	40		
1805 to 1910 MHz			38	40		
1910 to 2000 MHz			38	43		
2000 to 4000 MHz			30	45		
4000 to 6000 MHz			20	22		
VSWR, 1574.42 to 1576.42 MHz				1.15	1.6	
Terminating Source impedance	$Z_S$			50		$\Omega$
Terminating Load impedance	$Z_L$			50		$\Omega$
Case Style				SM1411-5		
Lid Symbolization $\square$ = year/month manufacturing code				2□		

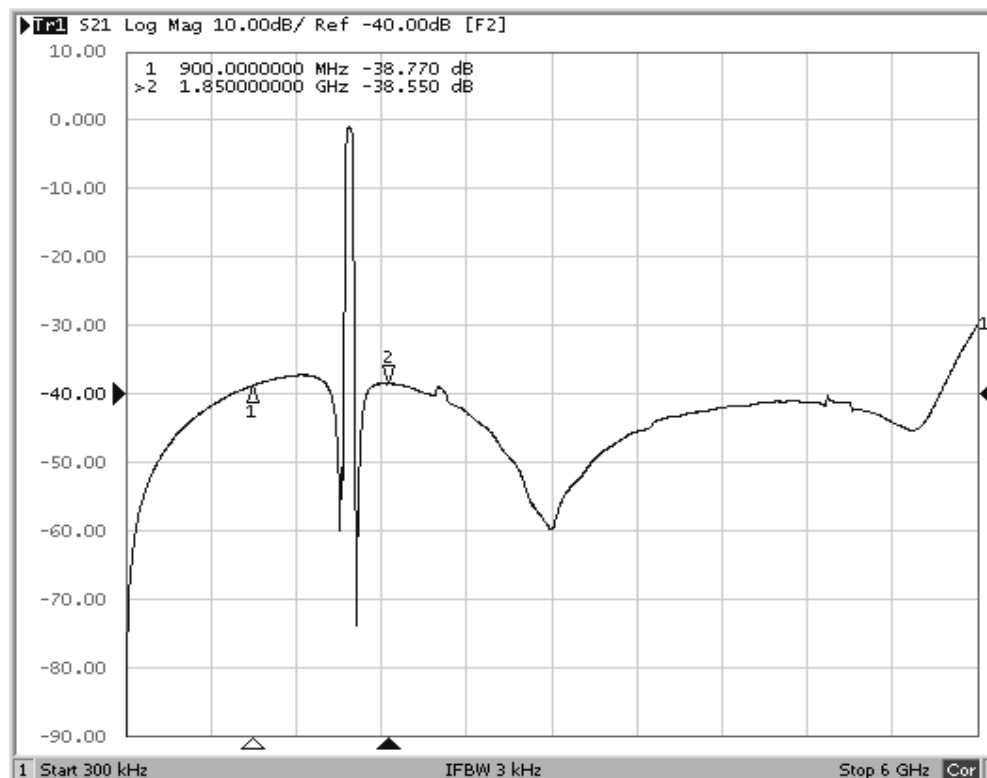
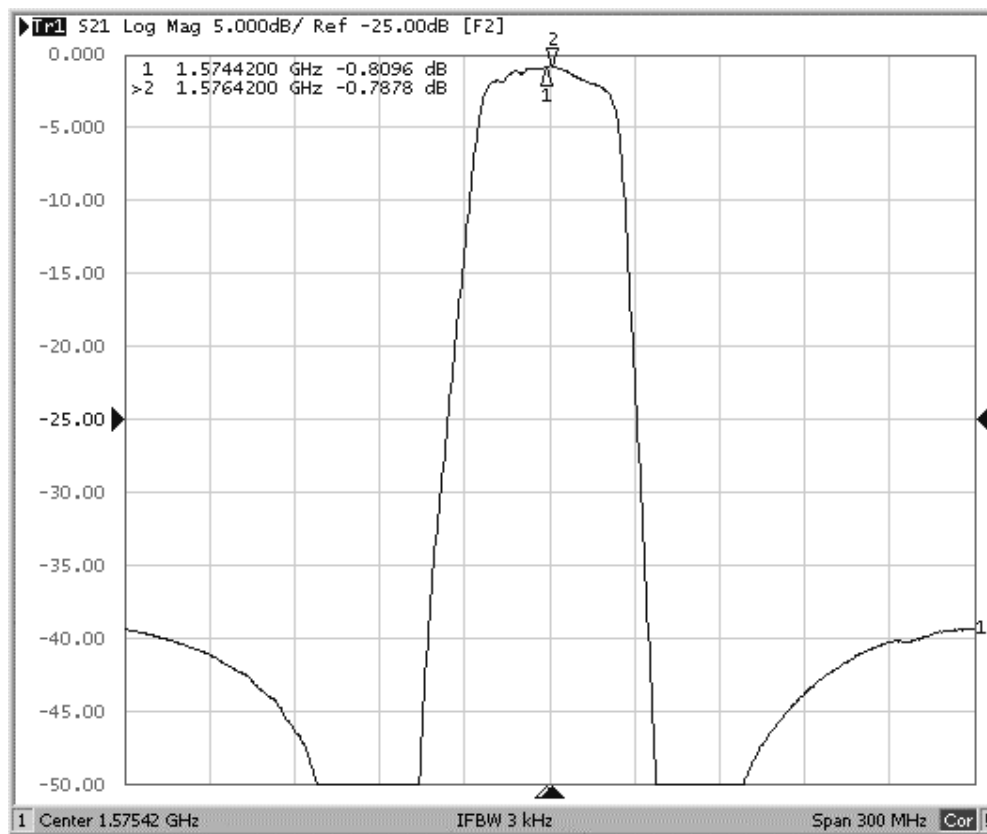


**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

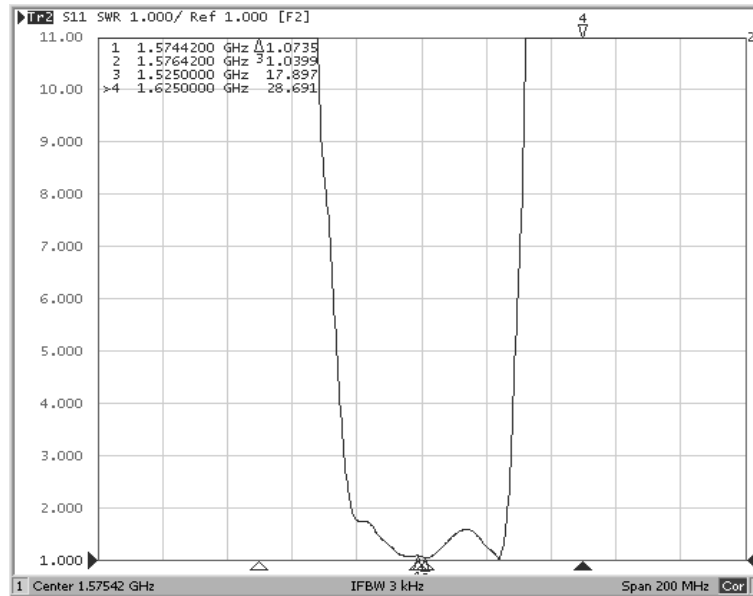
#### NOTES:

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.

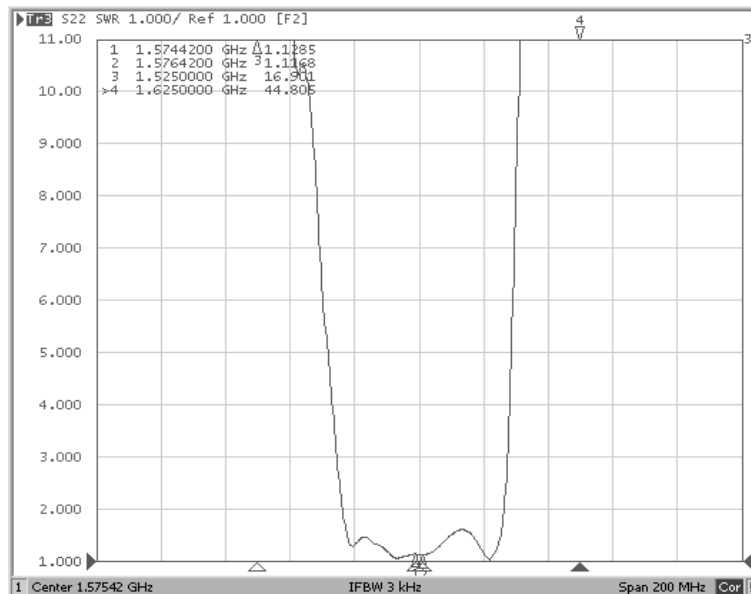
## Frequency Response Plots



## Input VSWR Plot



## Output VSWR Plot



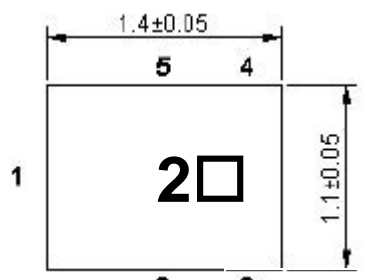
# SM1411-5 Case

## 5-Terminal Surface-Mount Case 1.45 X 1.15- mm Nominal Footprint

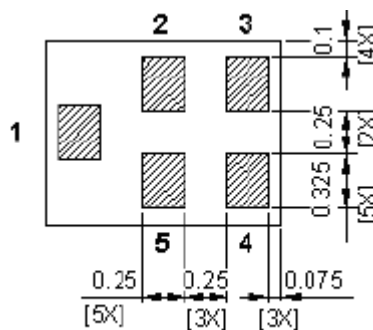
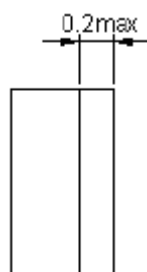
### Electrical Connections

Connection	Terminals
Input	1
Output	4
Ground	2, 3, 5

### Package Dimensions



Top View



Bottom View

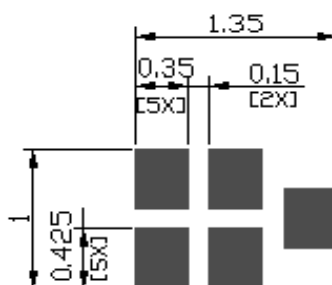
All tolerances are  $\pm 0.05$  mm unless otherwise specified

Coplanarity : 0.1 mm max.

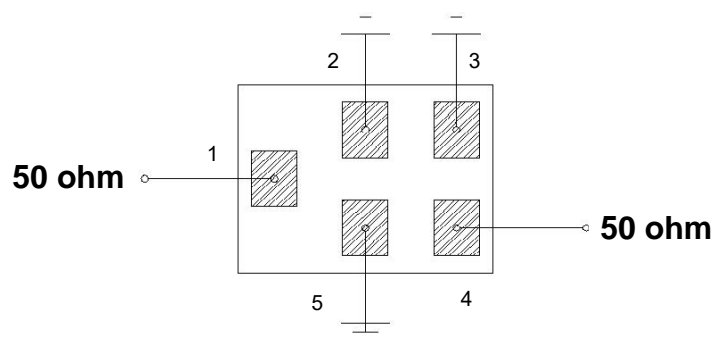
1 to 5 : Pin No.

Unit : mm

### Circuit Board Footprint

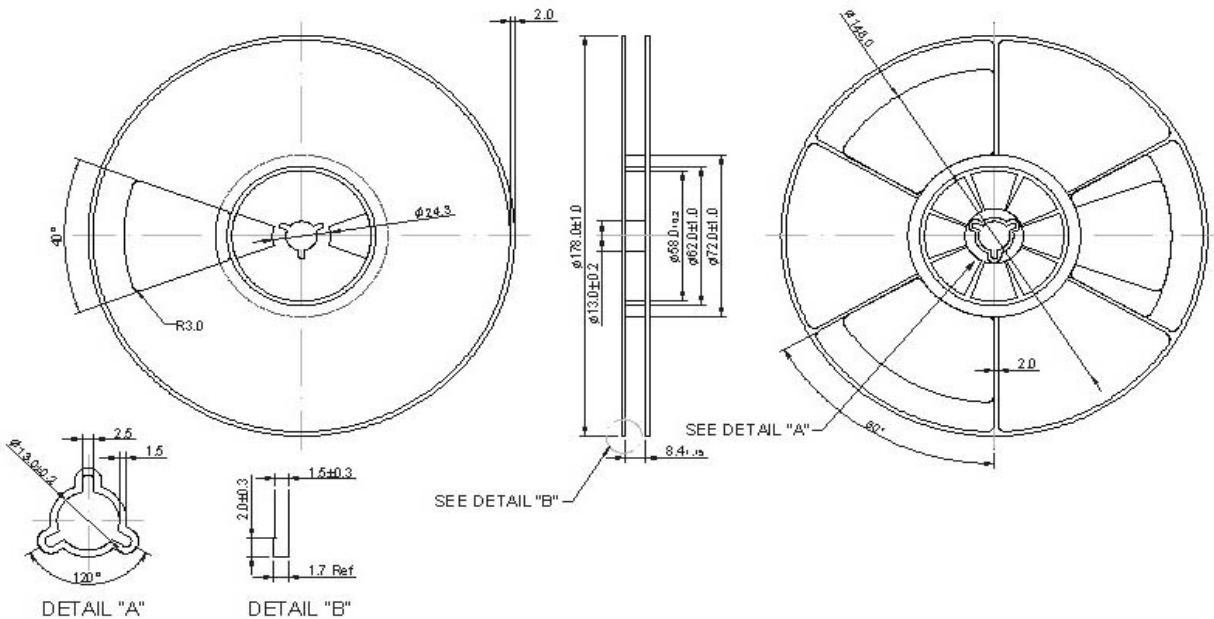


### Test Circuit

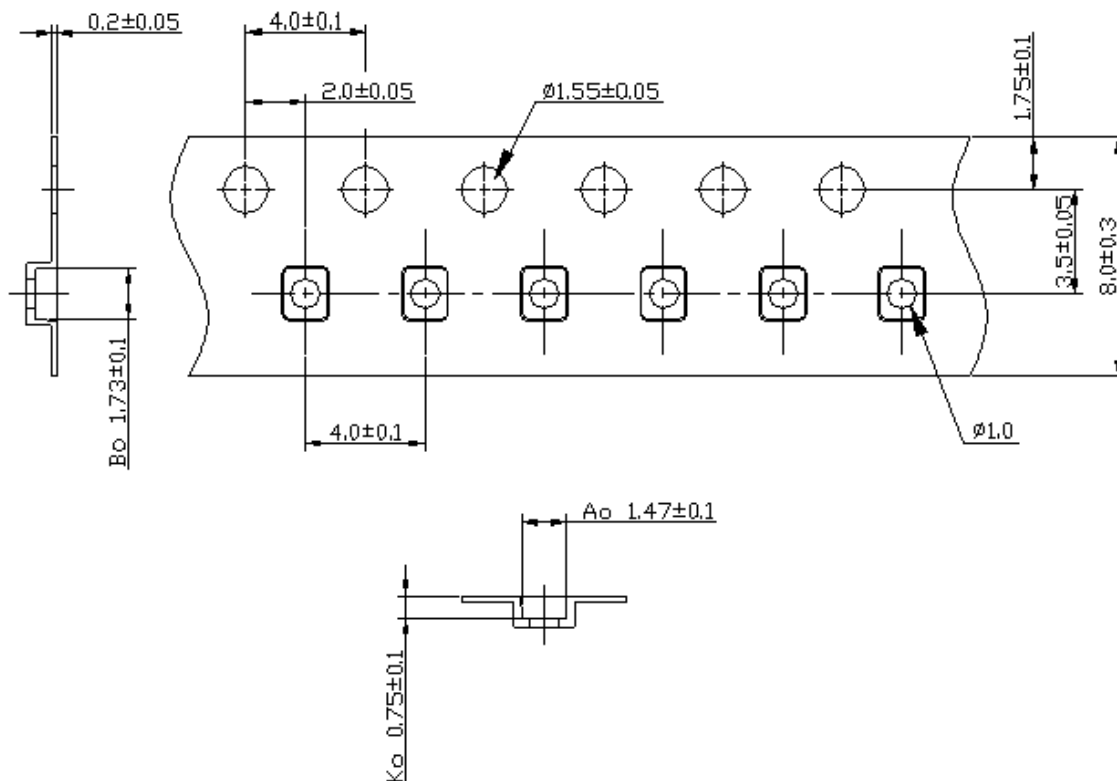


## Reel Dimensions - 7 inch Reel, 3000 Filters

Tape and Reel Standard per ANSI/EIA-481



## Tape Dimensions



## 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.

