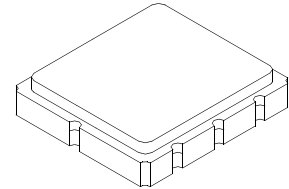


**SF1189B-1**

**280.00 MHz  
SAW Filter**



**SM5050-8**

- *Designed for WLAN IF Applications*
- *Low Insertion Loss*
- *5.0 x 5.0 x 1.7 mm Surface-mount Case*
- *Single-ended Input*
- *Single-ended or Differential Output*
- *Complies with Directive 2002/95/EC (RoHS)*
- *Moisture Sensitivity Level: 1*

**Absolute Maximum Ratings**

Rating	Value	Units
Maximum Incident Power in Passband	+10	dBm
Maximum DC Voltage on any Non-ground Terminal	0	VDC
Storage Temperature Range	-40 to +85	°C
Suitable for Lead-free Soldering - Maximum Soldering Profile	260°C for 30 s	

**Electrical Characteristics**

Characteristic	Sym	Notes	Min	Typ	Max	Units	
Nominal Center Frequency	$f_c$		280.0			MHz	
Passband	Insertion Loss at fc 3 dB Bandwidth	IL		8.3	10	dB	
		$BW_3$	18.5	19.8		MHz	
		Amplitude Ripple, $f_c \pm 9.0$ MHz		2.0	3.0		dB <sub>P-P</sub>
		Group Delay Variation, $f_c \pm 9.0$	GDV		60	125	ns <sub>P-P</sub>
Rejection	fc -60 to fc -40 MHz fc -40 to fc -22 MHz fc -22 to fc -16 MHz fc +16 to fc +22 MHz fc +22 to fc +40 MHz fc +40 to fc +60 MHz		40	46		dB	
			37	39			
			30	39			
			25	33			
			34	36			
			40	45			
Operating Temperature Range	$T_A$		-10		+85	°C	

Differential Input / Output Impedance Match	External L-C
Case Style	SM5050-8 5 X 5 mm Nominal Footprint
Lid Symbolization (Y=year, WW=week, S=shift)	457, <u>YWWS</u>

**Electrical Connections**

Connection	Terminals
Port 1	Single-ended Input 3
Port 2	Single-ended Output 7
	Differential Output 6,7
	Ground All others

 **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.

# Amplitude Response

Note: Insertion loss of balun transformer -0.7 dB

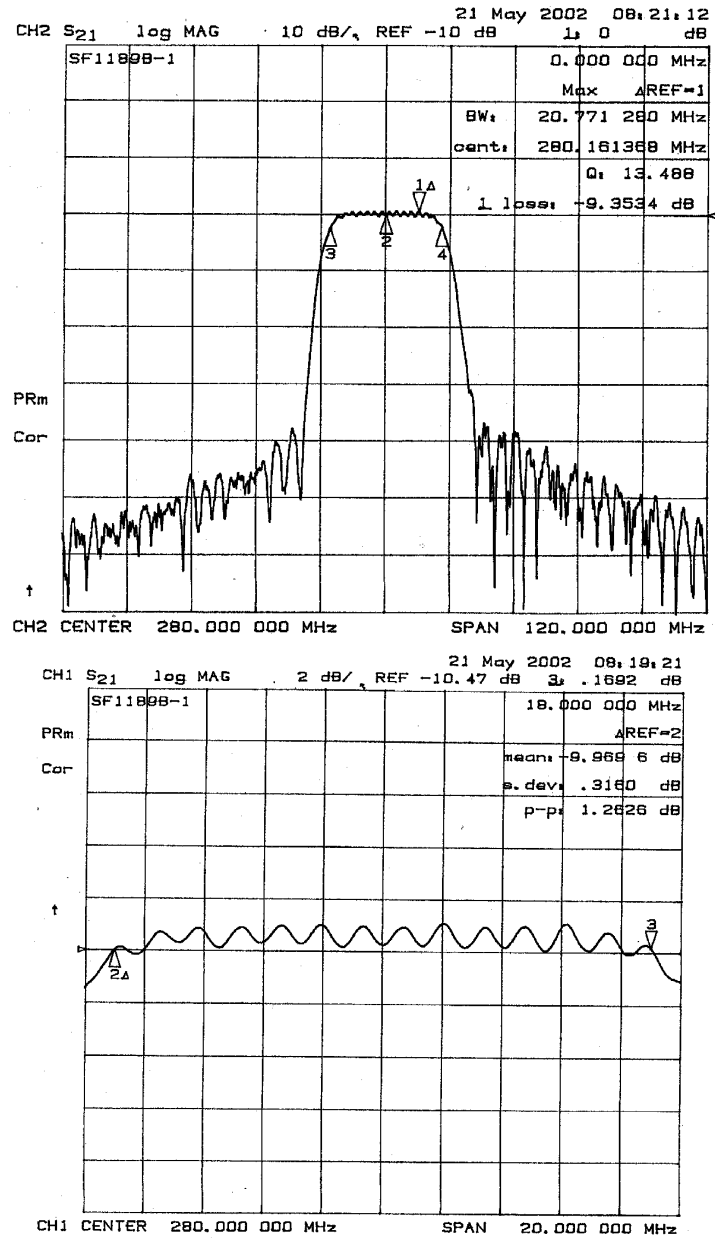
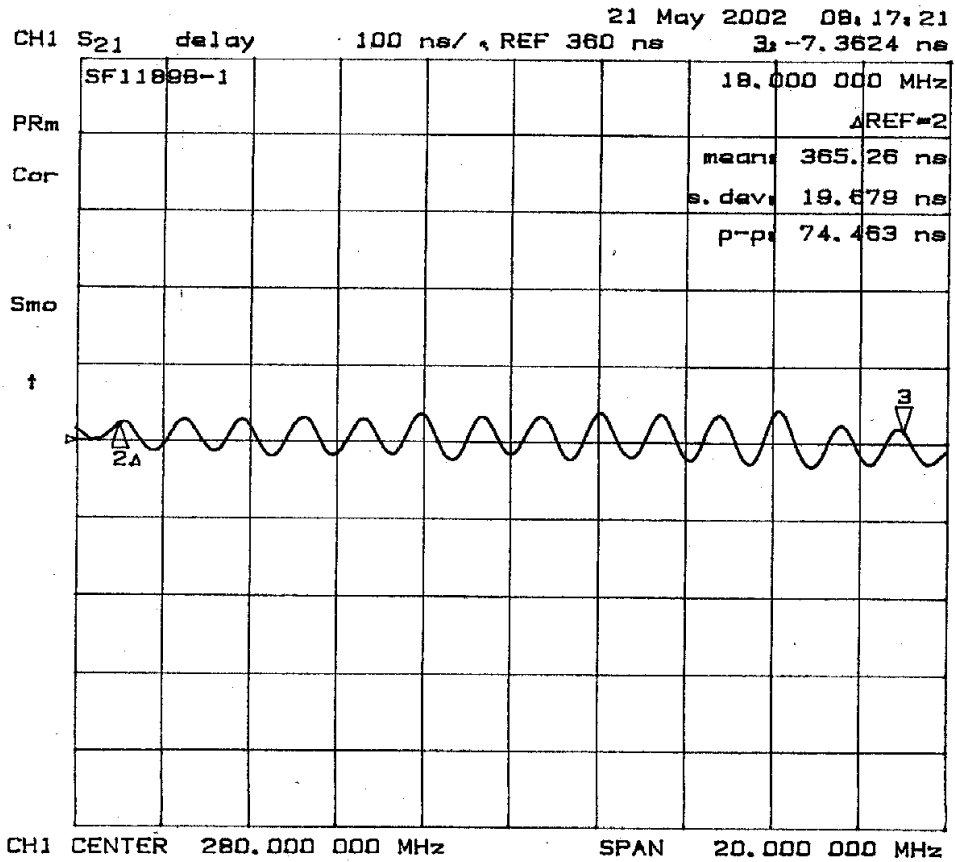
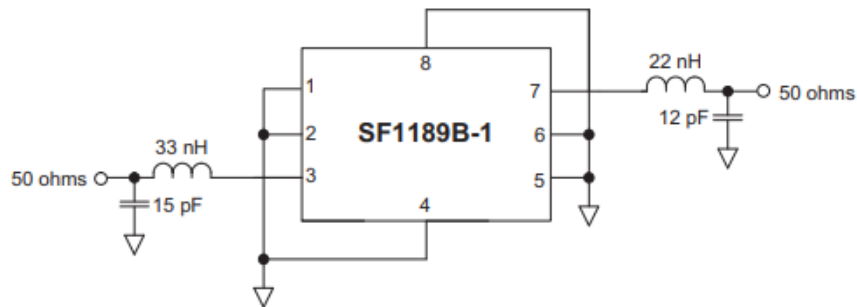


Fig-1 S21 Response

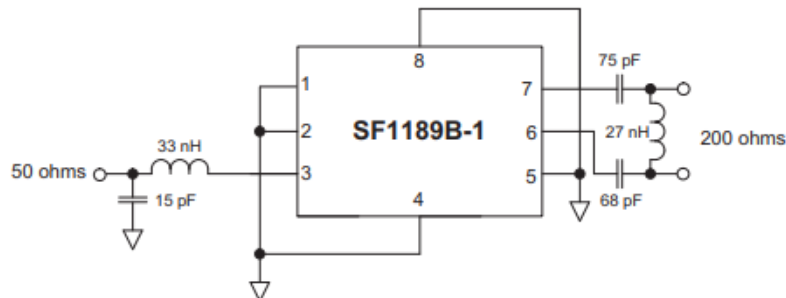
# Group Delay Response



## Matching for Single-ended Input and Output

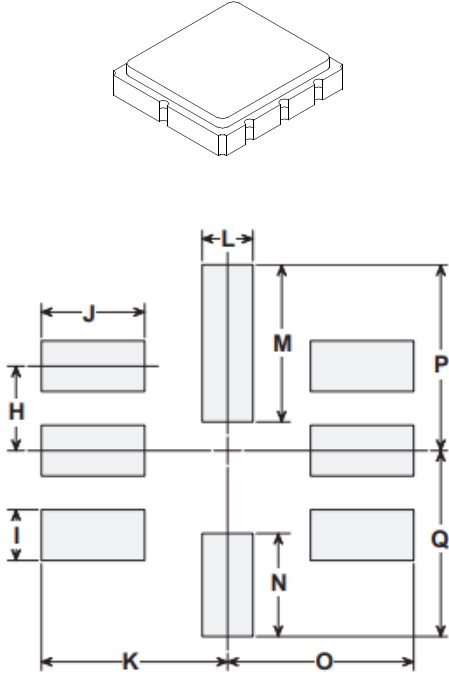


## Matching for Single-ended Input, Balanced Output



## SM5050-8 Ceramic Surface-mount Case 5.0 X 5.0 mm Nominal Footprint

### Case Dimensions



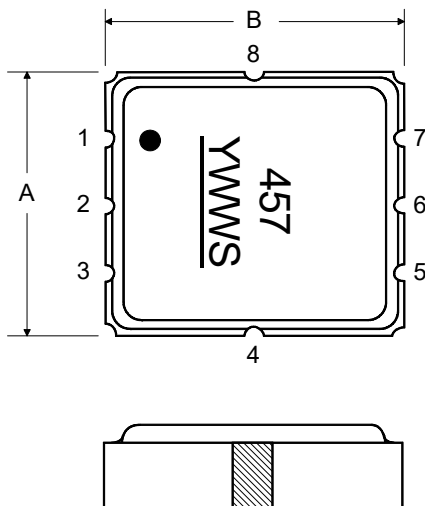
Typical PCB Land

Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	4.80	5.00	5.20	0.189	0.197	0.205
B	4.80	5.00	5.20	0.189	0.197	0.205
C	1.30	1.50	1.70	0.050	0.060	0.067
D	1.98	2.08	2.18	0.078	0.082	0.086
E	1.07	1.17	1.27	0.042	0.046	0.050
F	0.50	0.64	0.70	0.020	0.025	0.028
G	2.39	2.54	2.69	0.094	0.100	0.106
H		1.27			0.050	
I		0.76			0.030	
J		1.55			0.061	
K		2.79			0.110	
L		0.76			0.030	
M		2.36			0.093	
N		1.55			0.061	
O		2.79			0.110	
P		2.79			0.110	
Q		2.79			0.110	

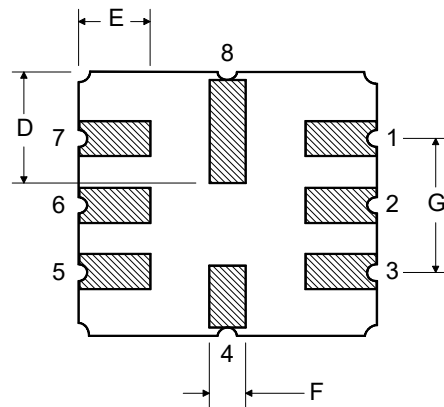
### Case Materials

Materials	
Solder Pad Plating	0.3 to 1.0 $\mu\text{m}$ Gold over 1.27 to 8.89 $\mu\text{m}$ Nickel
Lid Plating	2.0 to 3.0 $\mu\text{m}$ Nickel
Body	$\text{Al}_2\text{O}_3$ Ceramic

### TOP VIEW

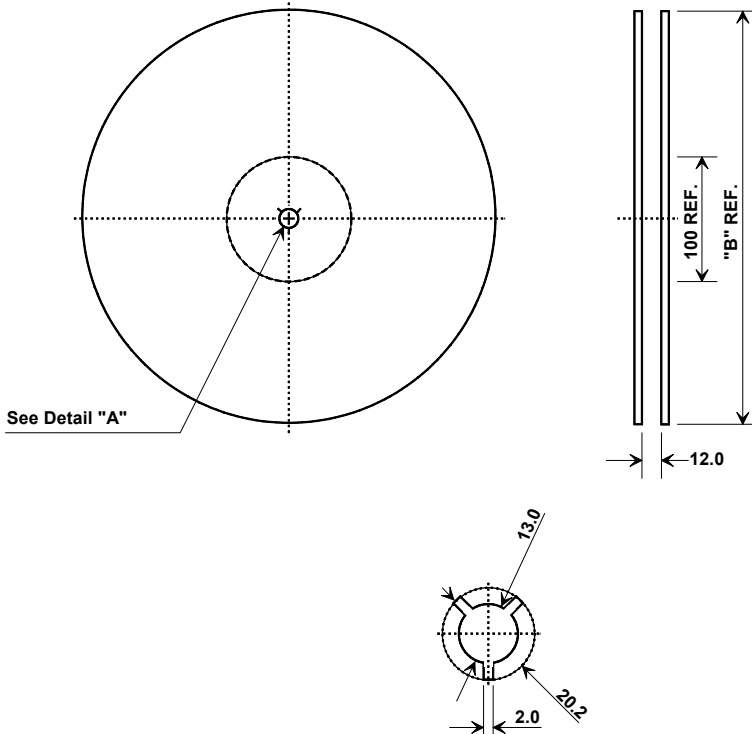


### BOTTOM VIEW



## Tape and Reel Specifications

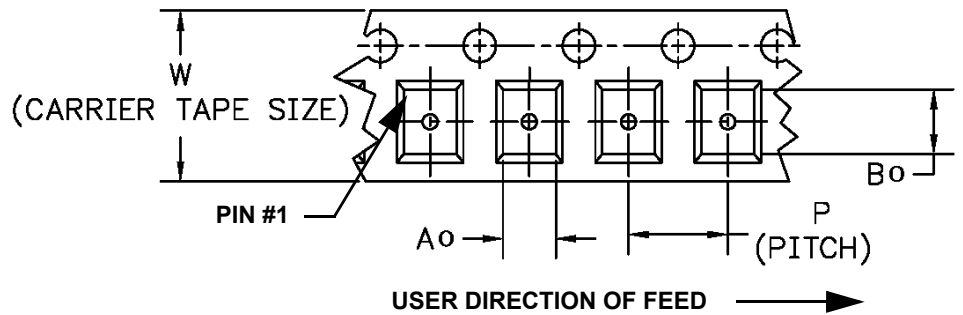
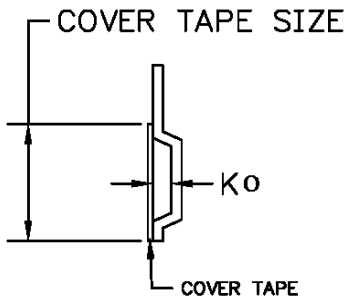
Tape and Reel Standard per ANSI/EIA-481



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

### COMPONENT ORIENTATION and DIMENSIONS

Carrier Tape Dimensions	
Ao	5.3 mm
Bo	5.3 mm
Ko	2.0 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.

