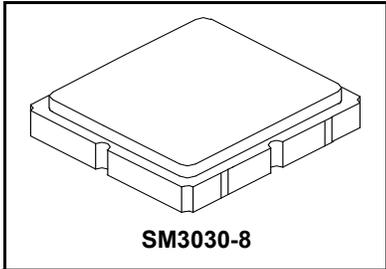


- **RF Filter for Mobile Communication Applications**
- **Low Insertion Loss**
- **3.0 x 3.0 x 1.3 mm Surface-Mount Case**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Moisture Sensitivity Level: 1**
- **AEC-Q200 Qualified**

RoHS  
Compliant

SF2445E

846 MHz  
SAW Filter



**Absolute Maximum Ratings**

Rating	Value	Units
Maximum Incident Power in Passband	+15	dBm
Maximum DC Voltage Between any 2 Terminals	3	VDC
Operable Temperature Range	-45 to +125	°C
Specification Temperature Range	-30 to +85	°C
Storage Temperature Range	-40 to +85	°C
Terminating Source Impedance (single) $Z_S$	50	$\Omega$
Terminating Load Impedance (single) $Z_L$	50	$\Omega$
Maximum Soldering Profile	260 °C for 10 s	

Characteristic	Sym	Notes	Min	Typ	Max	Units
Center Frequency	$f_c$			846		MHz
3dB Bandwidth			1.23	1.7		MHz
Total Amplitude Variation, 845.385 to 846.615 MHz				2.5	4.7	dB
Minimum Insertion Loss				8.0	10.5	
Input VSWR, 845.385 to 846.615 MHz				4.7	6.3	
Output VSWR, 845.385 to 846.615 MHz				2.1	3.8	
Phase Deviation (845.385 to 846.615 MHz RMS))				2	5	deg.
Attenuation Referenced to IL min:	IL					dB
0.1 to 841 MHz			40	45		
841 to 844.28 MHz			19	25		
849 to 1000 MHz			35	38		
Case Style	SM3030-8 3 x 3 mm Nominal Footprint					
Lid Symbolization (Y=year, WW=week, S=shift)	9B, <u>YWWS</u>					

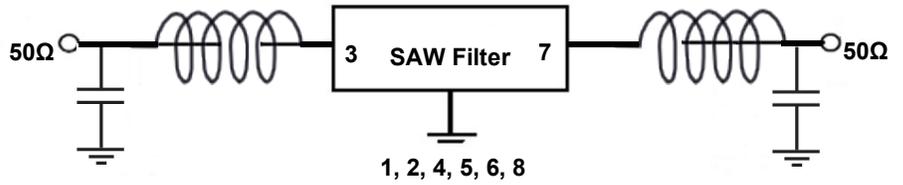
**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

**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.

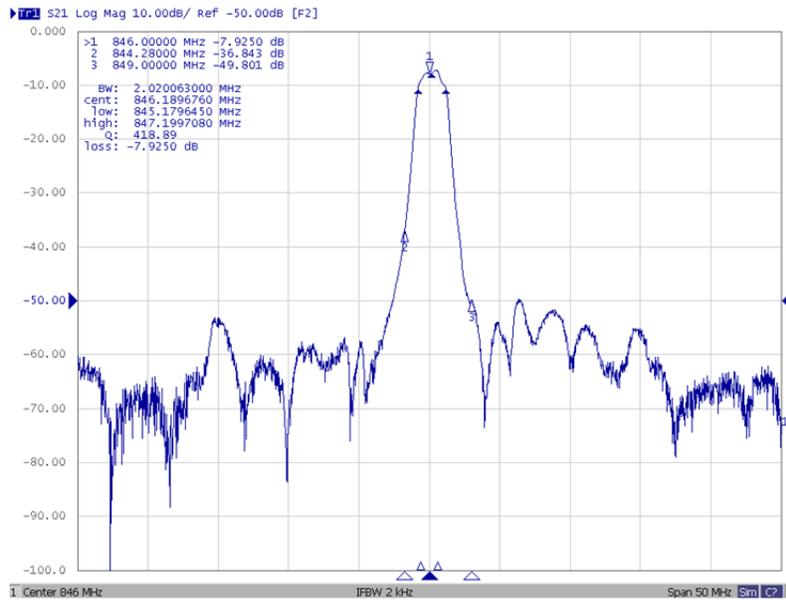
## Electrical Connections

Connection	Terminals
Input	3
Output	7
Ground	All others

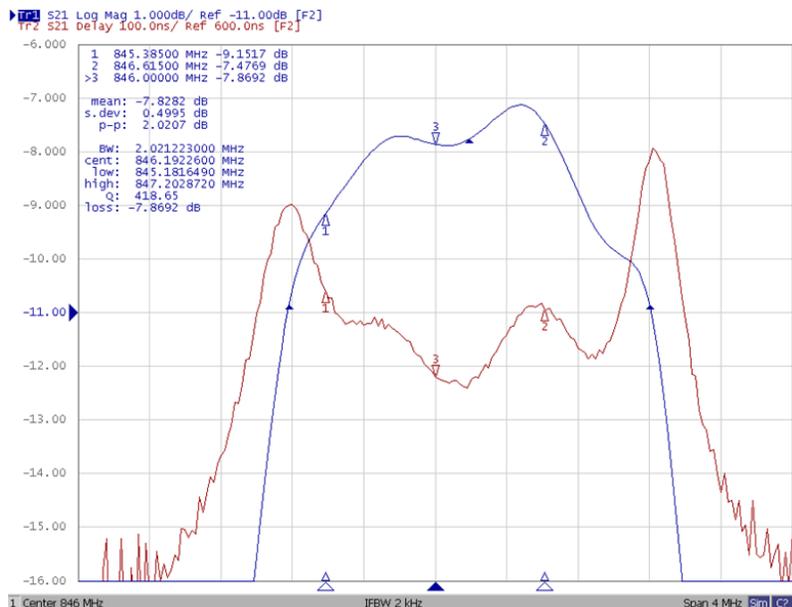


## Frequency Characteristics

### Narrow Band Response

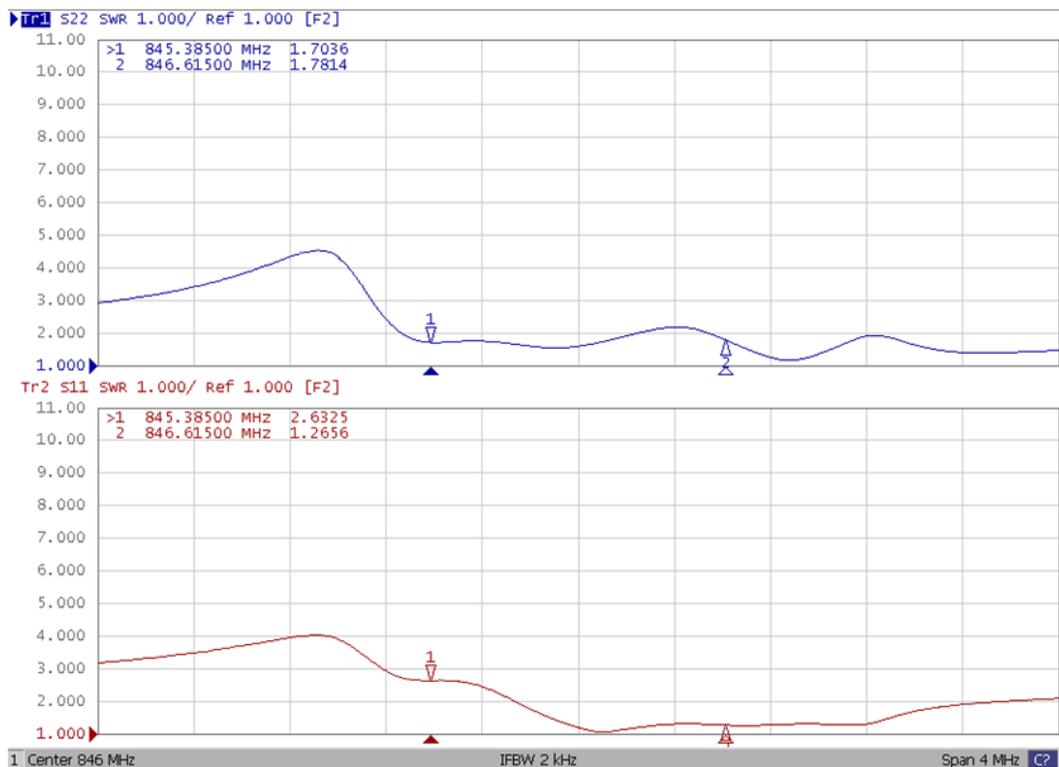


### Pass Band and Group Time Delay Response

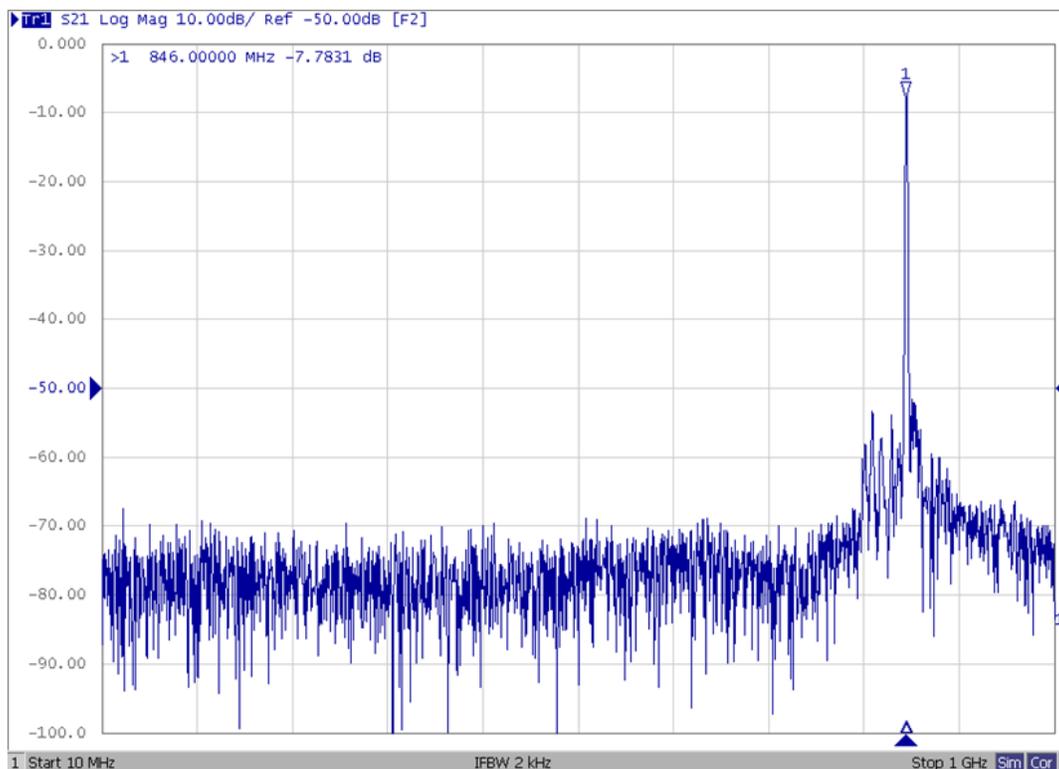


# Frequency Characteristics (cont.)

## VSWR

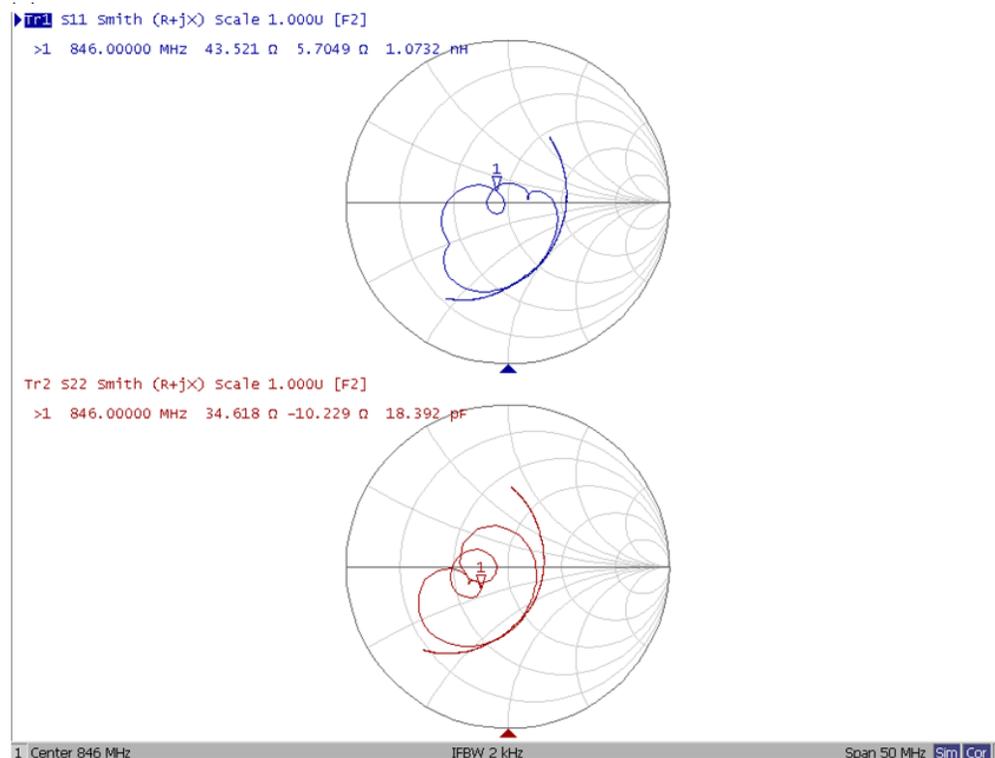


## Wide Band Response



# Frequency Characteristics (cont.)

## Smith Chart



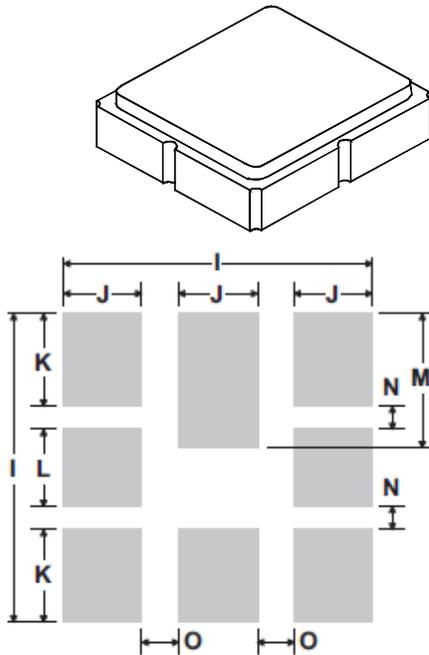
## Phase



# SM3030-8 Case

## 8-Terminal Ceramic Surface-Mount Case

### 3.0 X 3.0 mm Nominal Footprint



PCB Footprint, Top View

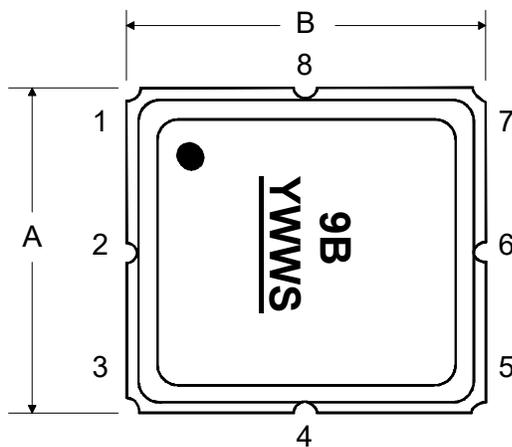
#### Case Dimensions

Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	2.87	3.0	3.13	0.113	0.118	0.123
B	2.87	3.0	3.13	0.113	0.118	0.123
C	1.14	1.27	1.40	0.045	0.050	0.055
D	0.79	0.92	1.05	0.031	0.036	0.041
E	0.62	0.75	0.88	0.024	0.029	0.034
F	0.47	0.60	0.73	0.018	0.024	0.029
G	0.47	0.60	0.73	0.018	0.024	0.029
H	1.07	1.20	1.33	0.042	0.047	0.052
I		3.19			0.126	
J		0.81			0.032	
K		0.96			0.038	
L		0.81			0.032	
M		1.39			0.055	
N		0.23			0.009	
O		0.38			0.015	

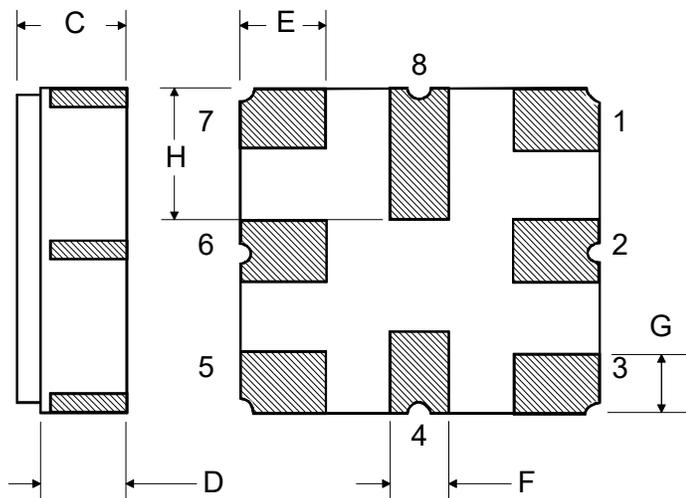
#### Case Materials

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

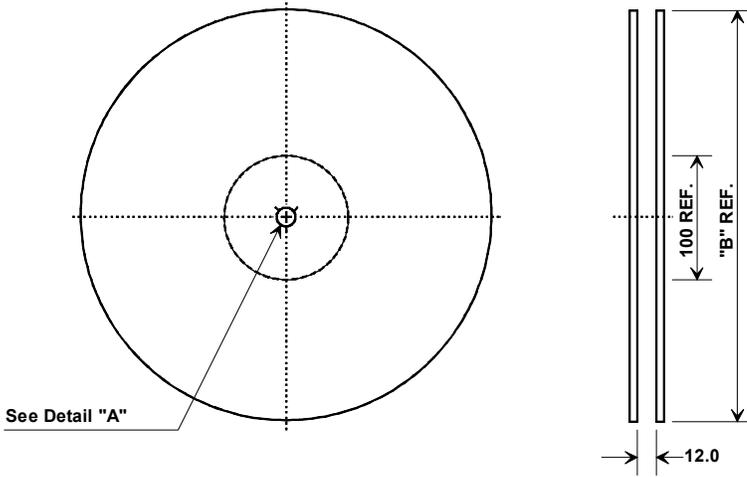


BOTTOM VIEW

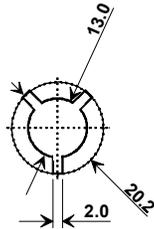


# Tape and Reel Specifications

Tape and Reel Standard per ANSI/EIA-481

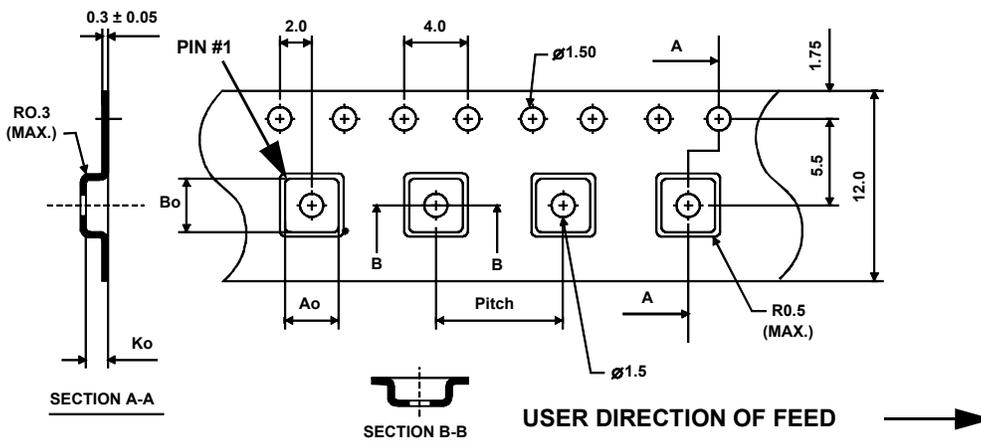


"B" Nominal Size		Quantity Per Reel
Inches	millimeters	
7	178	1000
13	330	3000



## COMPONENT ORIENTATION and DIMENSIONS

Carrier Tape Dimensions	
<b>Ao</b>	4.25 mm
<b>Bo</b>	4.25 mm
<b>Ko</b>	1.3 mm
<b>Pitch</b>	8.0 mm
<b>W</b>	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.

