



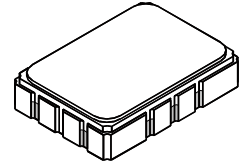
AEC-Q200  
This component was always  
RoHS compliant from the first  
date of manufacture.

- SAW Filter, 895 MHz, 15 MHz BW
- 7.0 X 5.0 mm 10 pin Surface-Mount Case
- Complies with Directive 2002/95/EC (RoHS)



**SF2145B**

**895 MHz  
SAW Filter**



**SMP-03**

**Absolute Maximum Ratings**

| Rating                                       | Value      | Units |
|--|------------|-------|
| Maximum Incident Power in Passband           | +20        | dBm   |
| Maximum DC Voltage Between any Two Terminals | 0          | VDC   |
| Operating Temperature Range                  | -20 to +70 | °C    |

**Electrical Characteristics**

| Characteristic   | Sym   | Notes | Min | Typ | Max | Units             |
|--|-------|-------|-----|-----|-----|-------------------|
| Center Frequency   | $f_c$ |       |     | 895 |     | MHz               |
| Source Impedance, single ended   |       |       |     | 50  |     | $\Omega$          |
| Load Impedance, single ended   |       |       |     | 50  |     | $\Omega$          |
| 1 dB Bandwidth   |       |       |     | 18  |     | MHz               |
| Insertion Loss, 894 to 895.5 MHz   | IL    |       |     | 8.5 | 9.0 | dB                |
| Insertion Loss Variation: Any point within 894 to 895.5 MHz measured at a constant temperature with the RF input level varying from +10 to +20 dBm |       |       |     |     | 0.3 | $\Delta$ dB       |
| Amplitude Ripple, 894 to 895.5 MHz   |       |       |     | .35 | .75 | dB                |
| Average Group Delay, 894 to 895.5 MHz  |       |       | 804 | 814 | 824 | ns                |
| Group Delay Variation, 894.0 to 895.5 MHz  |       |       |     | 10  | 25  | ns <sub>P-P</sub> |
| Input / Output Return Loss at $f_c$  |       |       | 10  | 15  |     | dB                |
| Temperature Coefficient  |       |       |     | -18 |     | ppm/K             |

|   |                                       |
|---|---------------------------------------|
| Case Style                                    | SMP-03 7.0 x 5.0 mm Nominal Footprint |
| Lid Symbolization (YY=year, WW=week, S=Shift) | RFM, SF2145B, YYWWS                   |



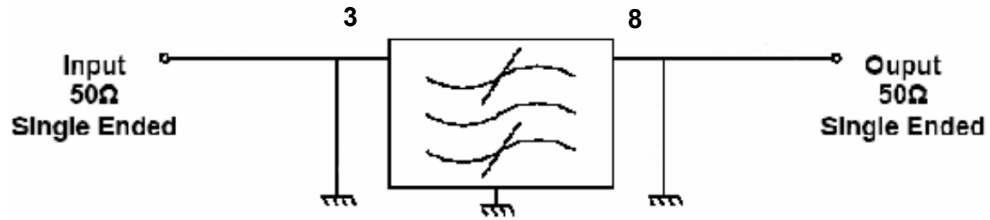
**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

**NOTES:**

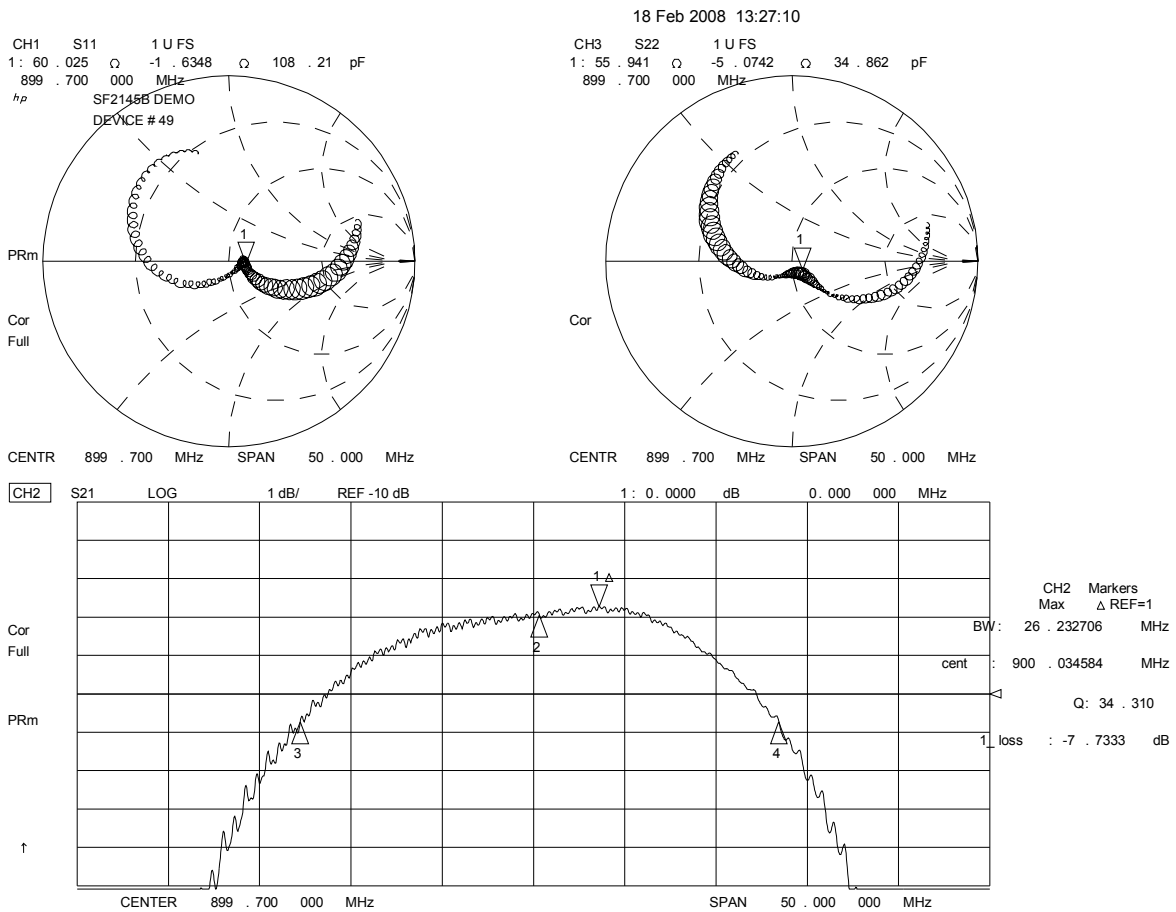
1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.

# Testing Environment

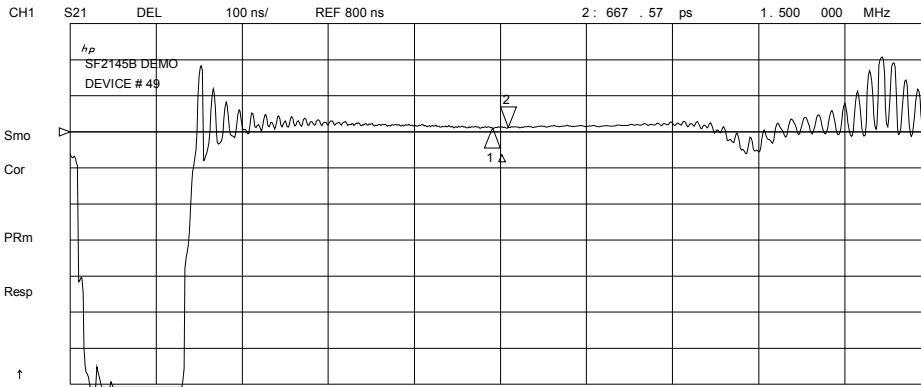
## 50 Ω / 50 Ω CONFIGURATION



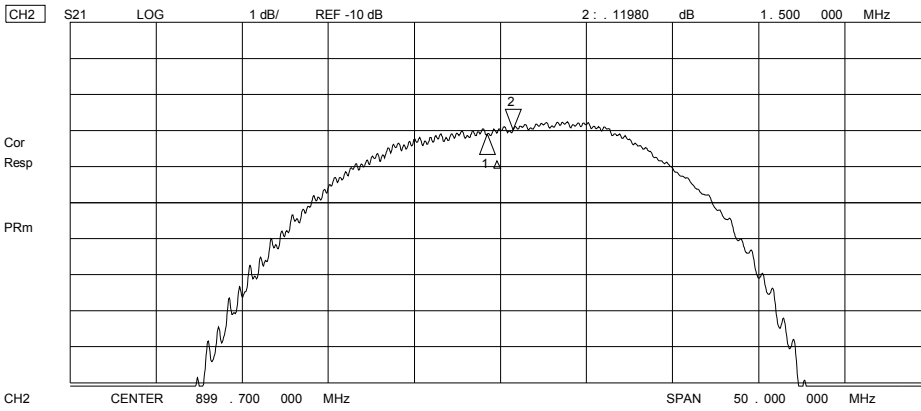
Note: Unmatched Filter to 50Ω Input / Output.



18 Feb 2008 13:26:55



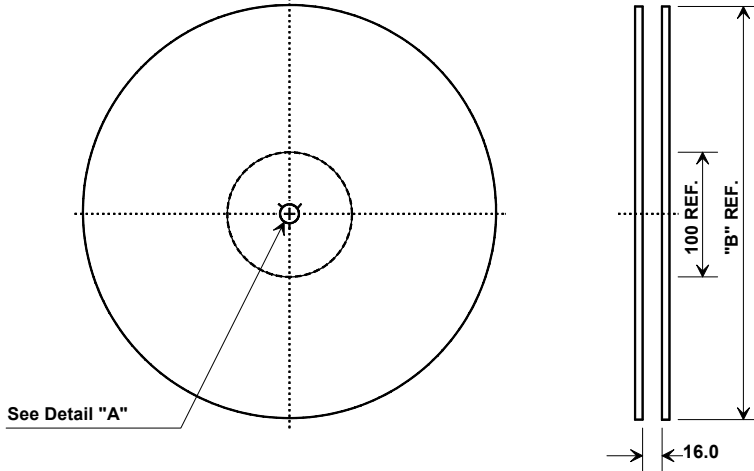
CH1 Markers  
Δ REF=1  
mean : 812 . 88 ns  
s. dev : 1 . 2799 ns  
p-p : 4 . 4631 ns



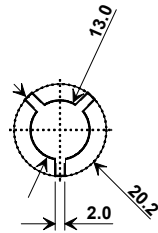
CH2 Markers  
Δ REF=1  
mean : -8 . 0196 dB  
s. dev : . 06000 dB  
p-p : . 24780 dB

## Tape and Reel Specifications

Tape and Reel Standard per ANSI/EIA-481

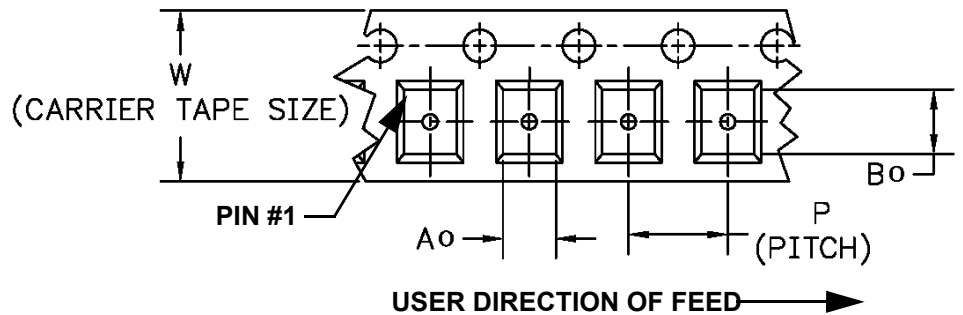
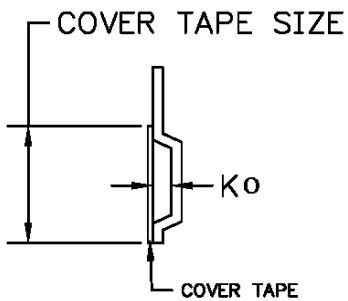


| "B" Nominal Size |             | Quantity Per Reel |
|------------------|-------------|-------------------|
| Inches           | millimeters |                   |
| 7                | 178         | 500               |
| 13               | 330         | 2000              |



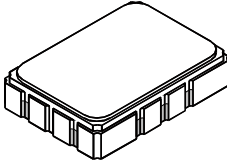
### COMPONENT ORIENTATION and DIMENSIONS

| Carrier Tape Dimensions |         |
|-------------------------|---------|
| <b>Ao</b>               | 5.5 mm  |
| <b>Bo</b>               | 7.5 mm  |
| <b>Ko</b>               | 2.0 mm  |
| <b>Pitch</b>            | 8.0 mm  |
| <b>W</b>                | 16.0 mm |

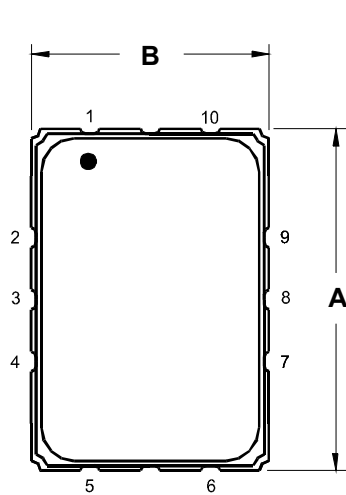
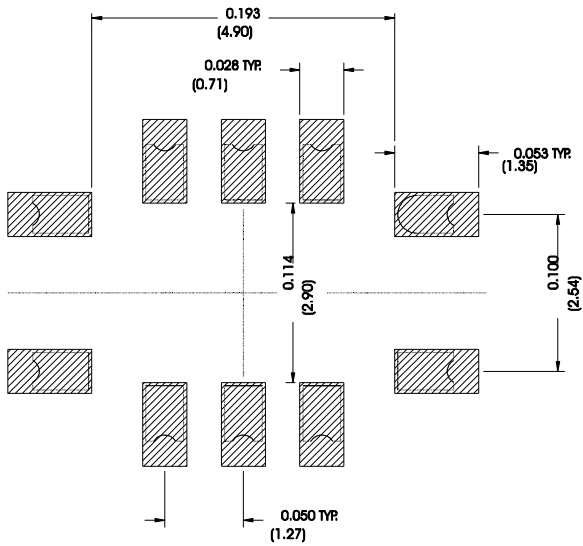


# SMP-03 Case

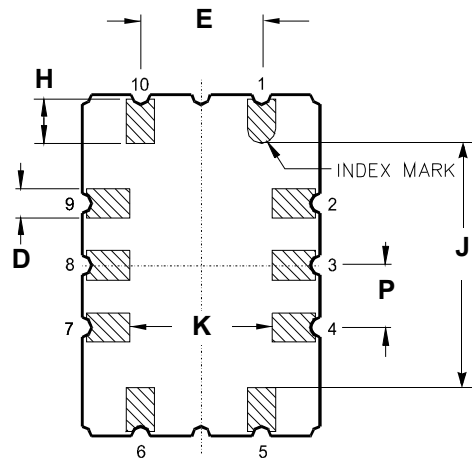
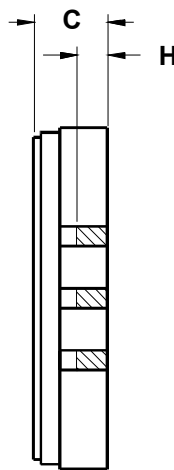
## 10-Terminal Ceramic Surface-Mount Case 7 x 5 mm Nominal Footprint



### Recommended PCB Footprint



TOP VIEW



BOTTOM VIEW

### Case Dimensions

| Dimension | mm   |      |      | Inches |       |       |
|-----------|------|------|------|--------|-------|-------|
|           | Min  | Nom  | Max  | Min    | Nom   | Max   |
| A         | 6.80 | 7.00 | 7.20 | 0.268  | 0.276 | 0.283 |
| B         | 4.80 | 5.00 | 5.20 | 0.189  | 0.197 | 0.205 |
| C         |      | 1.65 | 2.00 |        | 0.065 | 0.079 |
| D         | .47  | 0.60 | .73  | 0.019  | 0.024 | 0.029 |
| E         | 2.41 | 2.54 | 2.67 | 0.095  | 0.100 | 0.105 |
| H         | 0.87 | 1.0  | 1.13 | 0.034  | 0.039 | 0.044 |
| J         | 4.87 | 5.00 | 5.13 | 0.192  | 0.197 | 0.202 |
| K         | 2.87 | 3.00 | 3.13 | 0.113  | 0.118 | 0.123 |
| P         | 1.14 | 1.27 | 1.40 | 0.045  | 0.050 | 0.055 |

### Electrical Connections

| Connection      | Terminals               |
|-----------------|-------------------------|
| Input (Port 1)  | 3                       |
| Output (Port 2) | 8                       |
| Case Ground     | 2, 4, 7, 9              |
| To Be Grounded  | 1, 2, 4, 5, 6, 7, 9, 10 |

### 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                                      |
| Pb Free            |  |