

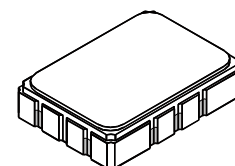
- **Low Insertion Loss**
- **5.0 X 7.0 mm Surface-Mount Case**
- **Complies with Directive 2002/95/EC (RoHS)**
- **Moisture Sensitivity Level: 1**
- **AEC-Q200 Qualified**

#### Absolute Maximum Ratings

| Rating   | Value          | Units |
|--|----------------|-------|
| Maximum Incident Power in Passband                           | +10            | dBm   |
| Max. DC voltage between any 2 terminals                      | 0              | VDC   |
| Storage Temperature Range                                    | -60 to +95     | °C    |
| Suitable for lead-free soldering - Max Soldering Temperature | 260°C for 30 s |       |

**SF2026B**

**114.815 MHz  
SAW Filter**



**SMP-03**

#### Electrical Characteristics

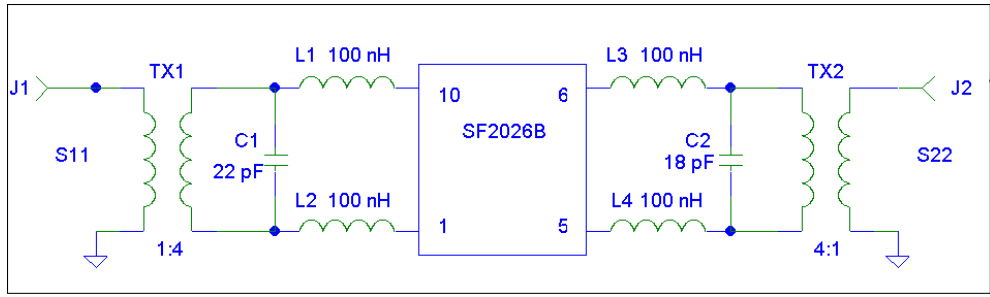
| Characteristic   | Sym   | Notes | Min                               | Typ  | Max | Units |
|--|-------|-------|-----------------------------------|------|-----|-------|
| Center Frequency of IF SAW Filter (RF LO $\pm 50$ ppm correction to 1st IF)            | $f_c$ |       | 114.815                           |      |     | MHz   |
| Insertion Loss   | IL    |       |                                   | 12.5 | 15  | dB    |
| Amplitude Ripple (p-p) between 111.7594.....113.4107 MHz (BW=1.64 MHz $\pm 50$ ppm)    |       |       |                                   |      | 1.3 | dB    |
| Amplitude Ripple (p-p) between 113.5993.....115.2508 MHz (BW=1.64 MHz $\pm 50$ ppm)    |       |       |                                   |      | 1.3 |       |
| Amplitude Ripple (p-p) between 115.3492.....117.8709 MHz (BW=1.64 MHz $\pm 50$ ppm)    |       |       |                                   |      | 1.3 |       |
| Pass Bandwidth of -1.5 dB  |       |       |                                   | 6.30 |     | MHz   |
| Pass Bandwidth of -3 dB  |       |       |                                   | 7.24 |     |       |
| Low side attenuation 80 MHz...102.815 MHz ( $F_c - 12$ MHz)                            |       |       | 38                                | 40   |     | dB    |
| Low side attenuation 102.815 MHz...107.690 MHz ( $F_c - 7.125$ MHz)                    |       |       | 36                                | 38   |     |       |
| Low side attenuation 107.690 MHz...109.690 MHz ( $F_c - 5.125$ MHz)                    |       |       | 28                                | 30   |     |       |
| High side attenuation 121.260 ( $F_c + 6.445$ MHz)...123.860 MHz ( $F_c + 9.045$ MHz)  |       |       | 25                                | 27   |     |       |
| High side attenuation 123.860 MHz...126.815 MHz ( $F_c + 12.00$ MHz)                   |       |       | 36                                | 38   |     |       |
| High side attenuation 126.815 MHz...150.815 MHz ( $F_c + 36.00$ MHz)                   |       |       | 38                                | 40   |     |       |
| Group Delay Ripple (p-p) between 111.7594.....113.4107 MHz (BW=1.64 MHz $\pm 50$ ppm)  |       |       |                                   |      | 80  | ns    |
| Group Delay Ripple (p-p) between 113.5993.....115.2508 MHz (BW=1.64 MHz $\pm 50$ ppm)  |       |       |                                   |      | 80  | ns    |
| Group Delay Ripple (p-p) between 115.3492.....117.8709 MHz (BW=2.510 MHz $\pm 50$ ppm) |       |       |                                   |      | 100 | ns    |
| Operating Temperature Range  | $T_A$ |       | -40                               |      | +85 | °C    |
| Case Style   |       |       | SMP-03 7 x 5 mm Nominal Footprint |      |     |       |
| Lid Symbolization (YY=year, WW=week, S=shift, ## = Sequence Code)                      |       |       | SF2026B, <u>YYWWS##</u>           |      |     |       |

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

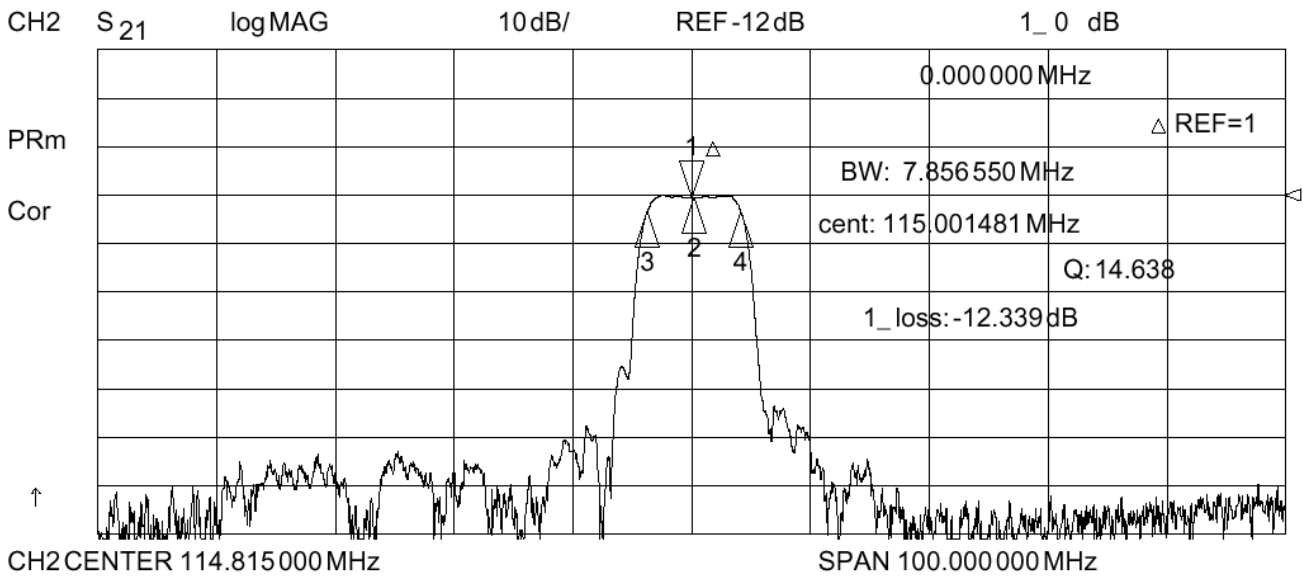
#### NOTES:

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.

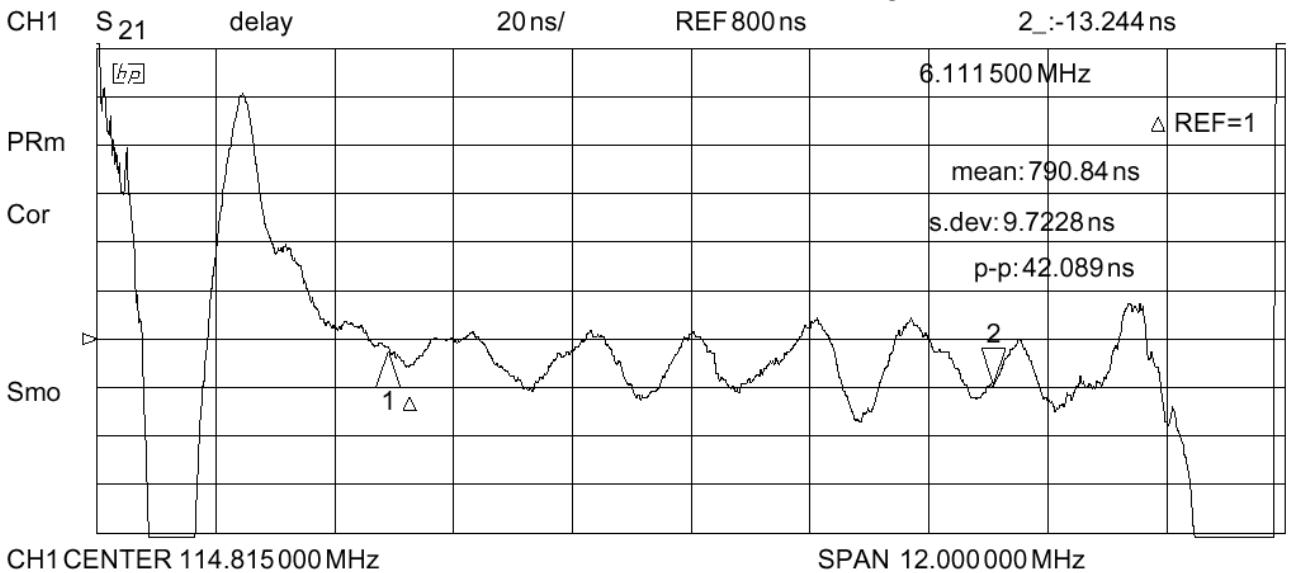
J = 50 Ohms



J = 50 Ohms



28 Aug 2003 09:05:39



28 Aug 2003 09:06:31

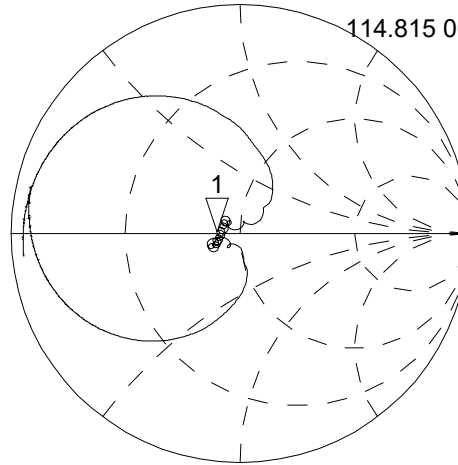
CH1 S<sub>11</sub> 1 U FS

1\_ 40.76 Ω 0.5801 Ω 804.09 pF

114.815 000 MHz

PRm

Cor



↑

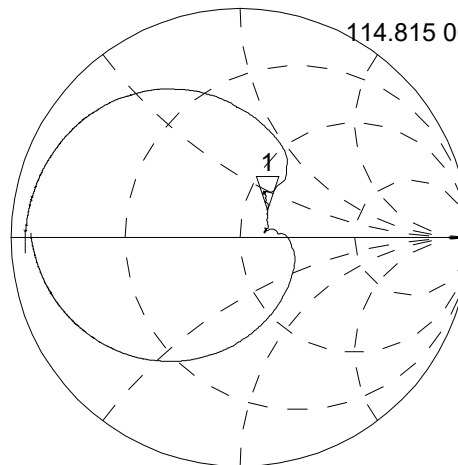
CH2 S<sub>22</sub> 1 U FS

1\_ 61.52 Ω 15.119 Ω 20.958 nH

114.815 000 MHz

PRm

Cor



↑

CENTER 114.815 000 MHz

SPAN 100.000 000 MHz

# SF2026B Recommended Matching

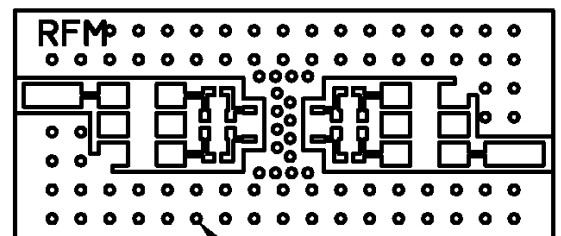
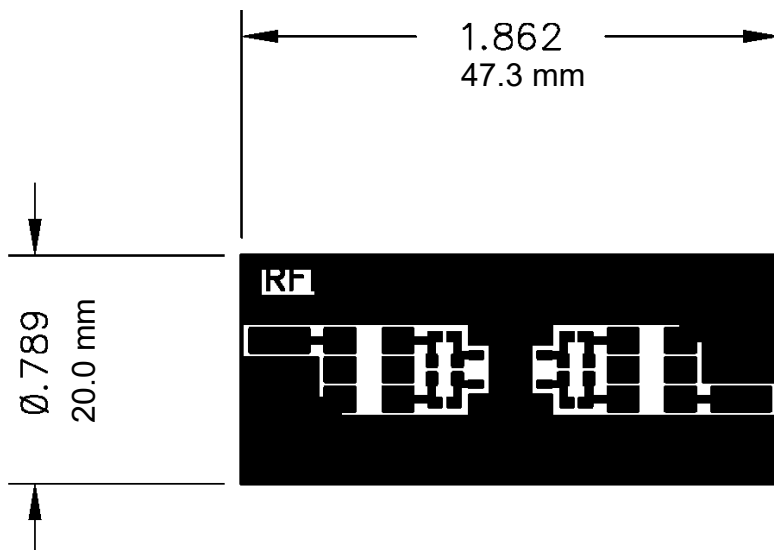
Component for 200 ohm load on Input and Output upon Differential SAW

## Inductor

|                          |                         |
|--------------------------|-------------------------|
| Part Number              | 0603CSR10XJBW           |
| Value                    | 100nH                   |
| Size                     | 0603                    |
| Tolerance                | 5%                      |
| Recommended Manufacturer | Coilcraft 0603CS-series |

## Capacitor

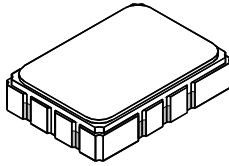
|                          |                |                |
|--------------------------|----------------|----------------|
| Part Number              | 0603CG220J9B20 | 0603CG180J9B20 |
| Value                    | 22 pF          | 18 pF          |
| Size                     | 0603           | 0603           |
| Tolerance                | ±5%            | ±5%            |
| Recommended Manufacturer | Philips        | Philips        |



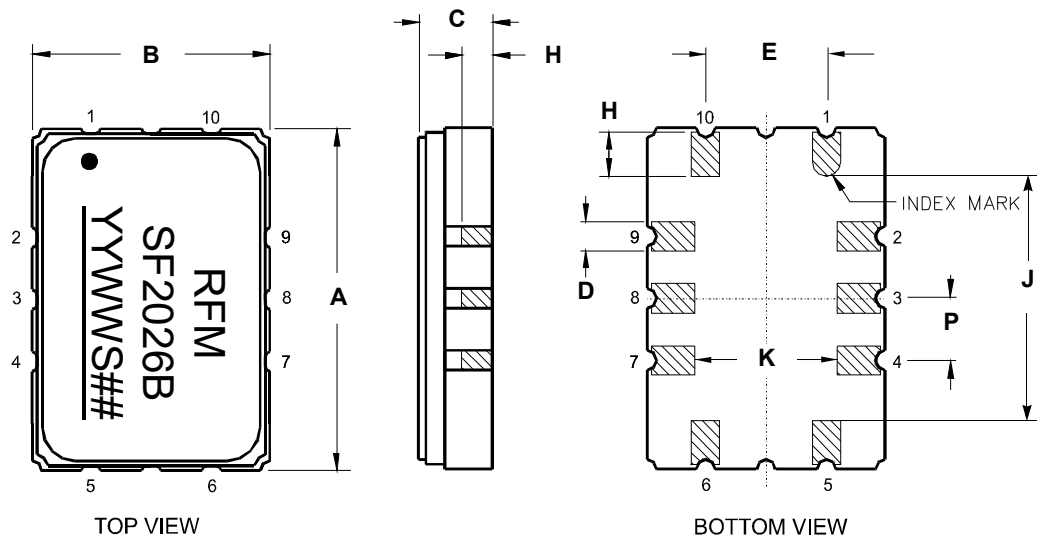
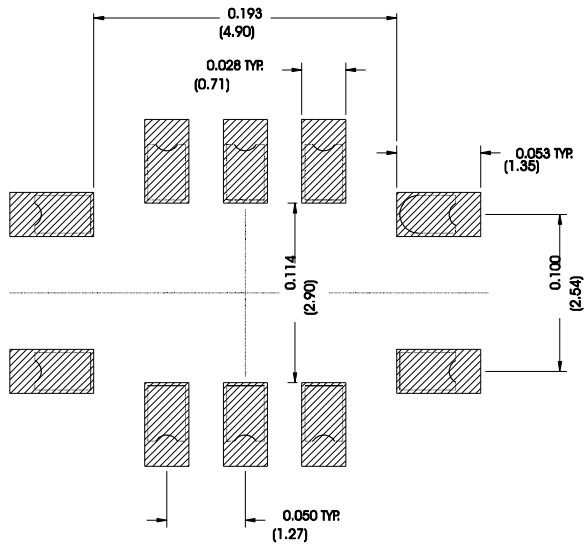
ALL HOLES PLATED THRU - Ø1/32 DRILL

# SMP-03 Case

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



### Recommended PCB Footprint



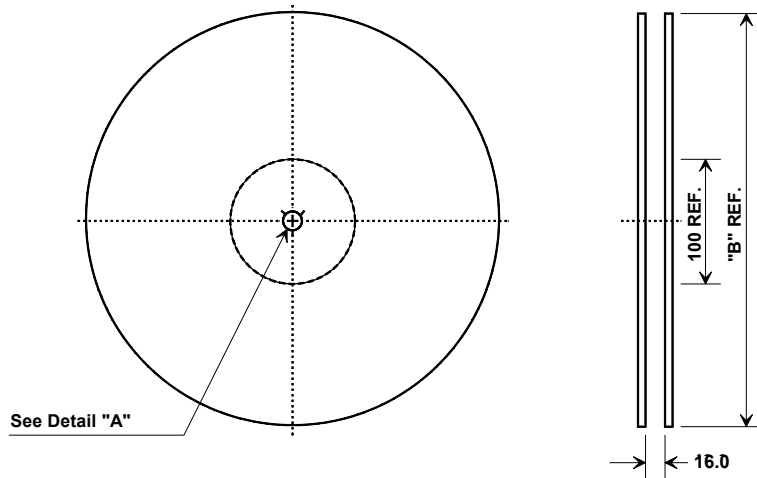
| Case Dimensions |      |      |      |        |       |       |
|-----------------|------|------|------|--------|-------|-------|
| Dimension       | mm   |      |      | Inches |       |       |
|                 | Min  | Nom  | Max  | Min    | Nom   | Max   |
| A               | 6.80 | 7.00 | 7.20 | 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 |

| Materials              |  |
|------------------------|--|
| Solder Pad Termination | Au plating 30 - 60 ulnches (76.2-152 uM) over 80-200 ulnches (203-508 uM) Ni.    |
| Lid                    | Fe-Ni-Co Alloy Electroless Nickel Plate (8-11% Phosphorus) 100-200 ulnches Thick |
| Body                   | Al <sub>2</sub> O <sub>3</sub> Ceramic   |

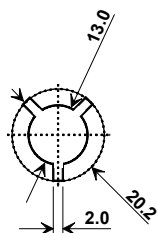
| Electrical Connections        |                  |                         |
|-------------------------------|------------------|-------------------------|
|                               | Connection       | Terminals               |
| Port 1                        | Input or Return  | 10                      |
|                               | Return or Input  | 1                       |
| Port 2                        | Output or Return | 5                       |
|                               | Return or Output | 6                       |
|                               | Ground           | All others              |
| <b>Single Ended Operation</b> |                  | <b>Return is ground</b> |
| <b>Differential Operation</b> |                  | <b>Return is hot</b>    |

## Tape and Reel Specifications

Tape and Reel Standard per ANSI/EIA-481

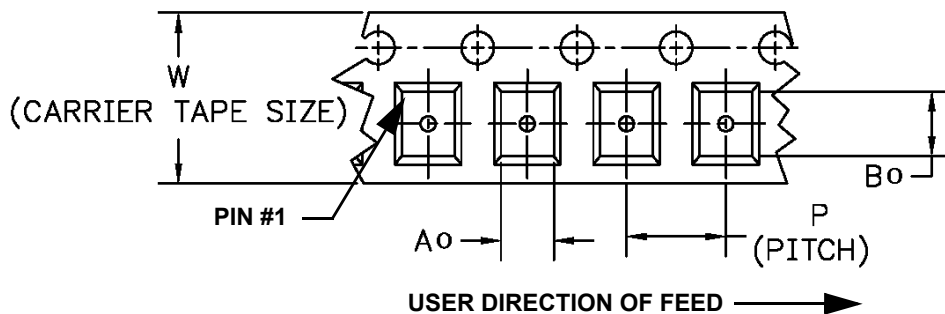
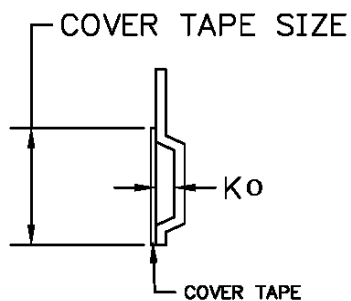


| "B" Nominal Size |             | Quantity Per Reel |
|------------------|-------------|-------------------|
| Inches           | millimeters |                   |
| 7                | 178         | 500               |
| 13               | 330         | 2000              |



### 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 |



## 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.

