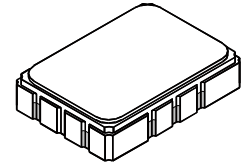


SF2025B

**259.861 MHz
SAW Filter**



SMP-03

- *Designed for SDARS Receiver IF Application*
- *Low Insertion Loss*
- *5.0 X 7.0 mm Surface-Mount Case*
- *Differential Input and Output*
- *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 | 30 | VDC |
| Storage Temperature Range | -40 to +105 | °C |
| Suitable for lead-free soldering - Max Soldering Temperature | 260°C for 30 s | |

Electrical Characteristics

| Characteristic | Sym | Notes | Min | Typ | Max | Units |
|---|---|---|-------------------|---------|------|-------------------|
| Nominal Center Frequency | f_c | | | 259.861 | | MHz |
| Passband | Minimum Insertion Loss | IL | | 13.3 | 15.5 | dB |
| | | 1.5 dB Passband | BW _{1.5} | 13.8 | | |
| | | 3 dB Passband | BW ₃ | 14.5 | | |
| Amplitude Ripple from fc-6.354 MHz to fc-4.2885 MHz (-20 to 85°C) | | | | | 1 | dB _{p-p} |
| Amplitude Ripple from fc-6.354 MHz to fc-4.2885 MHz (-40 to -20°C) | | | | | 1.5 | |
| Amplitude Ripple from fc-4.4965 MHz to fc-2.431 MHz | | | | | 1 | |
| Amplitude Ripple from fc-2.639 MHz to fc+0.079 MHz | | | | | 1 | |
| Amplitude Ripple from fc-0.079 MHz to fc+2.639 MHz | | | | | 1 | |
| Amplitude Ripple from fc+2.431 MHz to fc+4.4965 MHz | | | | | 1 | |
| Amplitude Ripple from fc+4.2885 MHz to fc+6.354 MHz (-40 to 60°C) | | | | | 1 | |
| Amplitude Ripple from fc+4.2885 MHz to fc+6.354 MHz (60 to 85°C) | | | | | 1.15 | |
| Group Delay Variation over fc-6.354 MHz to fc-2.431 MHz and from fc+2.431 MHz to fc+6.354 MHz | GDV1 | | | 40 | 60 | ns _{p-p} |
| | | Group Delay Variation over fc±2.639 MHz | GDV2 | 40 | 120 | |
| Rejection | fc-28 to fc-12 MHz and fc+12 to fc+33 MHz | | 36 | 43 | | dB |
| | | fc-12 to fc-10.5 MHz | 30 | 40 | | |
| | | fc+9 to fc+12 MHz | 18 | 36 | | |
| Operating Temperature Range | T _A | | -40 | | +85 | °C |
| Frequency Temperature Coefficient | | | | -18 | | ppm/°C |
| Differential Input and Output Impedance | L & C Match to 150 ohms | | | | | |
| Case Style | SMP-03 7 x 5 mm Nominal Footprint | | | | | |
| Lid Symbolization (YY=year, WW=week, S=shift, ##=sequence code) | RFM, SF2025B, YYWWS## | | | | | |

Electrical Connections

| Connection | Terminals |
|----------------------|------------|
| Port 1 Hot | 10 |
| Port 1 Ground Return | 1 |
| Port 2 Hot | 5 |
| Port 2 Ground Return | 6 |
| Case 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.

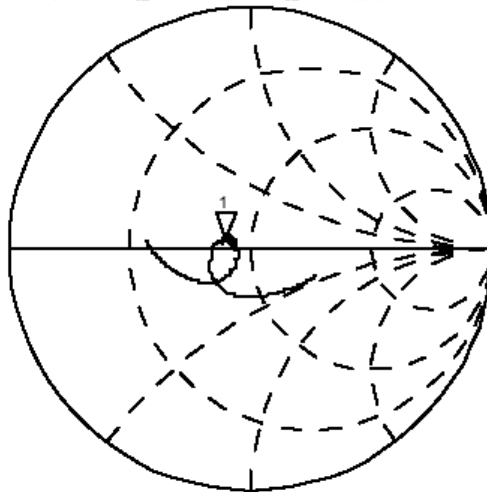
CH1 S11 1 UFS 1: 40 . 799 3. 3672 2. 0623 nH 259 . 861 000 MHz

hp

Cor

PRm

HId



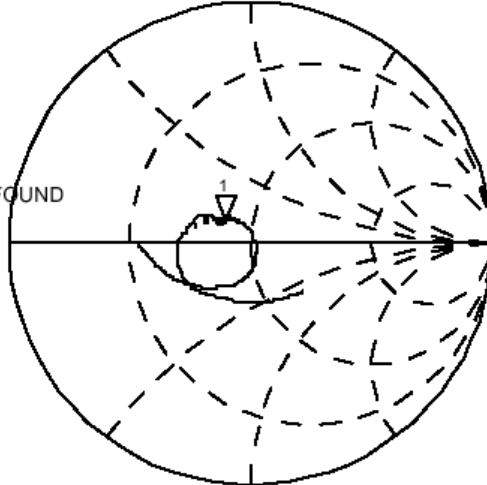
CH2 S22 1 UFS 1: 39 . 922 7. 5566 4. 6282 nH 259 . 861 000 MHz

Cor

CH2 TARGET VALUE NOT FOUND

PRm

HId



CH2 Markers

BW : 0. 000000 MHz

cent : 0. 000000 MHz

Q: 0. 0000

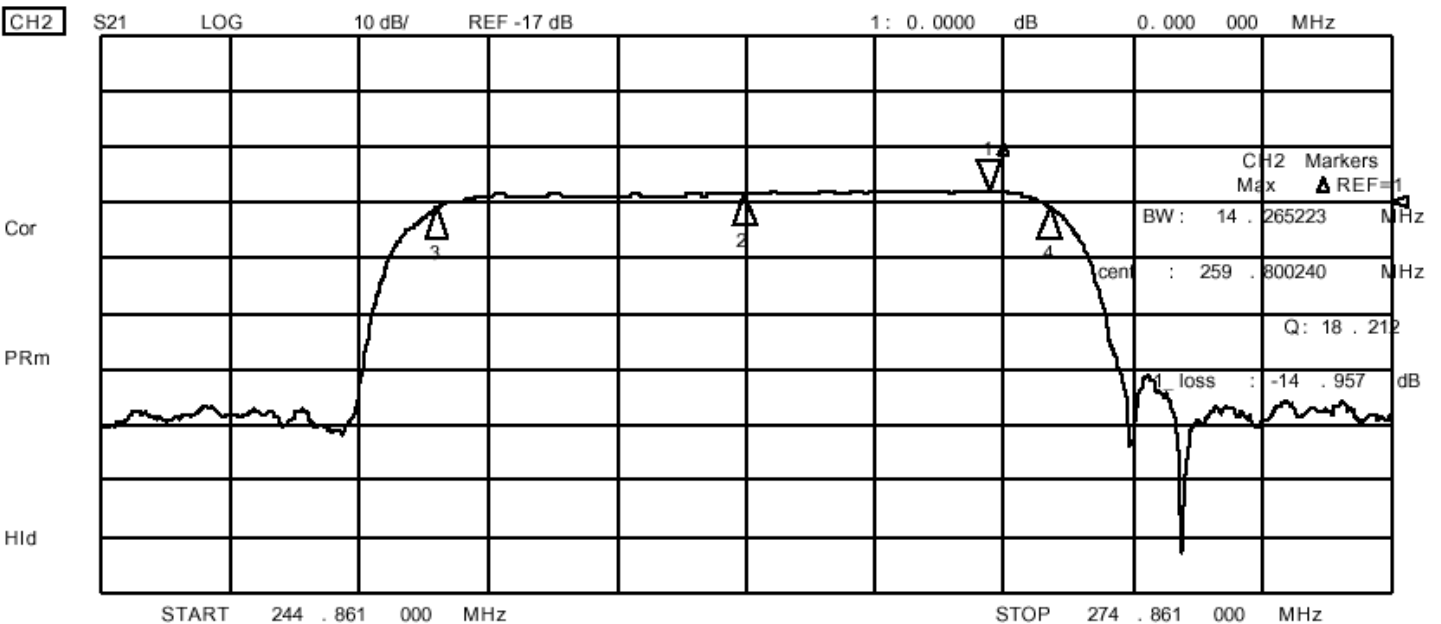
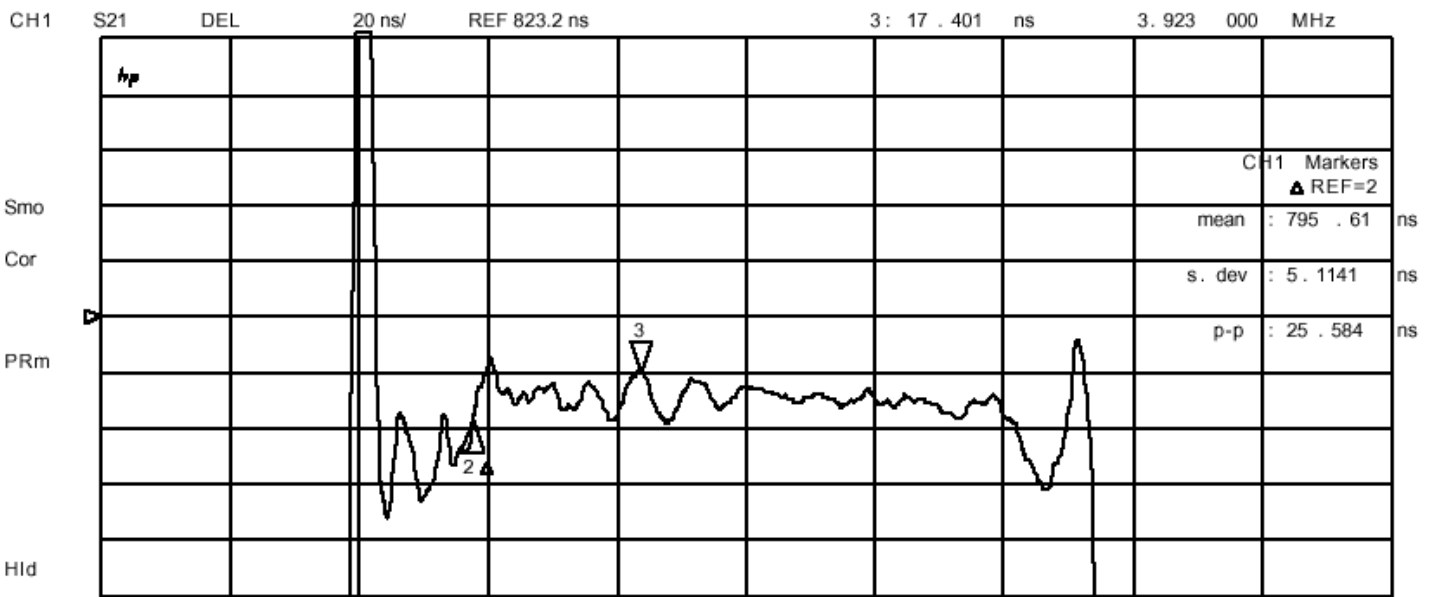
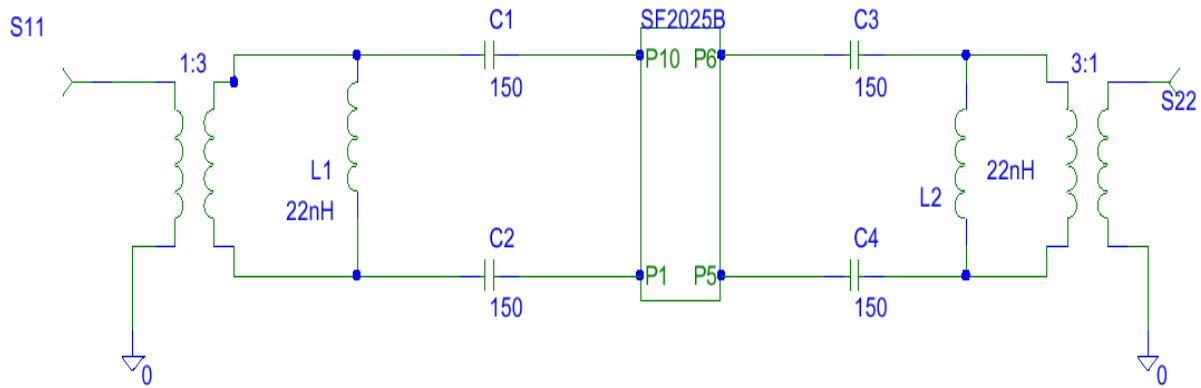
1_ loss : 39 . 922

START 244 . 861 000 MHz

STOP 274 . 861 000 MHz

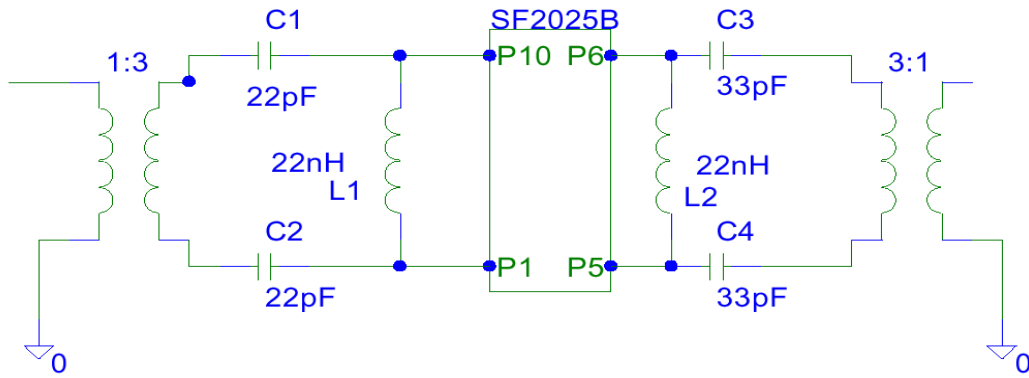
SF2025B
50 Ohm System

Matching Circuits



Matching Circuits

better rejection tuning



CH1 S11 1 UFS 1: 50 .018 11 .121 6.8112 nH 259 .861 000 MHz

#p

Cor

PRm

Hid

CH2

S22 1 UFS 1: 42 .555 11 .117 6.8089 nH 259 .861 000 MHz

Cor

CH2 TARGET VALUE NOT FOUND

PRm

Hid

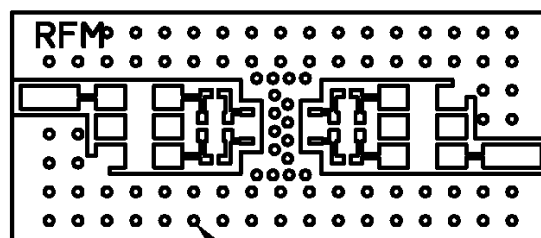
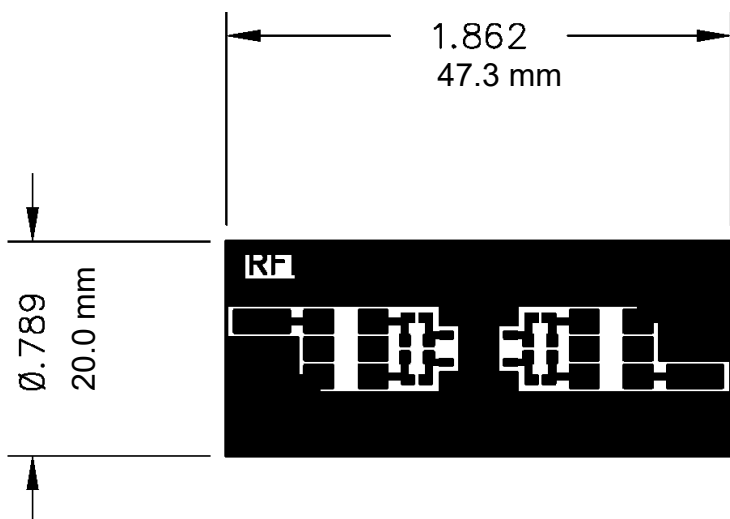
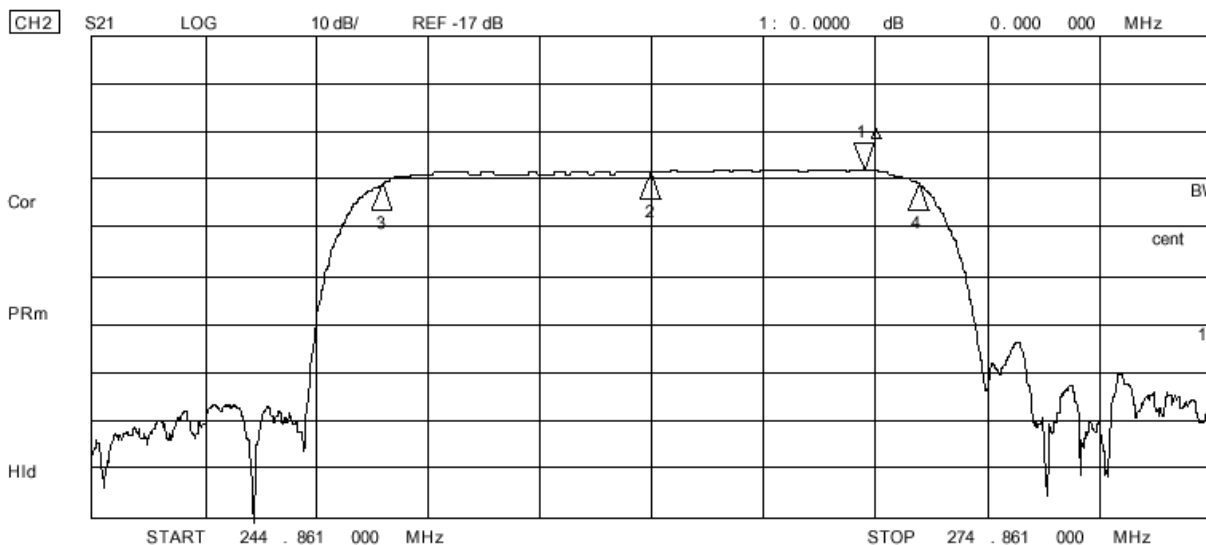
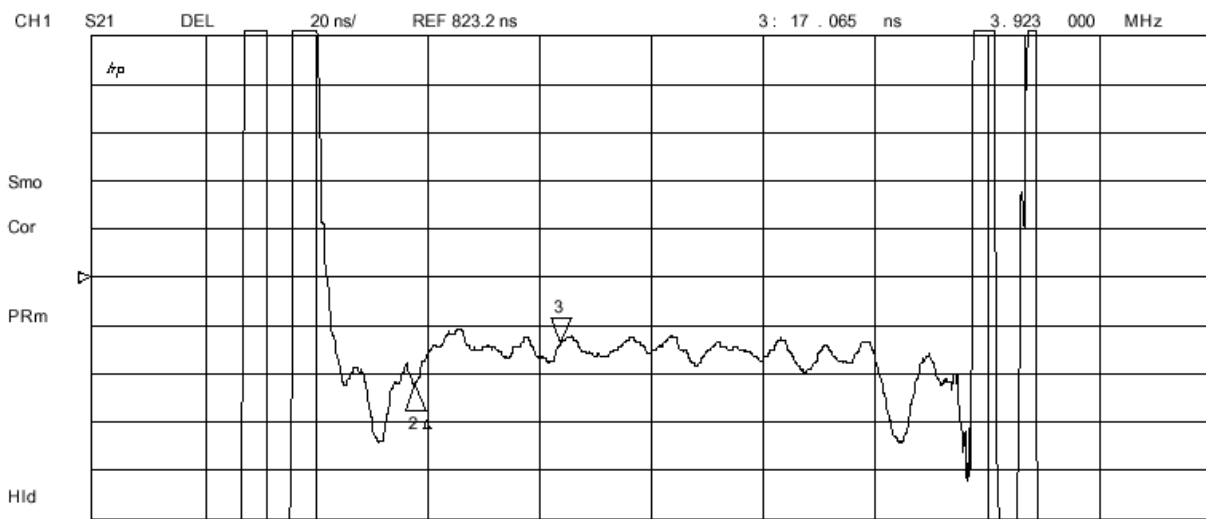
START 244 .861 000 MHz

STOP 274 .861 000 MHz

SF2025B
50 Ohm System

CH2 Markers
 BW: 0.000000 MHz
 cent: 0.000000 MHz
 Q: 0.0000
 1_loss: 42.555 Ω

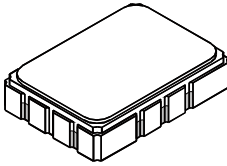
22 Dec 2003 16:58:01



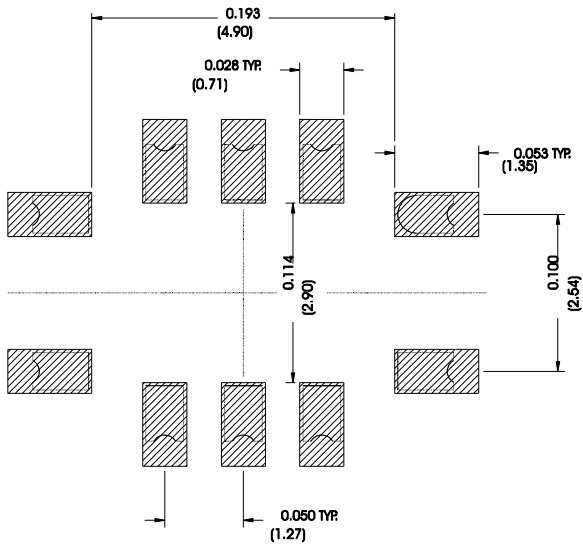
ALL HOLES PLATED THRU - ϕ 1/32 DRILL

SMP-03 Case

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



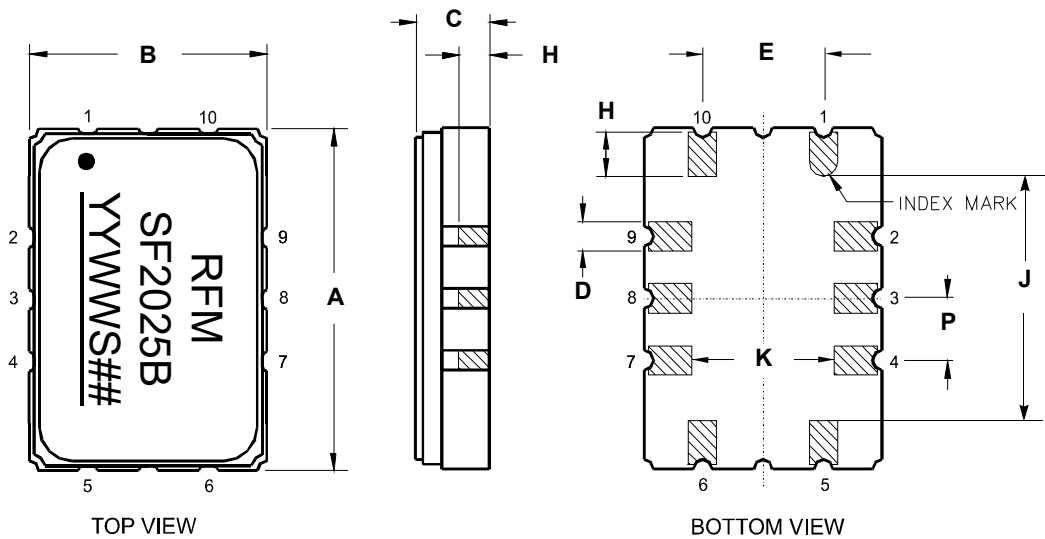
Recommended PCB Footprint



| 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 |

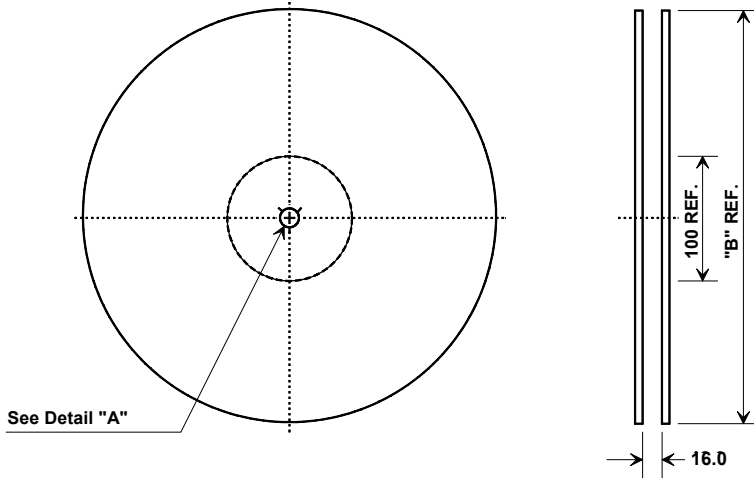
| Materials | |
|------------------------|---|
| Solder Pad Termination | Au plating 30 - 60 μmches (76.2-152 μm) over 80-200 μmches (203-508 μm) Ni. |
| Lid | Fe-Ni-Co Alloy Electroless Nickel Plate (8-11% Phosphorus) 100-200 μmches Thick |
| Body | Al ₂ O ₃ Ceramic |

| 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 |
| Single Ended Operation | | Return is ground |
| Differential Operation | | Return is hot |

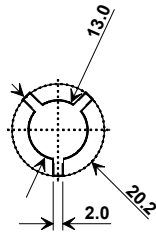


Tape and Reel Specifications

Tape and Reel Standard per ANSI/EIA-481



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



COMPONENT ORIENTATION and DIMENSIONS

| Carrier Tape Dimensions | |
|-------------------------|---------|
| A_o | 5.5 mm |
| B_o | 7.5 mm |
| K_o | 2.0 mm |
| Pitch | 8.0 mm |
| W | 16.0 mm |

