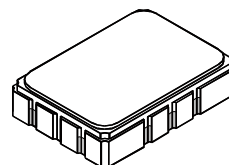




- **Designed for SDARS Receiver IF Application**
- **Low Insertion Loss**
- **5.0 X 7.0 mm Surface-Mount Case**
- **Differential Input and Output**
- **Complies with Directive 2002/95/EC (RoHS)**

**SF2025B****259.861 MHz
SAW Filter****SMP-03****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	1		259.861		MHz
Passband Minimum Insertion Loss	IL			13.3	15.5	dB
1.5 dB Passband	$BW_{1.5}$			13.8		MHz
3 dB Passband	BW_3			14.5		MHz
Amplitude Ripple from fc-6.354 MHz to fc-4.2885 MHz (-20 to 85°C)					1	
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		
fc-12 to fc-10.5 MHz			30	40		
fc+9 to fc+12 MHz			18	36		
Operating Temperature Range	T_A	1	-40		+85	°C
Frequency Temperature Coefficient				-18		ppm/°C
Differential Input and Output Impedance			L & C Match to 150 ohms			
Case Style		6	SMP-03 7 x 5 mm Nominal Footprint			
Lid Symbolization (YY=year, WW=week, S=shift) See note 4			RFM SF2025B YYWWWS			

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

Notes:

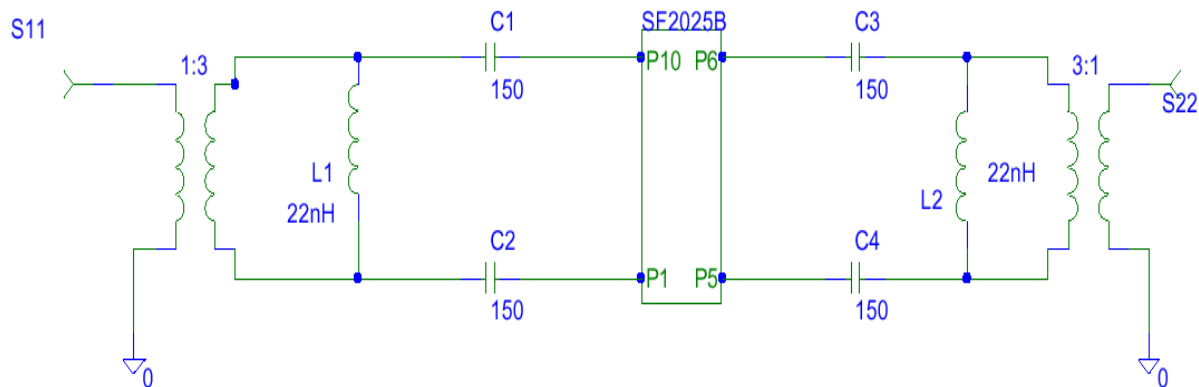
1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to the specified demonstration board with impedance matching to 50 Ω and measured with 50 Ω network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency, f_c .
3. Rejection is measured as attenuation below the minimum IL point in the passband. Rejection in final user application is dependent on PCB layout and external impedance matching design. See Application Note No. 42 for details.
4. "LRIP" or "L" after the part number indicates "low rate initial production" and "ENG" or "E" indicates "engineering prototypes."
5. The design, manufacturing process, and specifications of this filter are subject to change.
6. Tape and Reel Standard Per ANSI / EIA 481.
7. Either Port 1 or Port 2 may be used for either input or output in the design. However, impedances and impedance matching may vary between Port 1 and Port 2, so that the filter must always be installed in one direction per the circuit design.
8. US and international patents may apply.
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259.861 MHz

SAW Filter

Matching Circuits



CH1 S11 1 UFS 1: 40.799 3.3672 2.0623 nH 259.861000 MHz

Cor

PRm

Cor

PRm

HLd

CH2 S22 1 UFS 1: 39.922 7.5566 4.6282 nH 259.861000 MHz

Cor

PRm

HLd

CH2 TARGET VALUE NOT FOUND

START 244.861000 MHz

STOP 274.861000 MHz

SF2025B
50 Ohm System

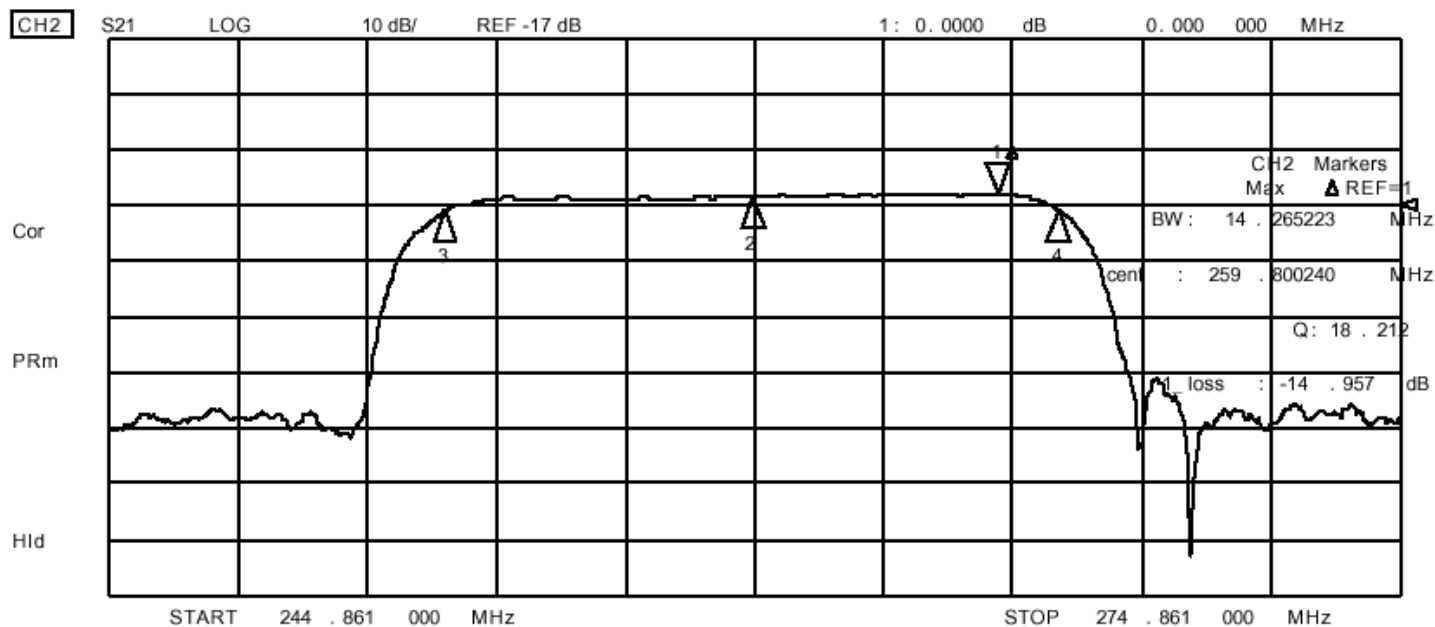
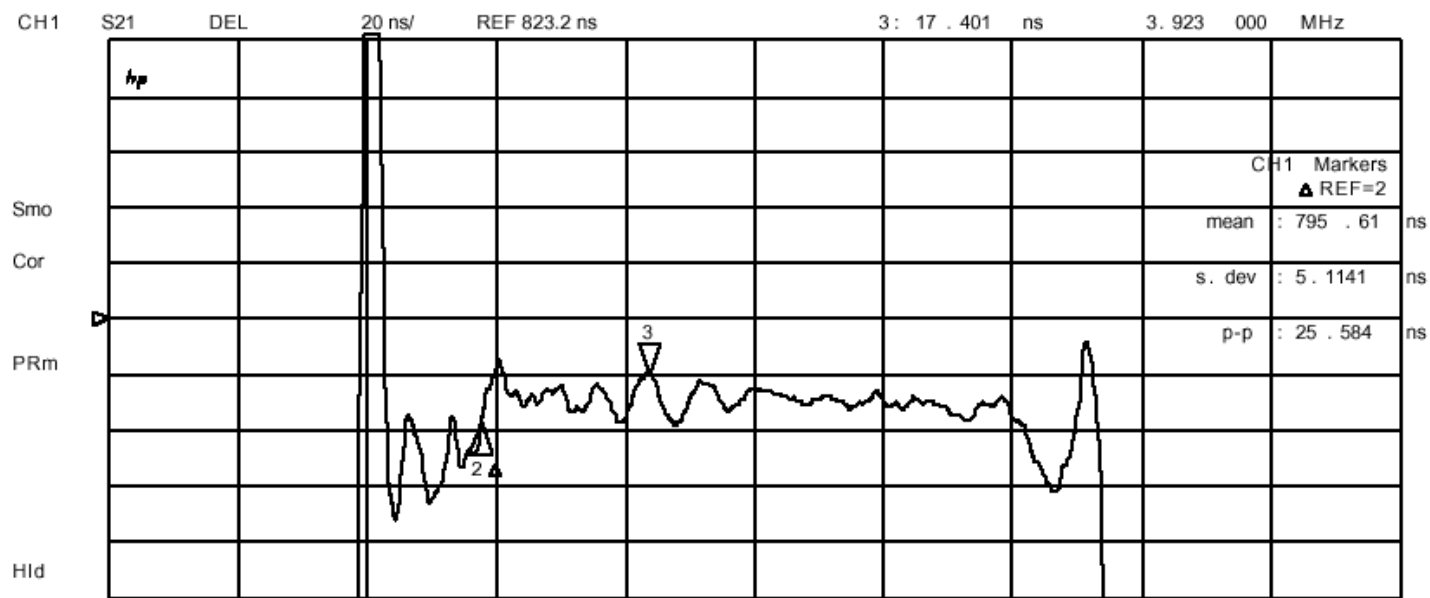
CH2 Markers

BW: 0.000000 MHz

cent: 0.000000 MHz

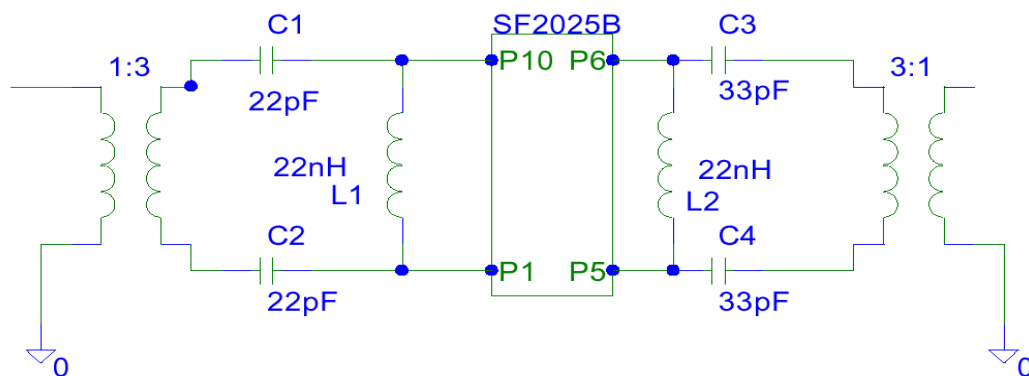
Q: 0.0000

1_loss: 39.922



Matching Circuits

better rejection tuning



CH1 S11 1 UFS 1: 50 . 018 11 . 121 6. 8112 nH 259 . 861 000 MHz

Cor

PRm

Hid

CH2 S22 1 UFS 1: 42 . 555 11 . 117 6. 8089 nH 259 . 861 000 MHz

CH2 TARGET VALUE NOT FOUND

Cor

PRm

Hid

START 244 . 861 000 MHz

STOP 274 . 861 000 MHz

SF2025B
50 Ohm System

CH2 Markers

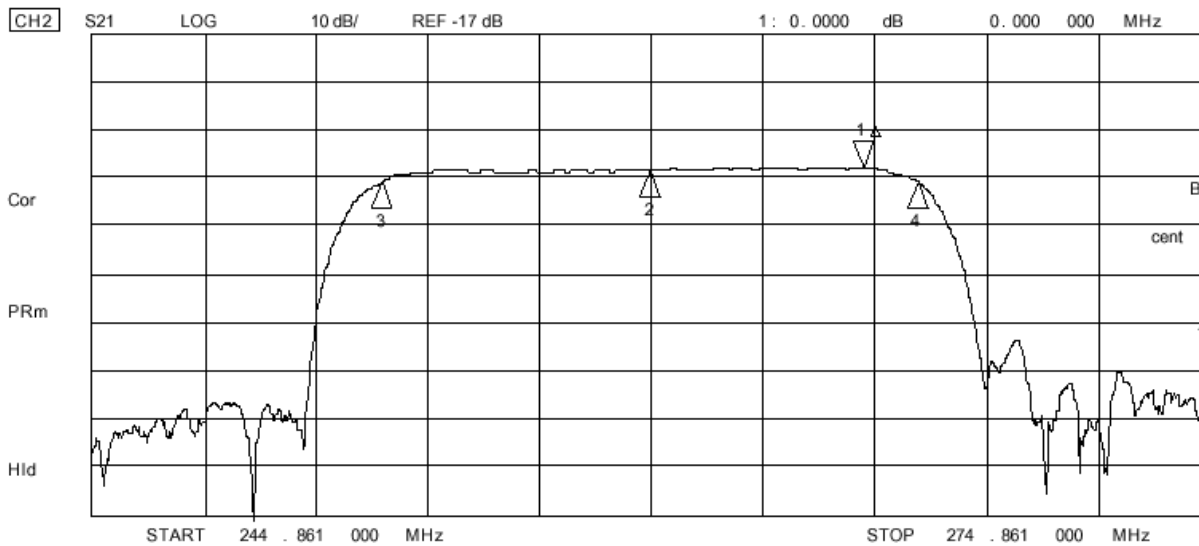
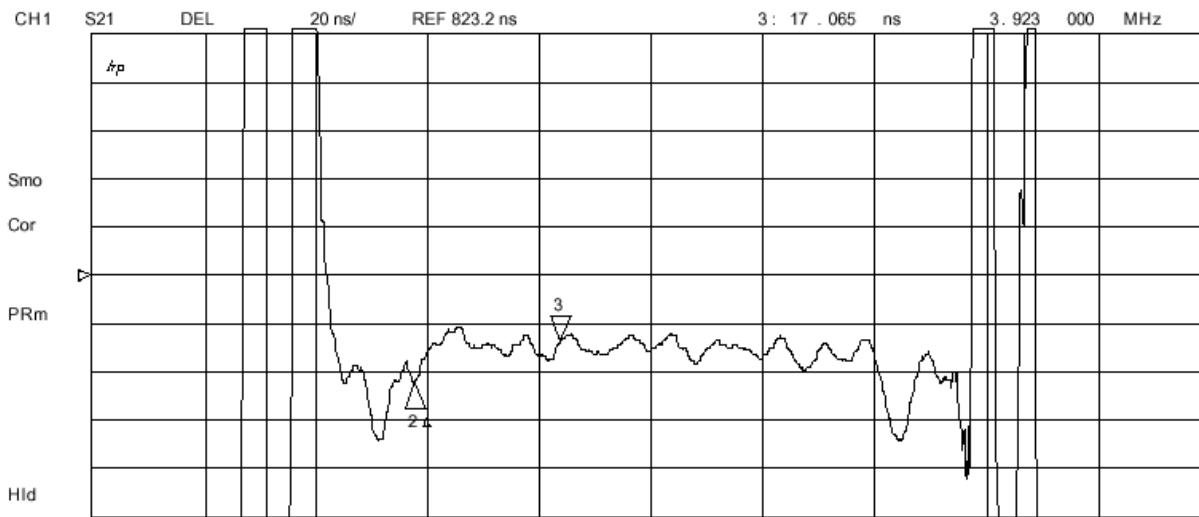
BW: 0. 000000 MHz

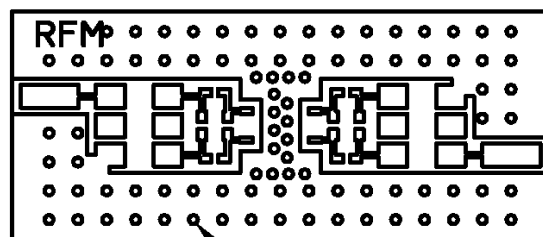
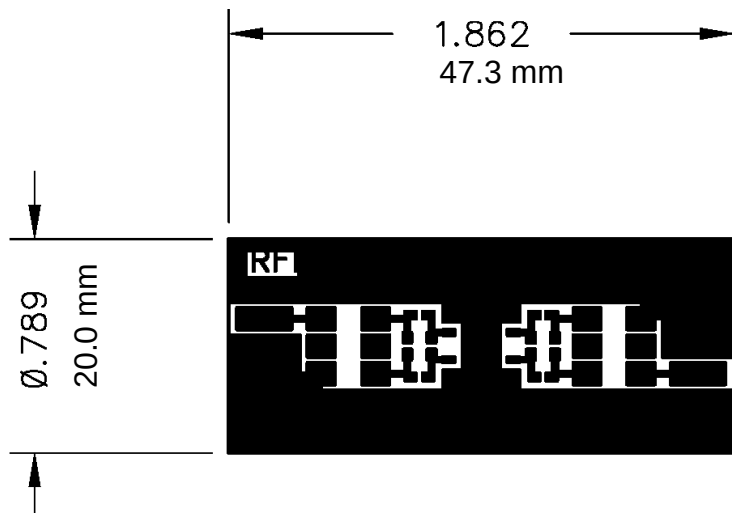
cent: 0. 000000 MHz

Q: 0. 0000

1_loss: 42 . 555 Ω

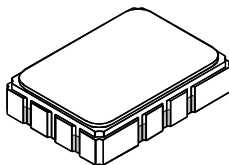
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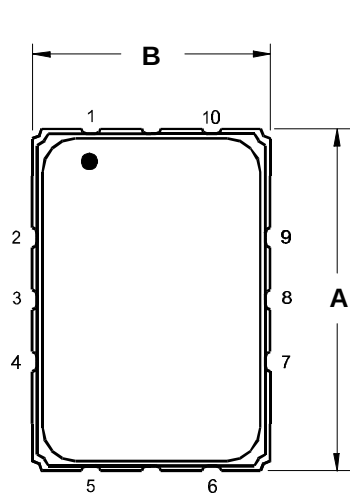
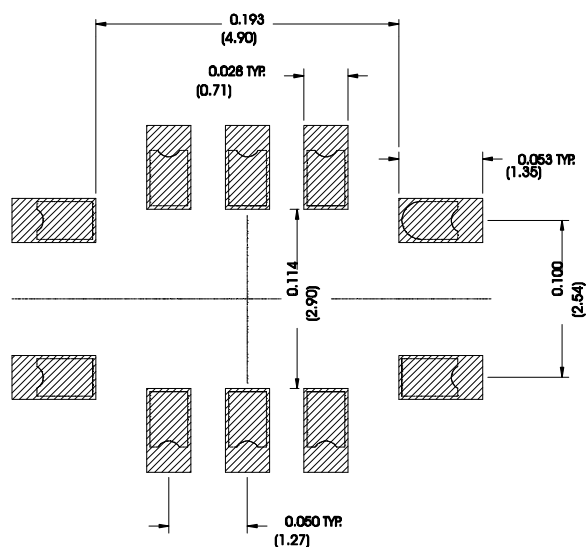


ALL HOLES PLATED THRU - Ø1/32 DRILL

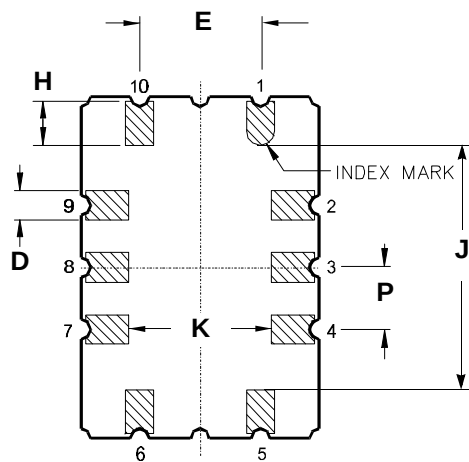
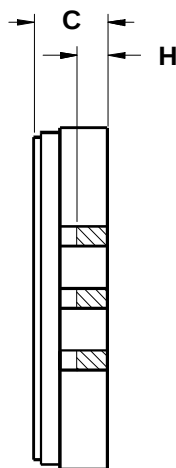
SMP-03 Case

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

Recommended PCB Footprint



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

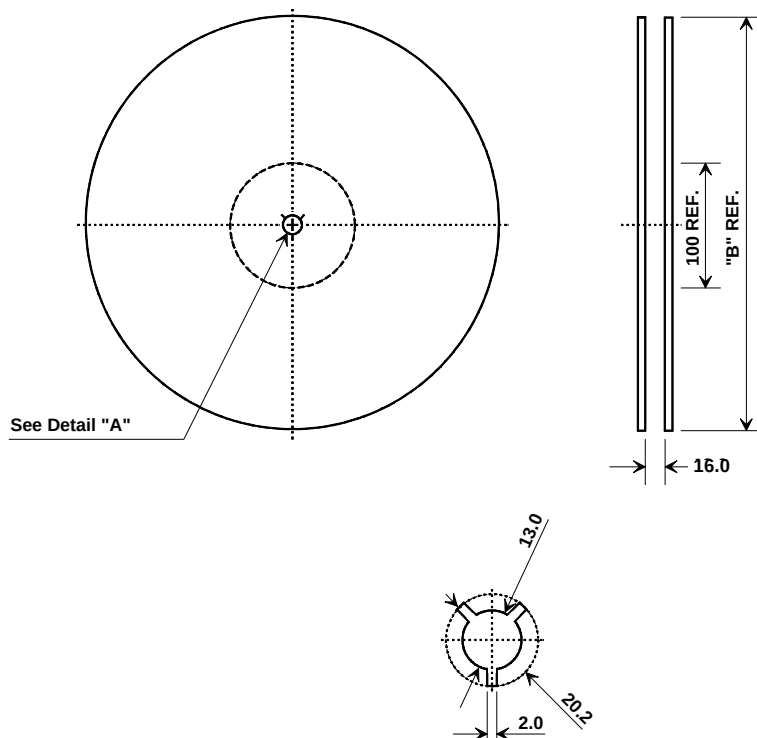
Materials

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

Electrical Connections

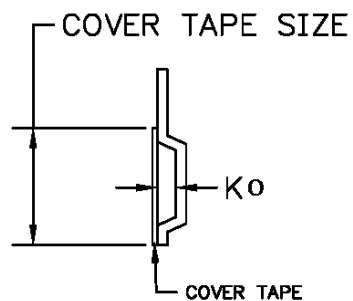
Connection		Terminals
Port 1	Input or Return	10
	Return or Input	1
Port 2	Output or Return	5
	Return or Output	6
Ground		All others
Single Ended Operation		Return is ground
Differential Operation		Return is hot

Tape and Reel Specifications



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

COMPONENT ORIENTATION and DIMENSIONS



Carrier Tape Dimensions	
Ao	5.5 mm
Bo	7.5 mm
Ko	2.0 mm
Pitch	8.0 mm
W	16.0 mm

