



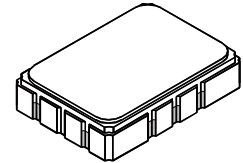
THE DATASHEET OF SF2025B



- **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**

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			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		
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.

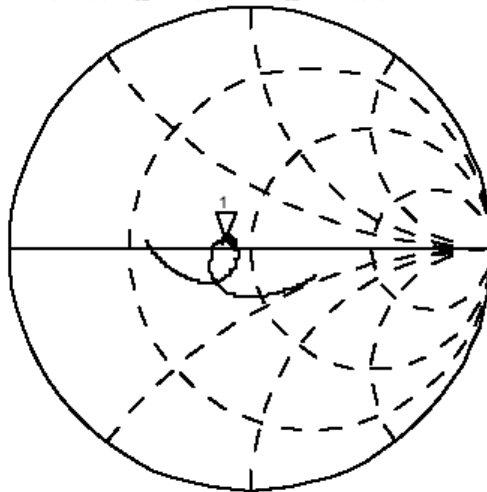
CH1 S11 1 UFS 1: 40 . 799 3. 3672 2. 0623 nH 259 . 861 000 MHz

hp

Cor

PRm

HId



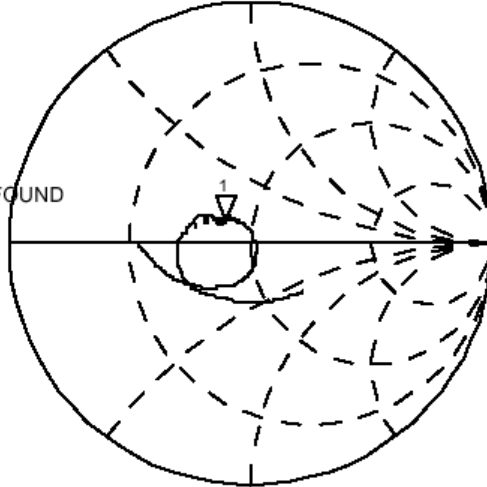
CH2 S22 1 UFS 1: 39 . 922 7. 5566 4. 6282 nH 259 . 861 000 MHz

Cor

CH2 TARGET VALUE NOT FOUND

PRm

HId



CH2 Markers

BW : 0. 000000 MHz

cent : 0. 000000 MHz

Q: 0. 0000

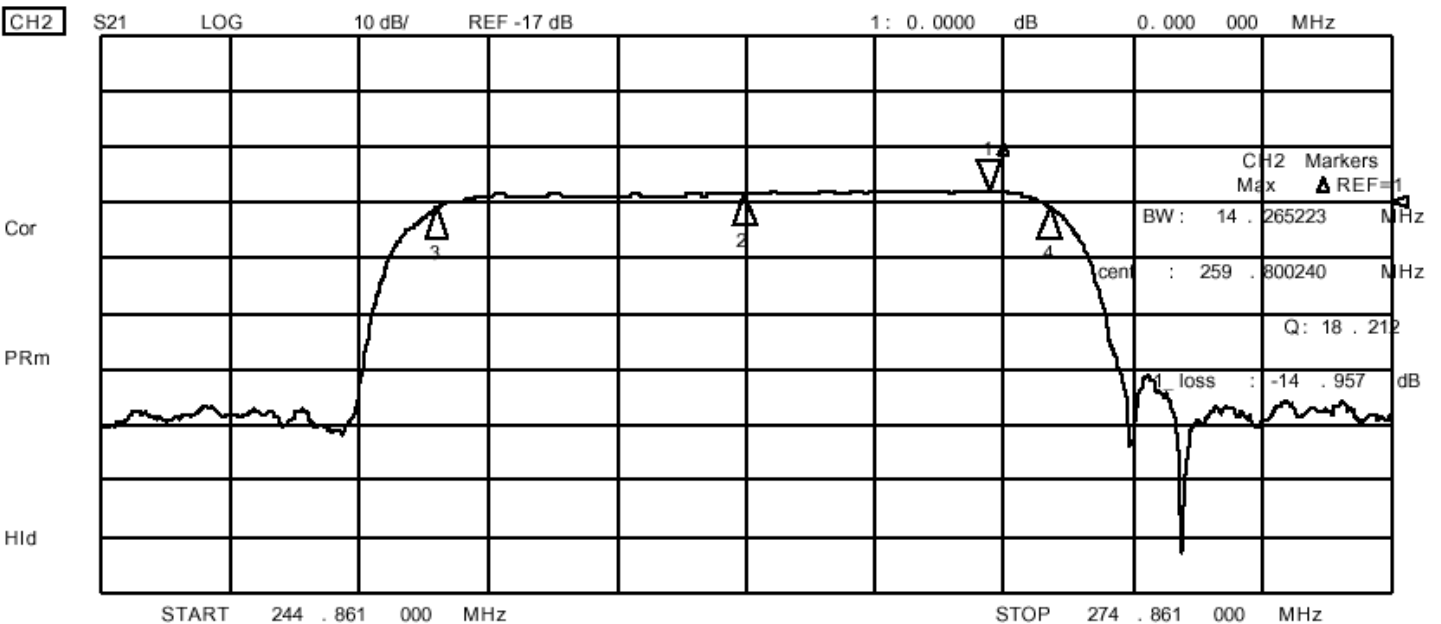
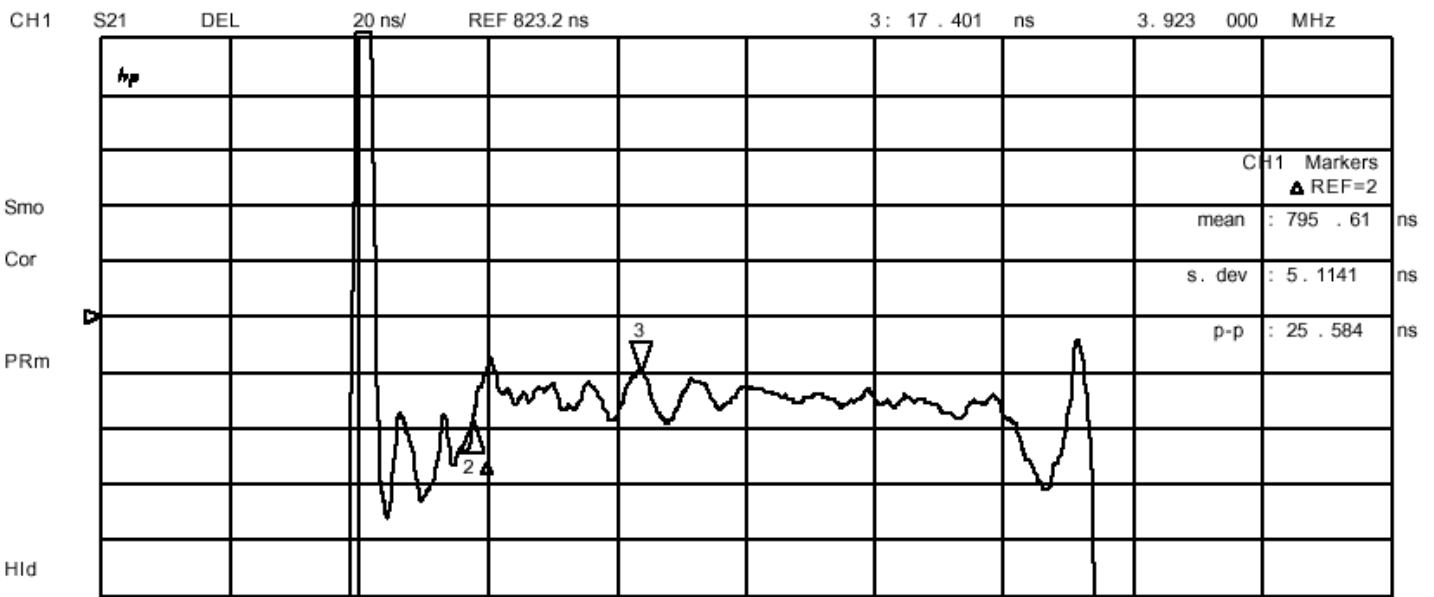
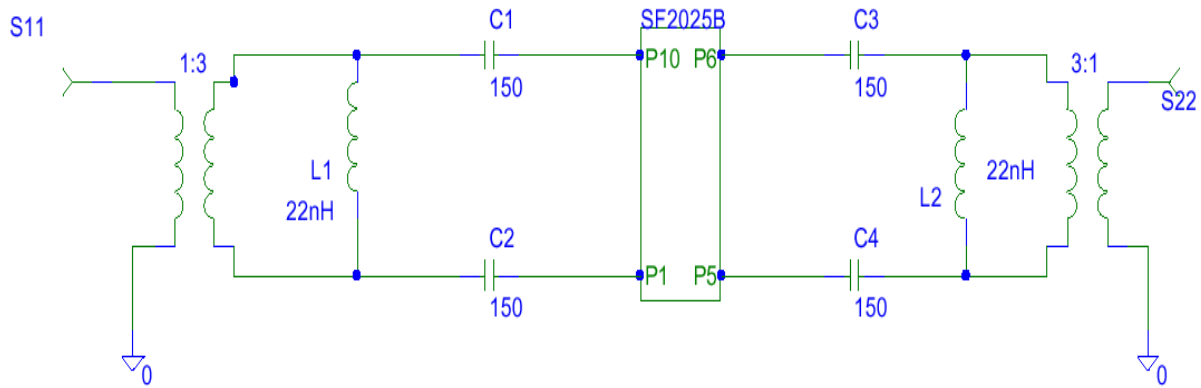
1_ loss : 39 . 922

START 244 . 861 000 MHz

STOP 274 . 861 000 MHz

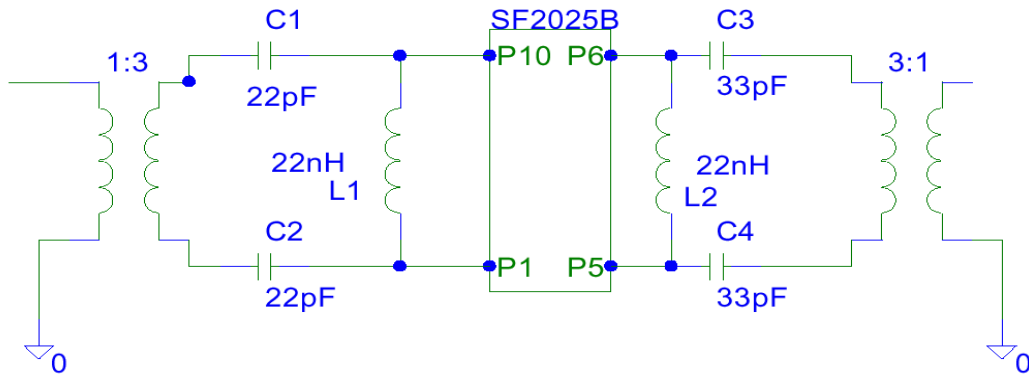
SF2025B
50 Ohm System

Matching Circuits



Matching Circuits

better rejection tuning



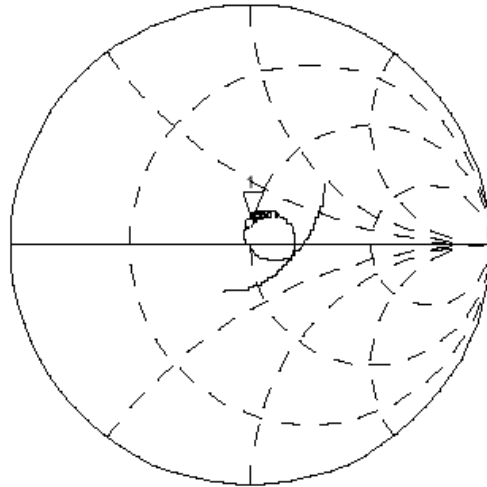
CH1 S11 1 UFS 1: 50 .018 11 .121 6.8112 nH 259 .861 000 MHz

#p

Cor

PRm

Hid



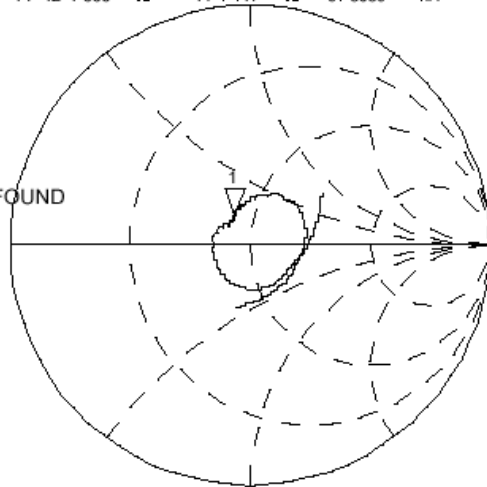
CH2 S22 1 UFS 1: 42 .555 11 .117 6.8089 nH 259 .861 000 MHz

CH2 TARGET VALUE NOT FOUND

Cor

PRm

Hid



CH2 Markers

BW: 0.000000 MHz

cent: 0.000000 MHz

Q: 0.0000

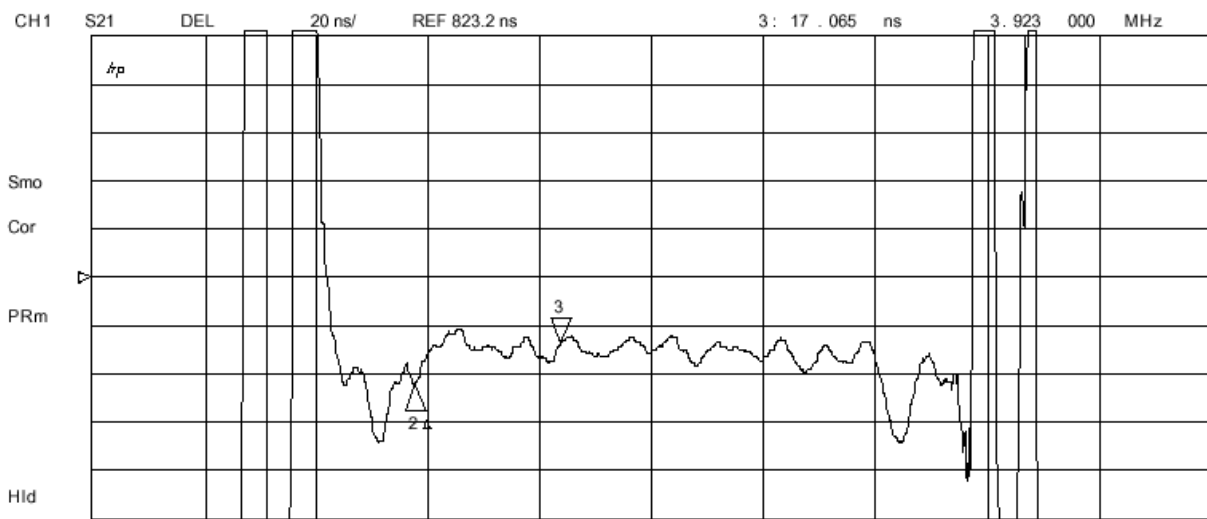
1_loss: 42.555 Ω

START 244 .861 000 MHz

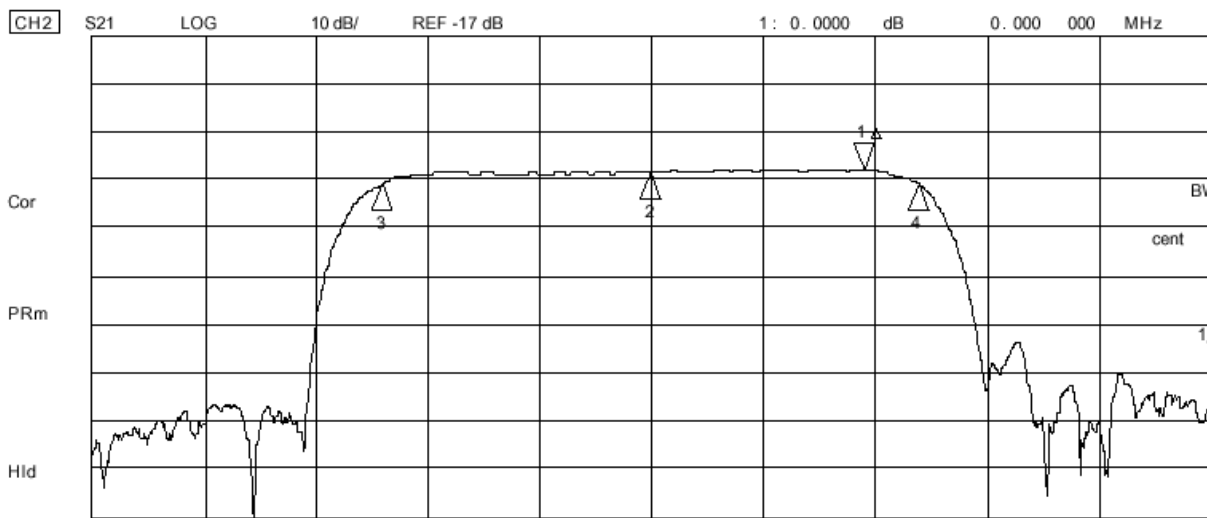
STOP 274 .861 000 MHz

SF2025B
50 Ohm System

22 Dec 2003 16:58:01



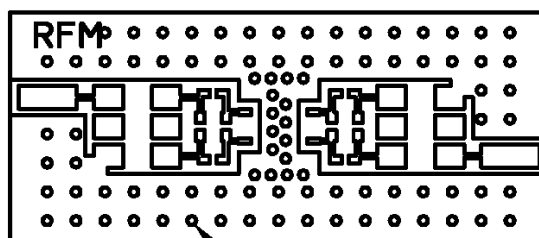
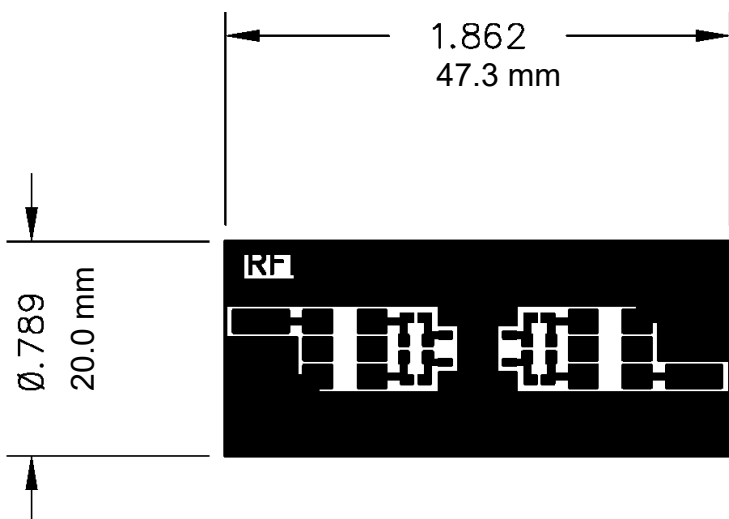
CH1 Markers
 Δ REF=2
 mean : 793 . 54 ns
 s. dev : 4. 4506 ns
 p-p : 23 . 142 ns



CH2 Markers
 Max Δ REF=1
 BW: 14 . 376387 MHz
 cent : 259 . 844175 MHz
 Q: 18 . 074
 1_loss : -14 . 984 dB

START 244 . 861 000 MHz

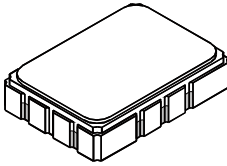
STOP 274 . 861 000 MHz



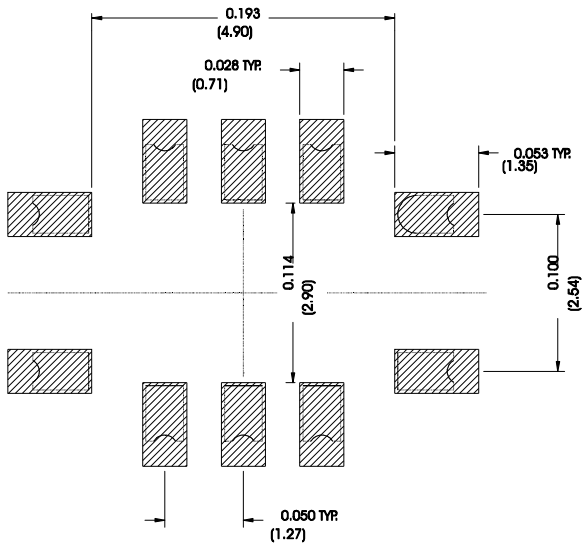
ALL HOLES PLATED THRU - ϕ 1/32 DRILL

SMP-03 Case

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



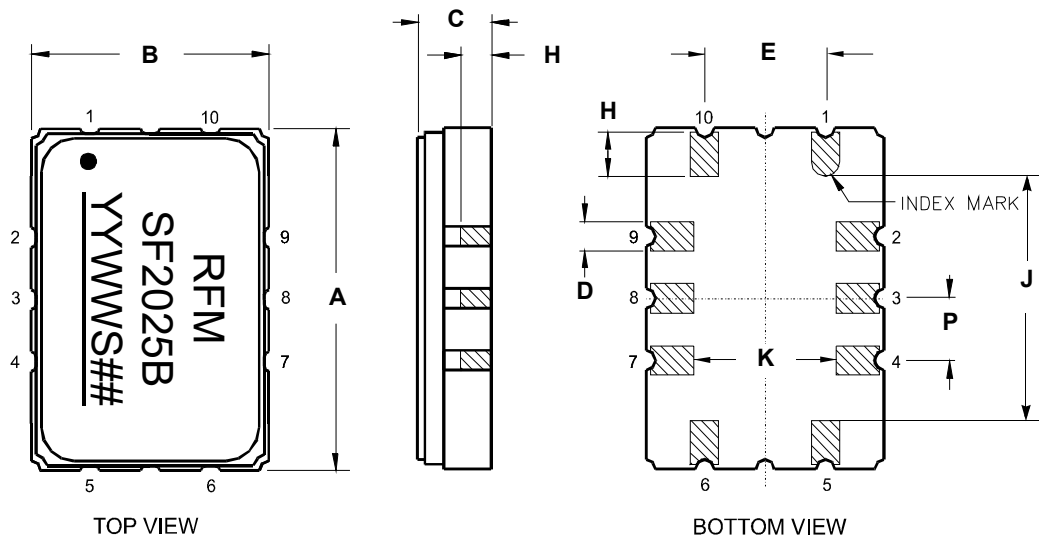
Recommended PCB Footprint



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

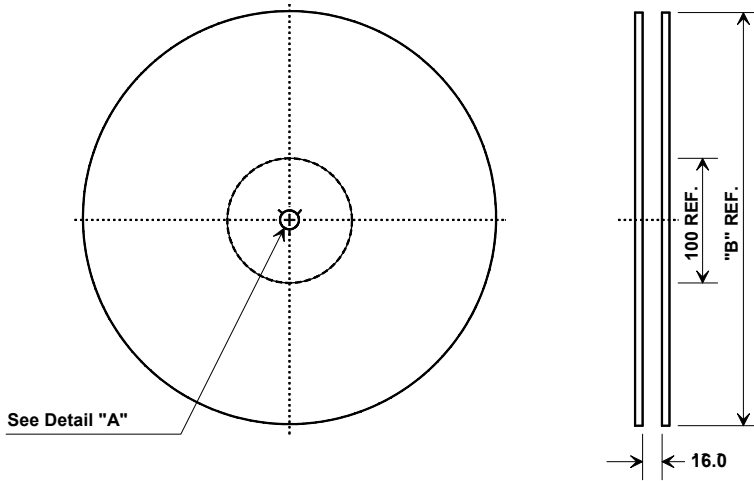
Materials	
Solder Pad Termination	Au plating 30 - 60 μmches (76.2-152 μm) over 80-200 μmches (203-508 μm) Ni.
Lid	Fe-Ni-Co Alloy Electroless Nickel Plate (8-11% Phosphorus) 100-200 μmches Thick
Body	Al ₂ O ₃ Ceramic

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

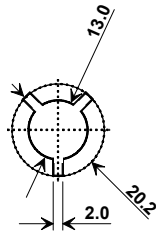


Tape and Reel Specifications

Tape and Reel Standard per ANSI/EIA-481

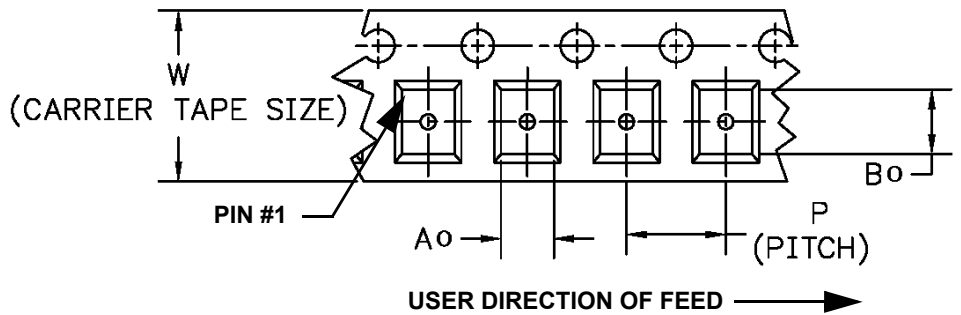
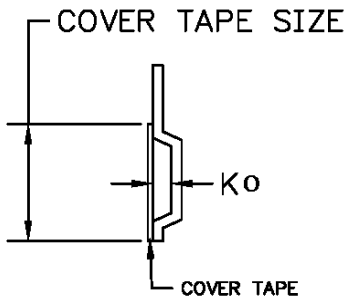


"B "		Quantity Per Reel
Inches	millimeters	
7	178	500
13	330	2000



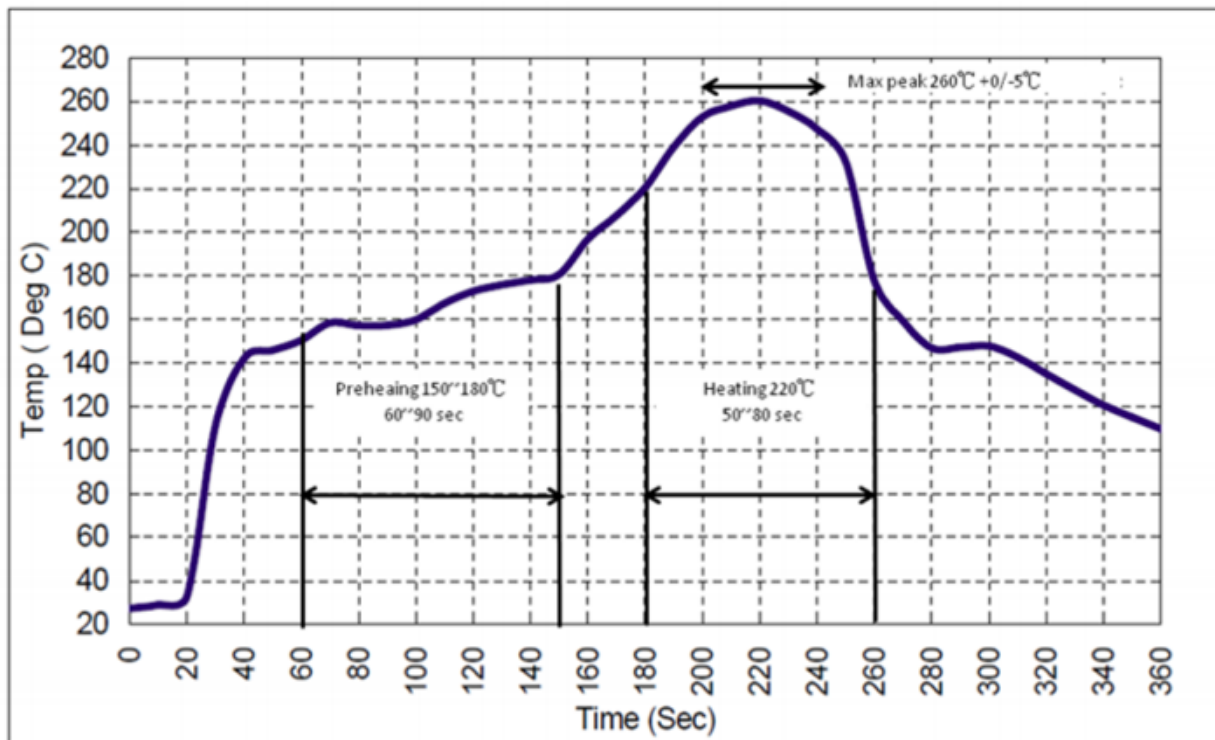
COMPONENT ORIENTATION and DIMENSIONS

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



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