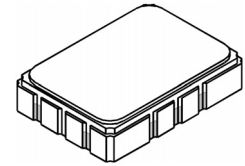


SF2038B-2

**76.500 MHz
SAW Filter**



SMP-03

- **Designed for SDARS IF Receiver**
- **Low Insertion Loss**
- **5.0 X 7.0 mm Surface-Mount Case**
- **Differential or Single Ended Input and Output**

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 (with tape & reel)	-40 to +85	°C
Storage Temperature Range (without tape & reel)	-50 to +125	°C
Max Soldering Profile	265°C for 10 s	

Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units		
Nominal Center Frequency	f_c	1	76.500			MHz		
Passband	Insertion Loss	IL		10.0	12.0	dB		
			1dB Passband	BW_1	12.5	14.0	MHz	
			15dB Bandwidth	BW_{15}		16.8	18.0	MHz
			30dB Bandwidth	BW_{30}		18.0	19.2	MHz
Amplitude Ripple over $f_c \pm 6.25$ MHz				0.70	1.3	dB _{p-p}		
Group Delay Variation over $f_c \pm 6.25$ MHz		GDV		40	150	ns _{p-p}		
Rejection	50 to 64.44 MHz		40	46		dB		
	64.44 to 66.70 MHz -40 to 85°C		36	41				
	64.44 to 66.70 MHz 85 to 105°C		30					
	86.30 to 87.54 MHz		*30	44				
	87.54 to 91.50 MHz		31	44				
	91.50 to 100 MHz		40	47				
Operating Temperature Range		T_A	1	-40	+105	°C		
Frequency Coefficient		FTC		-87		ppm/°C		
Differential Input			175 ohms					
Differential Output			180 ohms					
Case Style			SMP-03 7 x 5 mm Nominal Footprint					
Lid Symbolization (YY=year, WW=week, S=shift) See note 4			6	RFM SF2038B YYWWS				

*At low temperature extreme -40°C



CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

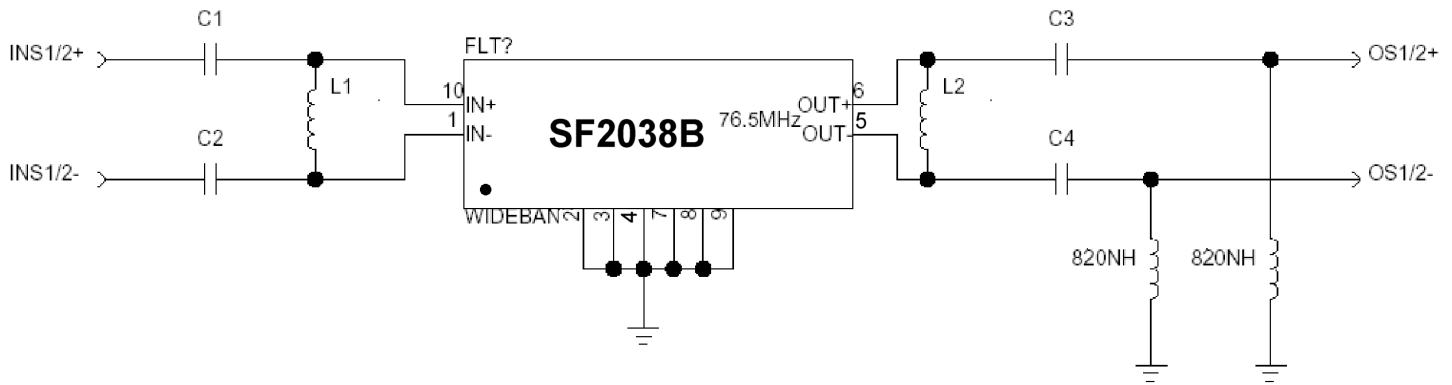
NOTES:

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 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.
9. Murata, stylized Murata logo, and Murata N.A., Inc. are registered trademarks of Murata Manufacturing Co., Ltd.

Discontinued

Matching Circuit and Matching Component Values Used in G3 Sirius Radios

(Refer to Sirius Radio G3 Chipset Application Note, Doc. #RX000104-B, Sec. 4.2.2)



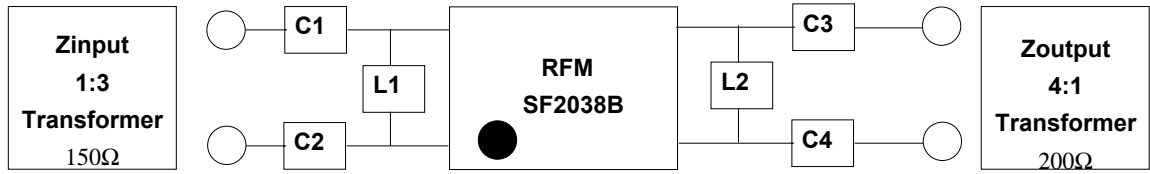
Wideband SAW Matching Circuit

Wideband SAW Matching Values

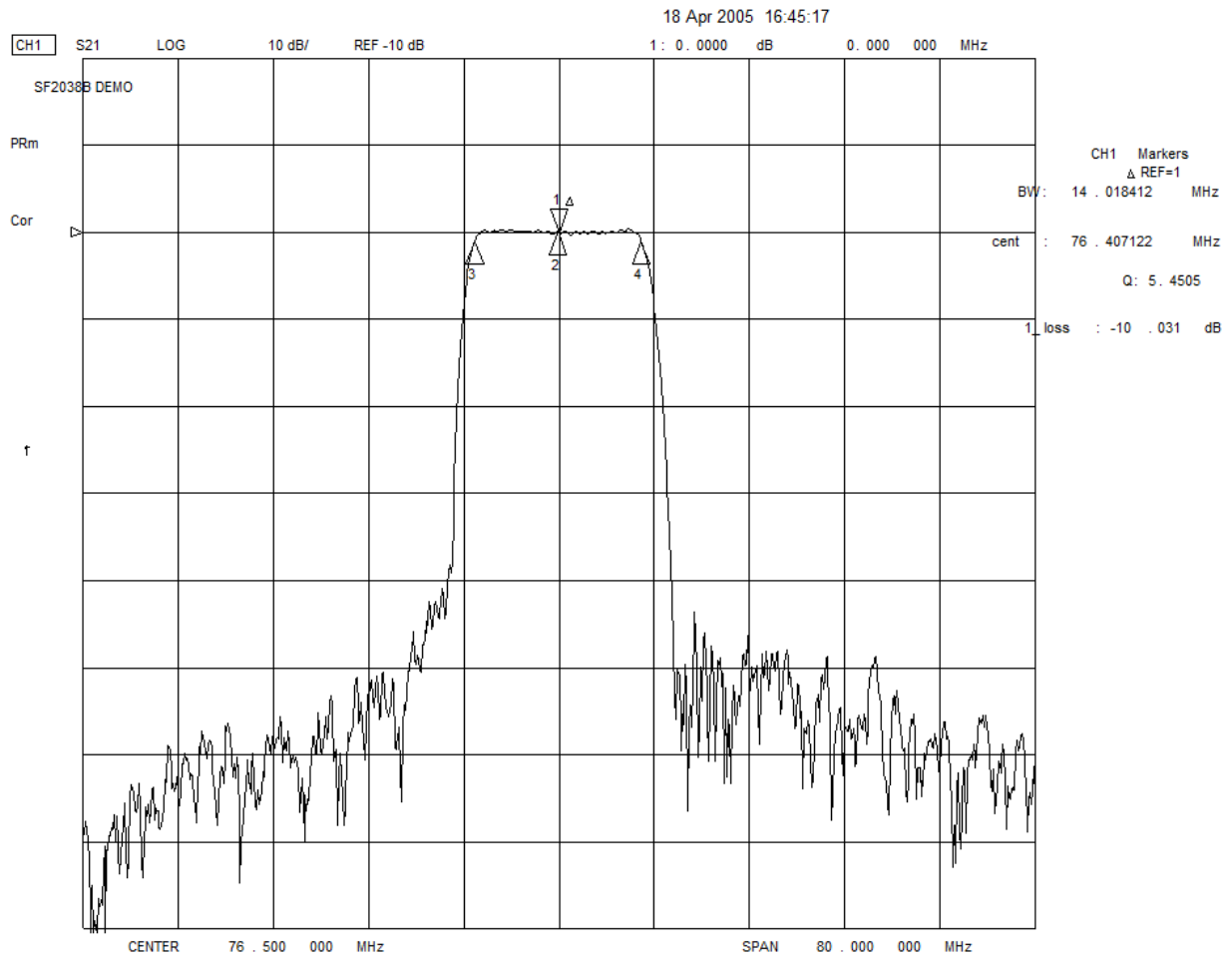
Reference Designator	Value
C1	15 pF
C2	15 pF
L1	270 nH
L2	270 nH
C3	27 pF
C4	27 pF

Discontinued

Matching Circuit and Matching Component Values Used on Filter Demo Board



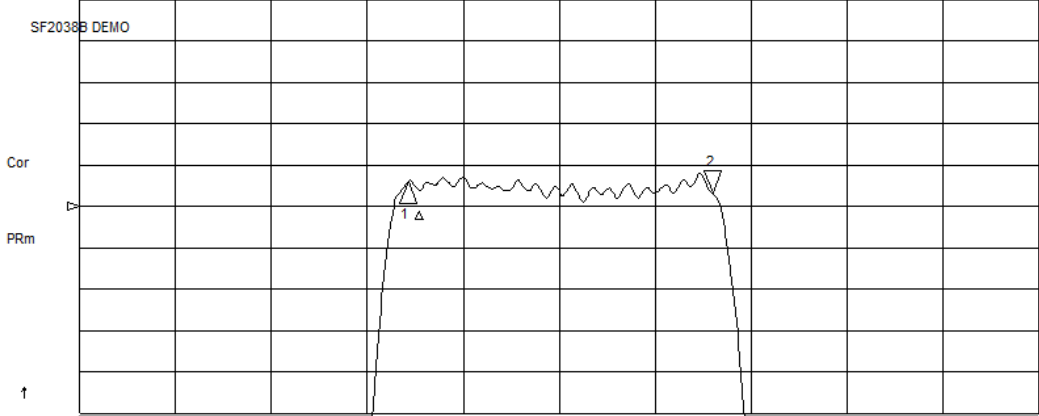
- SF2038B**
76.500 MHz
- C1 = 22pF**
C2 = 22pF
L1 = 220nH
L2 = 270nH
C3 = 22pF
C4 = 22pF



Discontinued

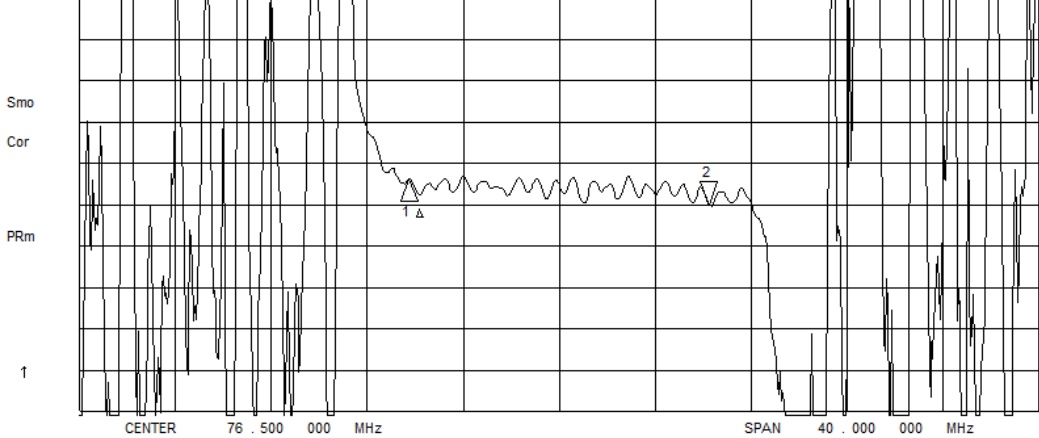
18 Apr 2005 16:42:05

CH1 S21 LOG 1 dB/ REF -10.4 dB 2 :- .29950 dB 12 .722 641 MHz



CH1 Markers
 Δ REF=1
 mean : -9.9489 dB
 s. dev : .13250 dB
 p-p : .69240 dB

CH2 S21 DEL 50 ns/ REF 640 ns 2 :-31 .395 ns 12 .500 000 MHz



CH2 Markers
 Δ REF=1
 mean : 659.90 ns
 s. dev : 7.6786 ns
 p-p : 35.477 ns

Discontinued

18 Apr 2005 16:35:10

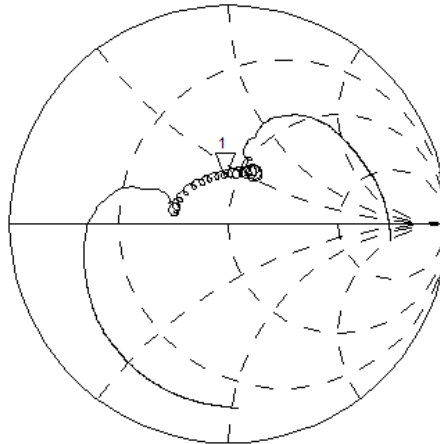
CH1 S11 1 UFS

1 : 44 . 537 Ω 19 . 910 Ω 41 . 422 nH 76 . 500 000 MHz

SF2038B DEMO

Cor

PRm

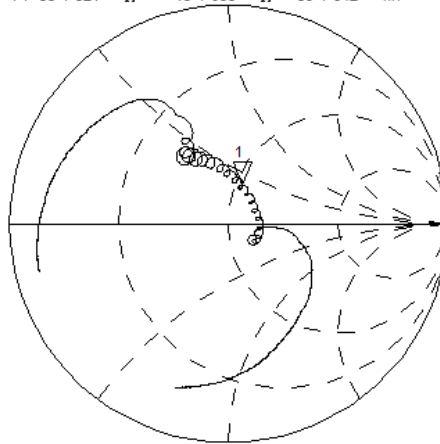


CH2 S22 1 UFS

1 : 53 . 521 Ω 19 . 055 Ω 39 . 642 nH 76 . 500 000 MHz

Cor

PRm



CENTER 76 . 500 000 MHz

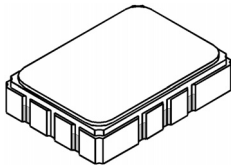
SPAN 40 . 000 000 MHz

Discontinued

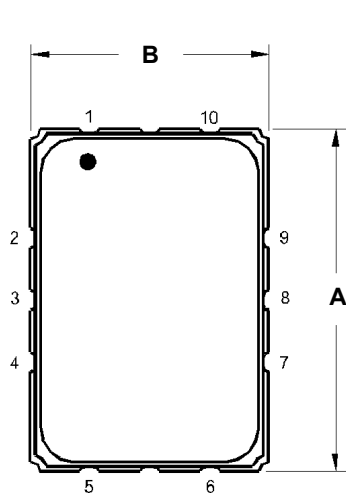
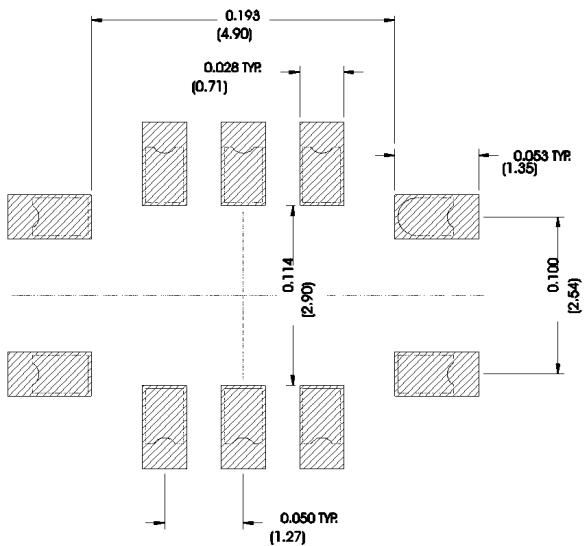
SMP-03 Case

10-Terminal Ceramic Surface-Mount Case

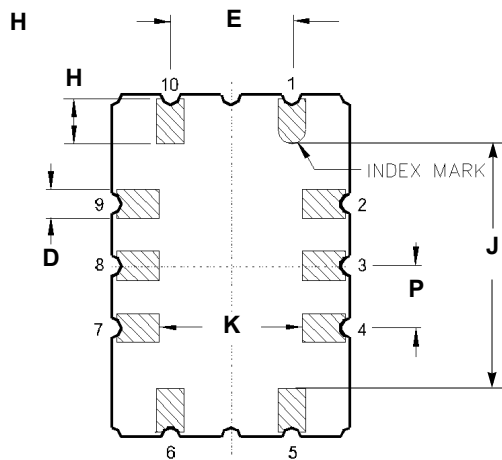
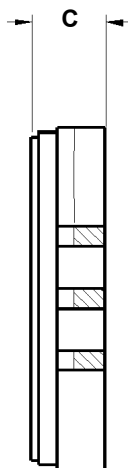
7 x 5 mm Nominal Footprint



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

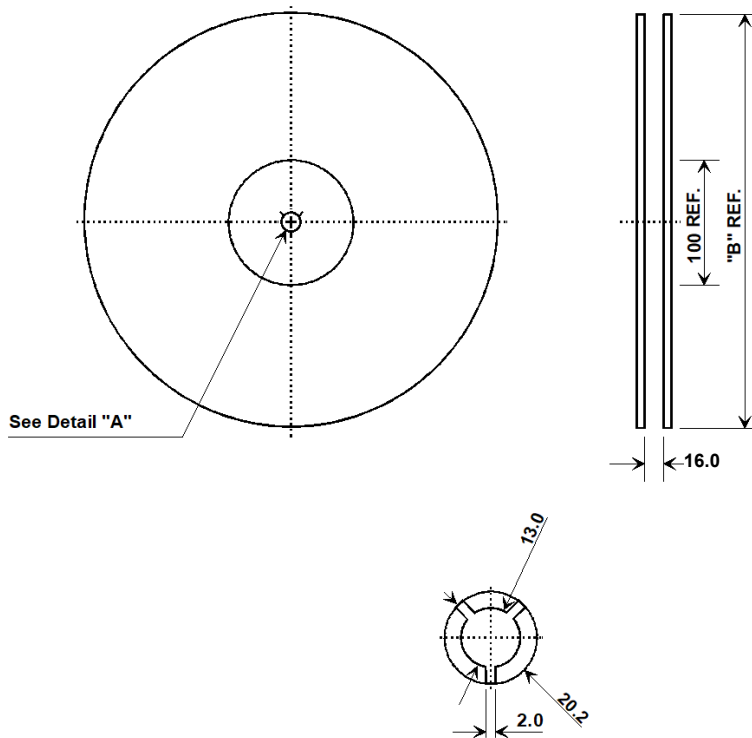
Materials

Solder Pad Termination	Au plating 30 - 60 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 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

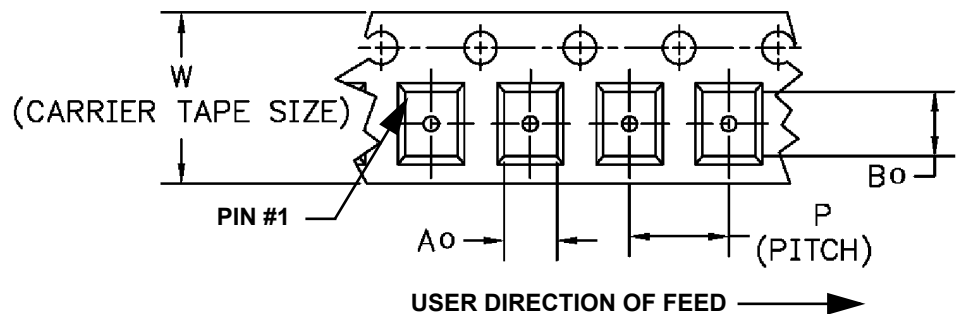
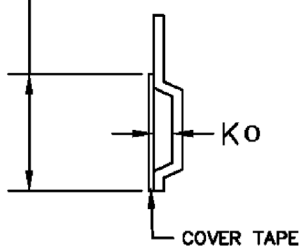
Product Reflow/ESD/MSL

Reflow Peak Temperature	265	°C
Reflow Peak Time	10	Seconds
Liquidus 217 Temperature/Time	110	Seconds
Over Liquidus 230 Temperature/Time	70	Seconds
Reflow Condition	SMT	
Class Level HBM	2	
HBM(V)	2000	HBM(V)
MM(V)	N/A	MM(V)
CDM(V)	2000	CDM(V)
MSL	1	

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

COVER TAPE SIZE



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