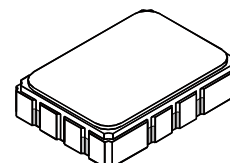


- **Designed for SDARS IF Receiver**
- **Low Insertion Loss**
- **5.0 X 7.0 mm Surface-Mount Case**
- **Differential Input and Output**
- **Complies with Directive 2002/95/EC (RoHS)**



SF1142B

**315.00 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 +85	°C
Max Soldering Profile	265°C for 10 s	

Electrical Characteristics

Characteristic	Sym	Notes	Min	Typ	Max	Units
Nominal Center Frequency	f_c	1	315.000			MHz
Passband Insertion Loss at f_c	IL	1, 2		13.0	14.0	dB
1dB Passband	BW ₁		±2.1	±2.25		MHz
Fast Amplitude Ripple over $f_c \pm 2.1$ MHz					1.0	dB _{P-P}
Group Delay Variation over $f_c \pm 2.1$ MHz	GDV			75	200	ns _{P-P}
Rejection 100 to $f_c - 4.6$ and $f_c + 4.85$ to $f_c + 100$ MHz		1, 2, 3	40	47		dB
Operating Temperature Range	T _A	1	-40		+85	°C
Differential Input and Output Impedance			250 ohms			
Case Style		6	SMP-03 7 x 5 mm Nominal Footprint			
Lid Symbolization (YY=year, WW=week, S=shift) See note 4			RFM SF1142B 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



CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

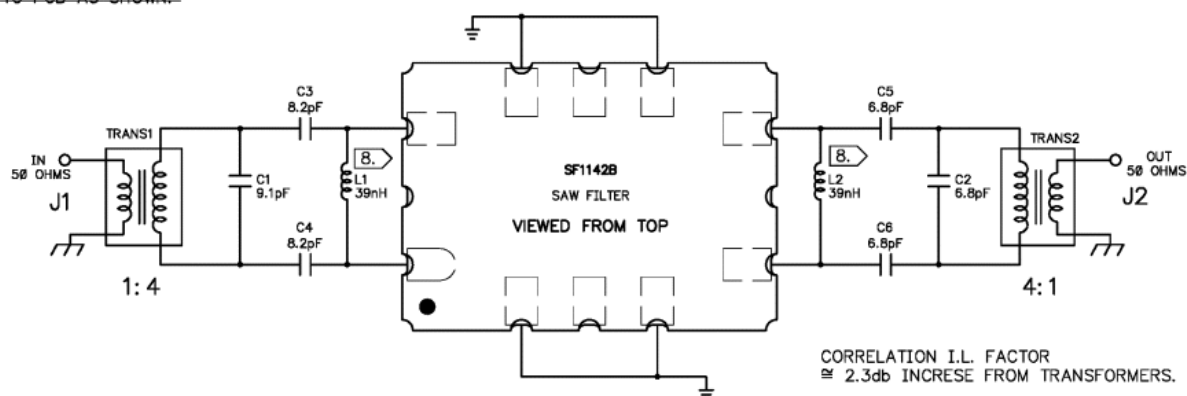
NOTES:

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. The design, manufacturing process, and specifications of this filter are subject to change.
4. 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.
5. US and international patents may apply.
6. Electrostatic Sensitive Device. Observe precautions for handling.

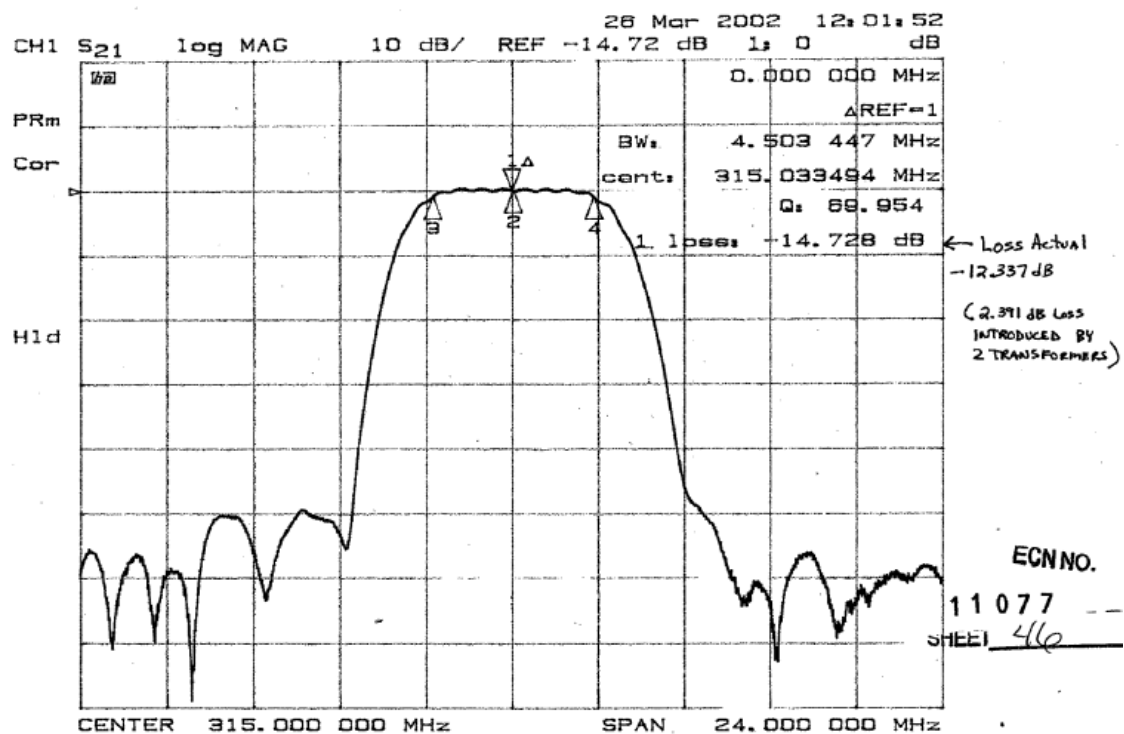
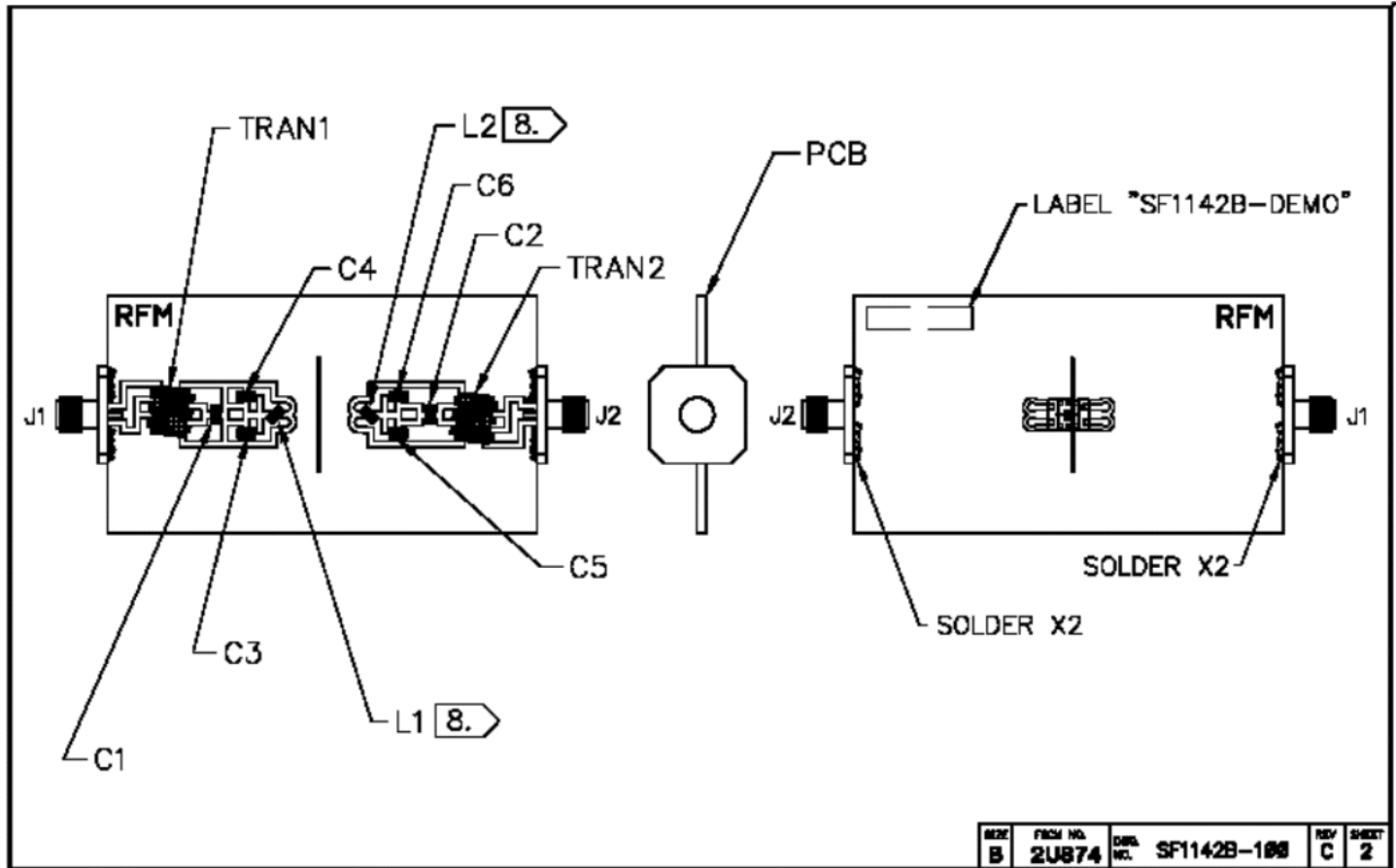
NOTES:

- 1 ~~SOLDER "TAPE" 4 PLACES ONTO COMPONENT SIDE OF PCB AS SHOWN~~
- 2 USE A WRIST STRAP WHEN SOLDERING TRANS 1, AND TRANS 2 TO PCB.
(CUT LEADS .07 IN.)
- 3 MOUNT AND SOLDER ALL COMPONENTS ON PCB.
- 4 CUT CENTER CONDUCTORS FROM J1 AND J2 TO .10 IN.
- 5 MOUNT J1 AND J2 AS SHOWN (SOLDER BACKSIDE ALSO).
- 6 LABEL DEMO BOARD ACCORDINGLY.
- 7 MOUNT "FILTER" ON TOPSIDE OF PCB AS SHOWN.
8. MOUNT L1 AND L2 90° TO EACH OTHER.
9. ~~CUT SHIELD IN TWO PIECES... "SHIELD A" AND "SHIELD B"~~
~~SOLDER TO PCB AS SHOWN~~

REV	ECN	DESCRIPTION	DATE
A	9121	INITIAL RELEASE	26oct00
B	10655	REVISED	30apr02
C	11077	REVISED	20nov02



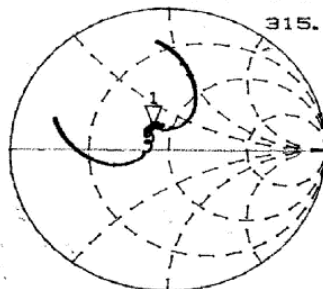
TITLE				
ASSY DIAGRAM, SF1142B-DEMO, S, TD				
SIZE	FSCM NO.	DWG. NO.	REV	SHEET
B	2U874	SF1142B-100	C	1/2



CH1 S11 1 U FS 26 Mar 2002 12:06:01
 1: 39.736 Ω 13.131 Ω 6.6344 nH
 315.000 000 MHz

PRm

Cor

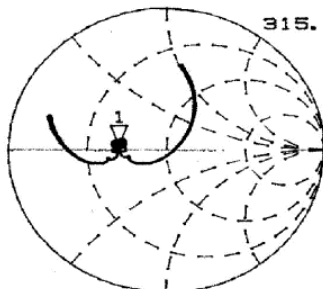


H1d

CH2 S22 1 U FS 1: 26.956 Ω 1.5781 Ω 797.35 pH
 315.000 000 MHz

PRm

Cor



H1d

CENTER 315.000 000 MHz

SPAN 24.000 000 MHz

ECN NO.

11077

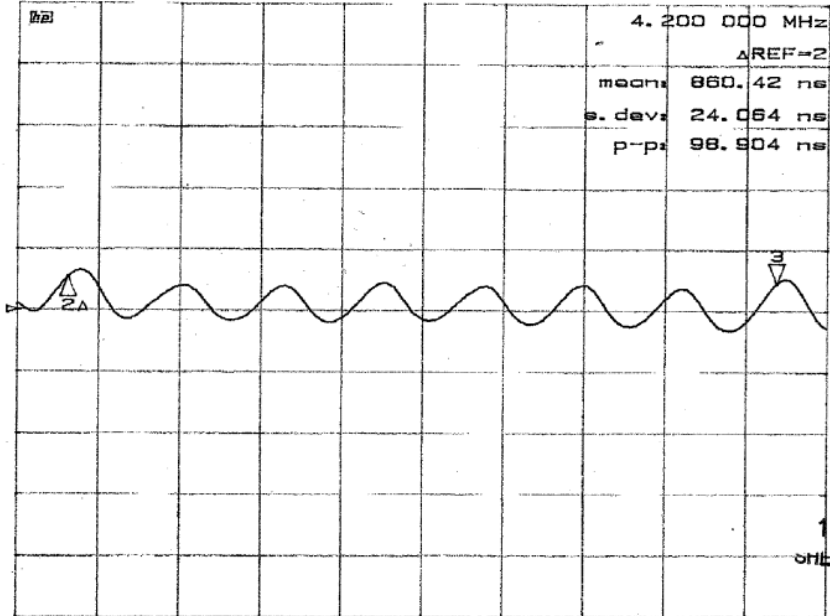
SHEET 47

CH1 S21 delay 100 ns/ REF 850 ns 26 Mar 2002 11:56:40
 3: -10.133 ns

PRm 4.200 000 MHz
 Cor Δ REF=2
 mean: 860.42 ns
 s. dev: 24.064 ns
 p-p: 98.904 ns

Smo

H1d



CENTER 315.000 000 MHz

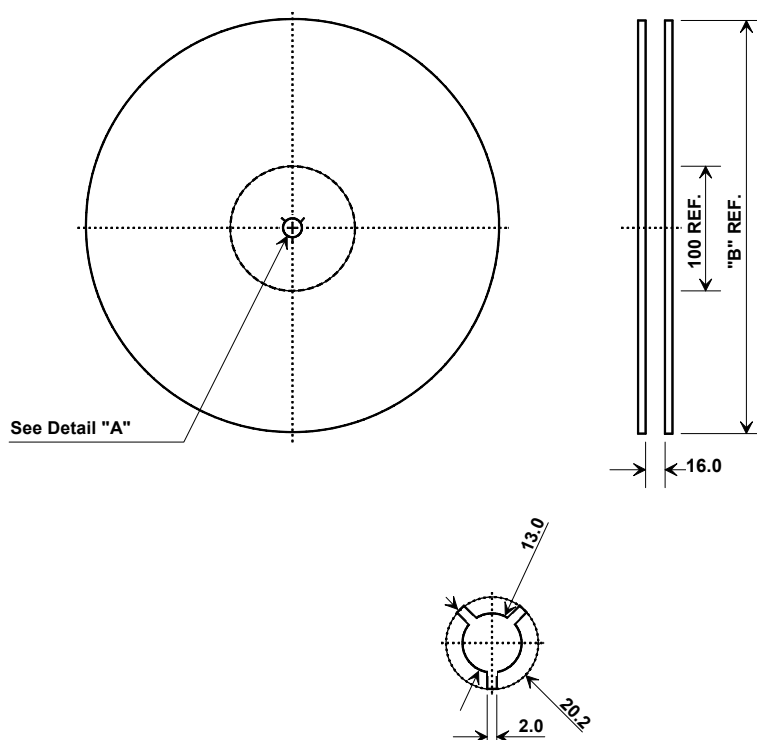
SPAN 4.800 000 MHz

ECN NO.

11077

SHEET 48

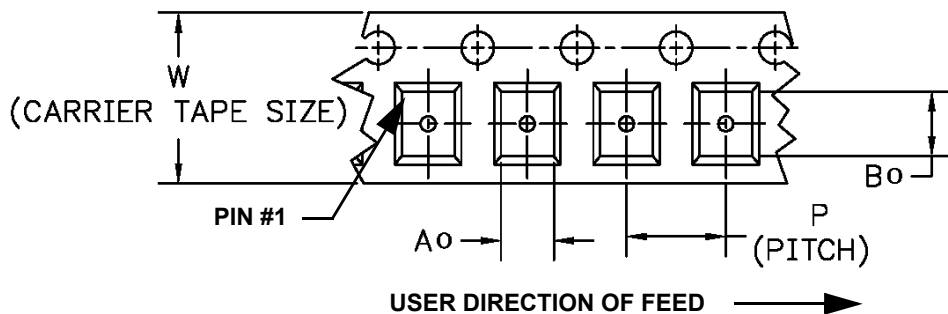
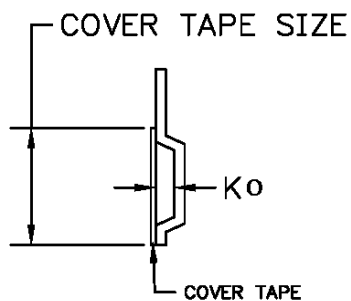
Tape and Reel Specifications



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

COMPONENT ORIENTATION and DIMENSIONS

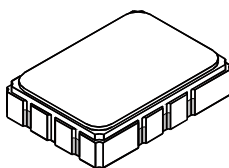
Carrier Tape Dimensions		Tolerance
Ao	5.5 mm	± 0.1mm
Bo	7.5 mm	± 0.1mm
Ko	2.0 mm	± 0.1mm
Pitch	8.0 mm	± 0.1mm
W	16.0 mm	± 0.2mm



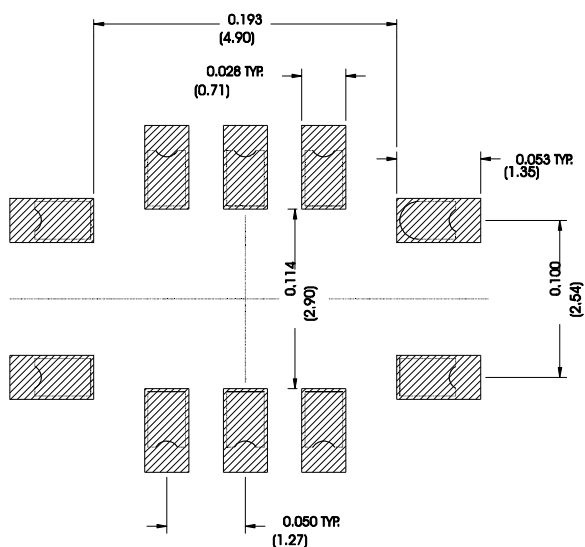
SMP-03 Case

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 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

