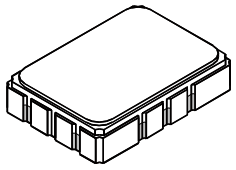
muRata
INNOVATOR IN ELECTRONICS

SF1142B

315.00 MHz SAW Filter

- ***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)***



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 fc	IL			13.0	14.0	dB
1dB Passband	BW_1	1, 2	±2.1	±2.25		MHz
Fast Amplitude Ripple over fc ±2.1 MHz					1.0	dB_{P-P}
Group Delay Variation over fc ±2.1 MHz	GDV			75	200	ns_{P-P}
Rejection 100 to fc-4.6 and fc+4.85 to fc+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 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.

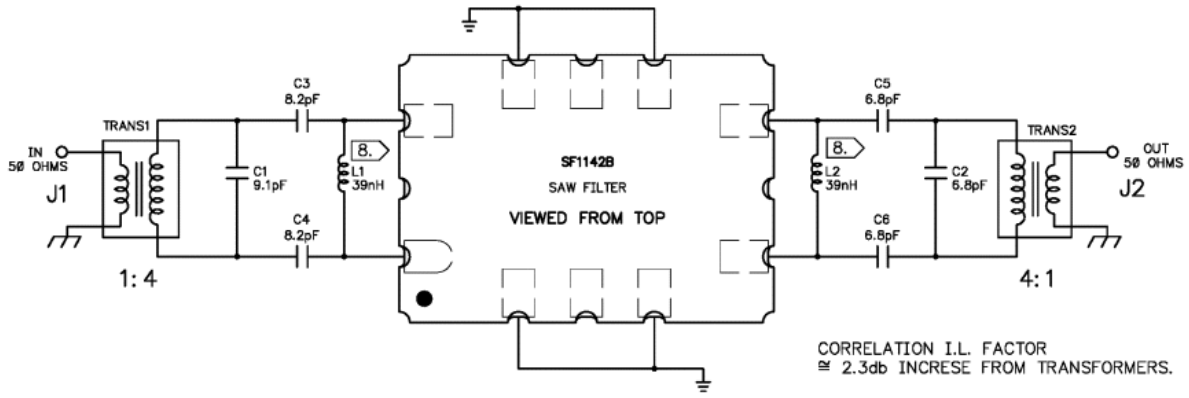
NOTES:

1. 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, fc.
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 .Ø7 IN.)
3. MOUNT AND SOLDER ALL COMPONENTS ON PCB.
4. CUT CENTER CONDUCTORS FROM J1 AND J2 TO .1Ø 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 9Ø° TO EACH OTHER.
9. ~~CUT SHIELD IN TWO PIECES., "SHIELD A" AND "SHIELD B", SOLDER TO PCB AS SHOWN.~~

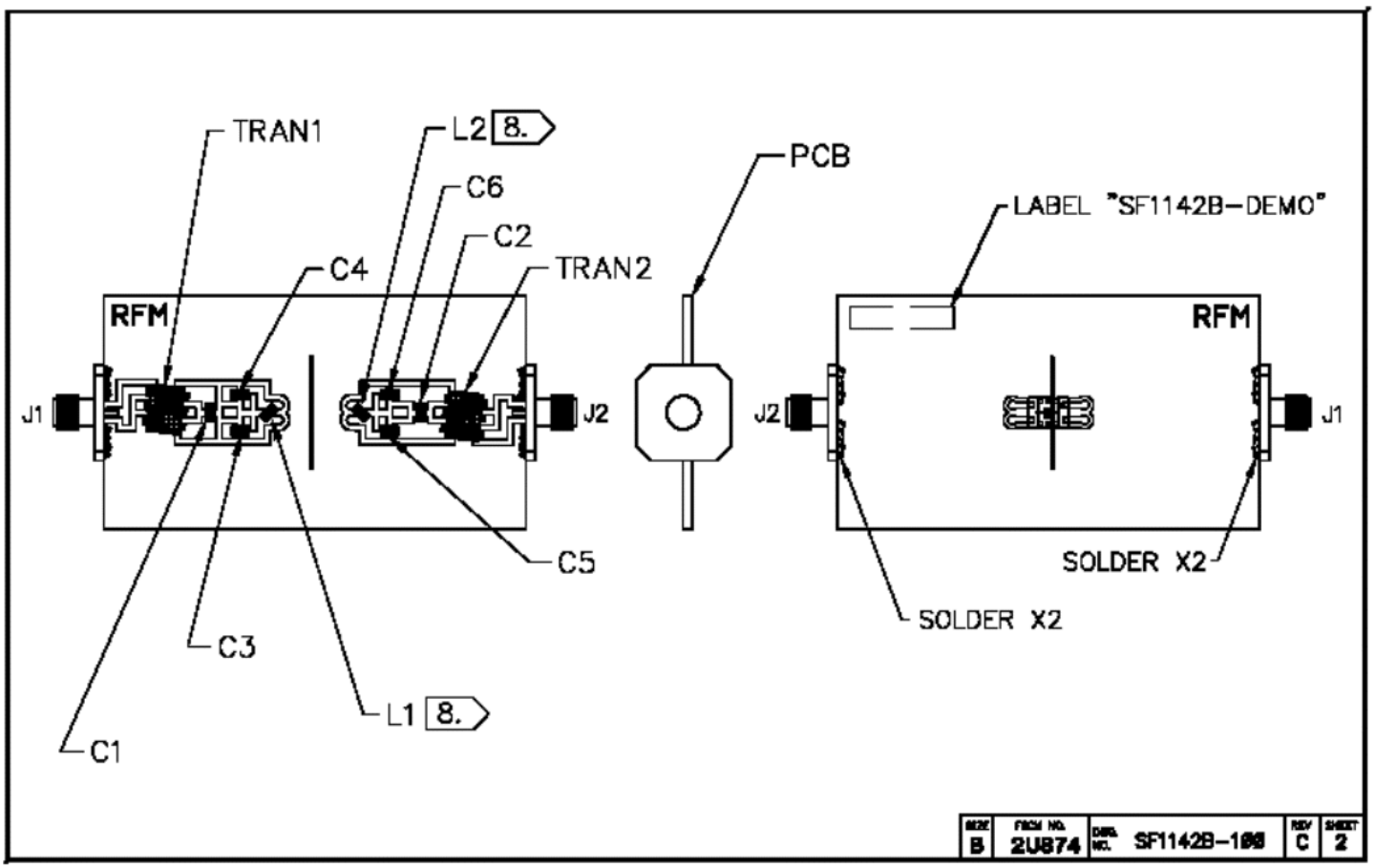
REV	ECN	DESCRIPTION	DATE
A	9121	INITIAL RELEASE	26octØØ
B	1Ø655	REVISED	3ØaprØ2
C	11Ø77	REVISED	2Ønovø2

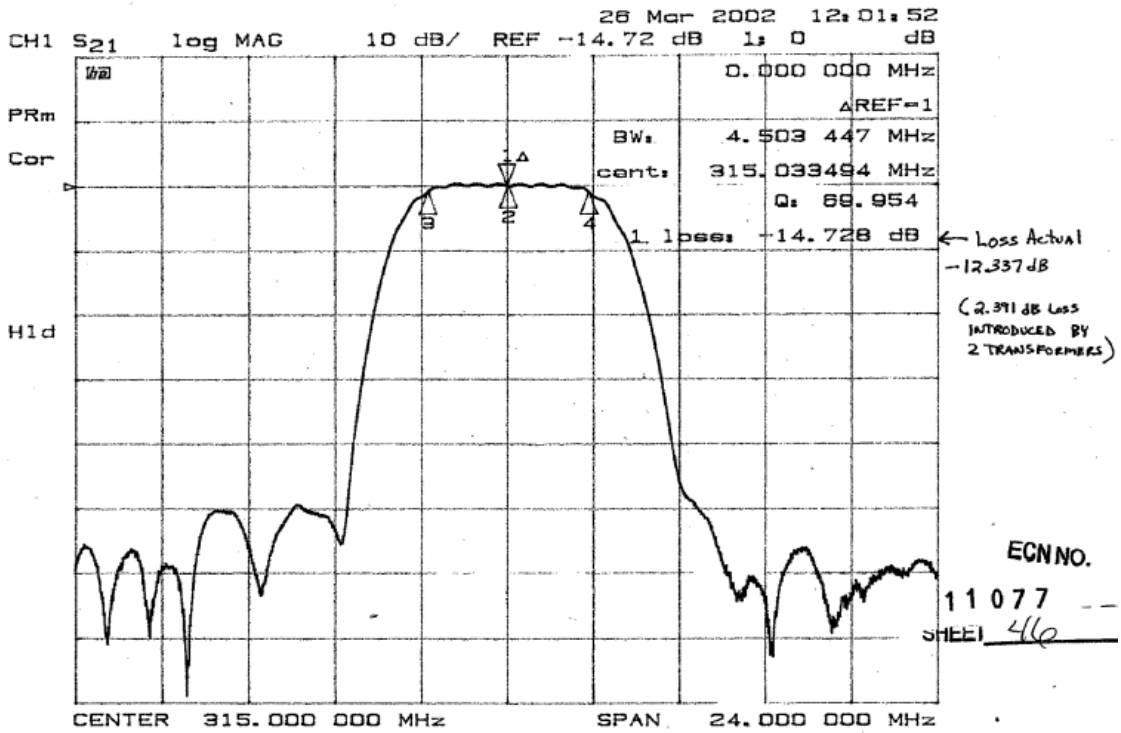


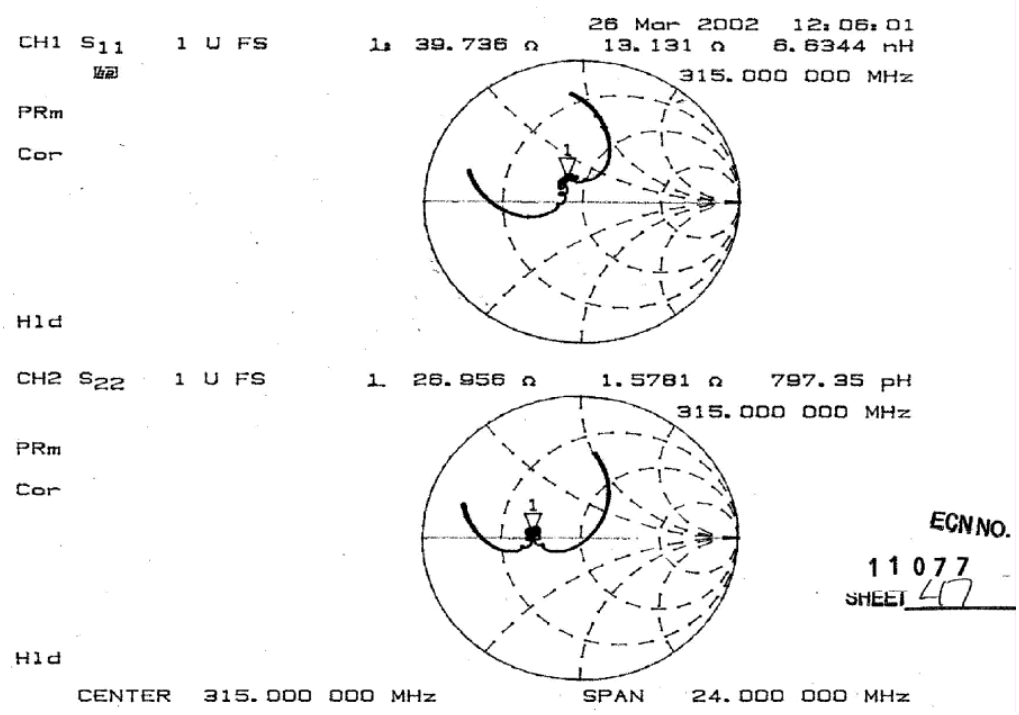
CORRELATION I.L. FACTOR
≅ 2.3db INCRESE FROM TRANSFORMERS.

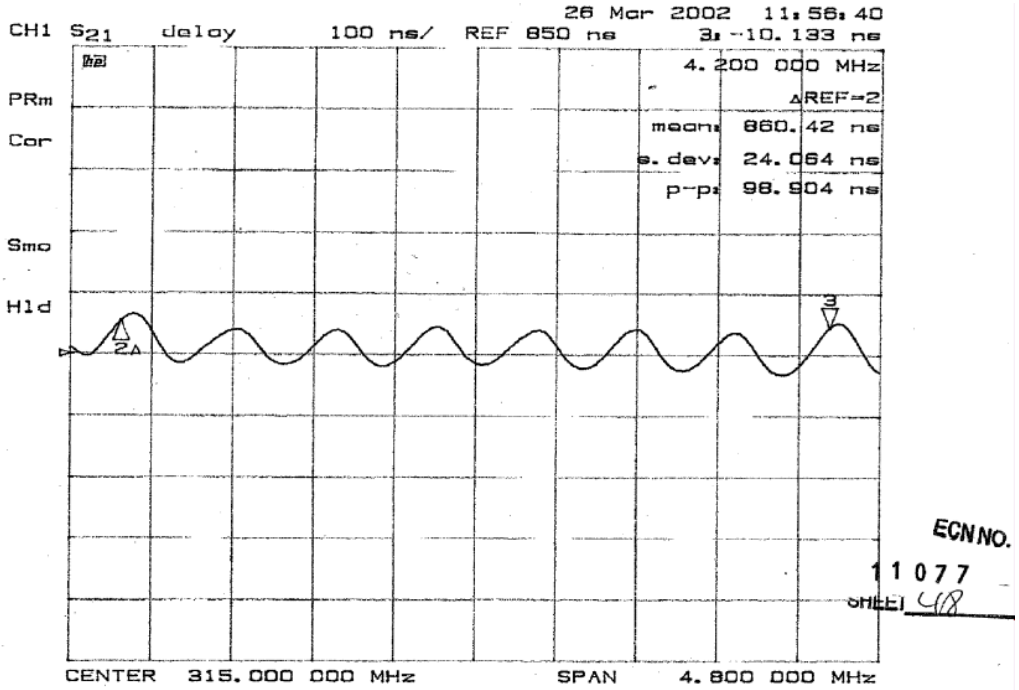
TITLE: ASSY DIAGRAM, SF1142B-DEMO, S, TD

SIZE	FSCM NO.	DWG. NO.	REV	SHEET
B	2U874	SF1142B-1ØØ	C	1/2

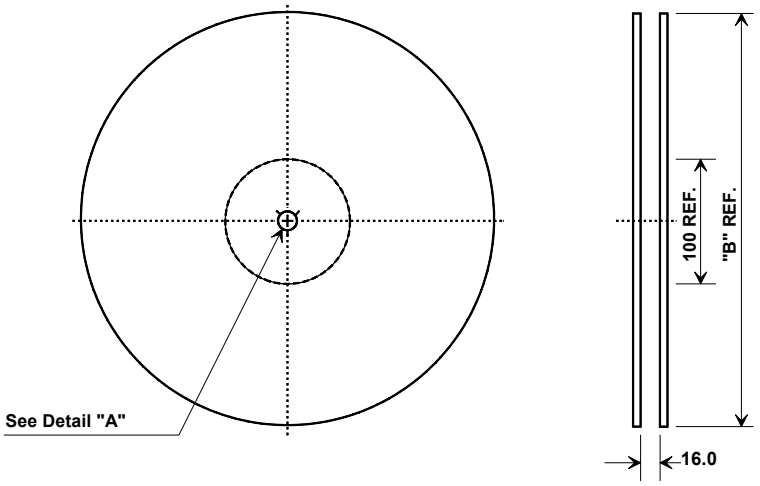




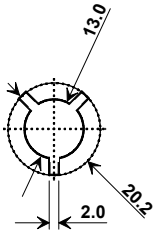




Tape and Reel Specifications

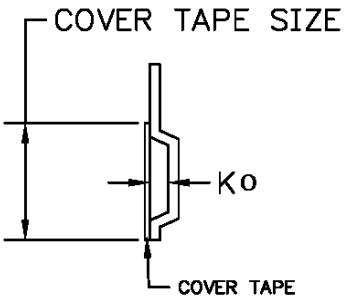


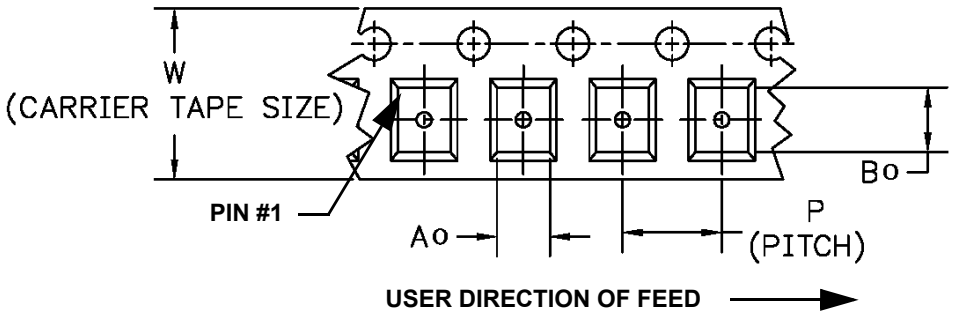
"B " Nominal Size		Quantity Per Reel
Inches	millimeters	
7	178	500
13	330	2000



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

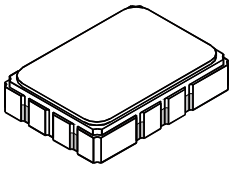




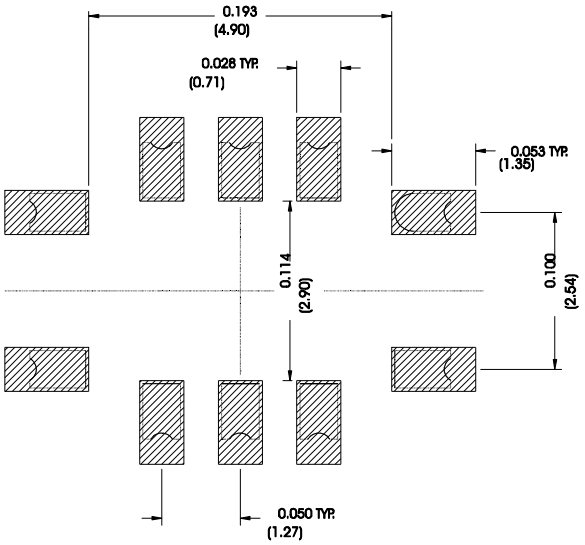
SMP-03 Case

10-Terminal Ceramic Surface-Mount Case

7 x 5 mm Nominal Footprint



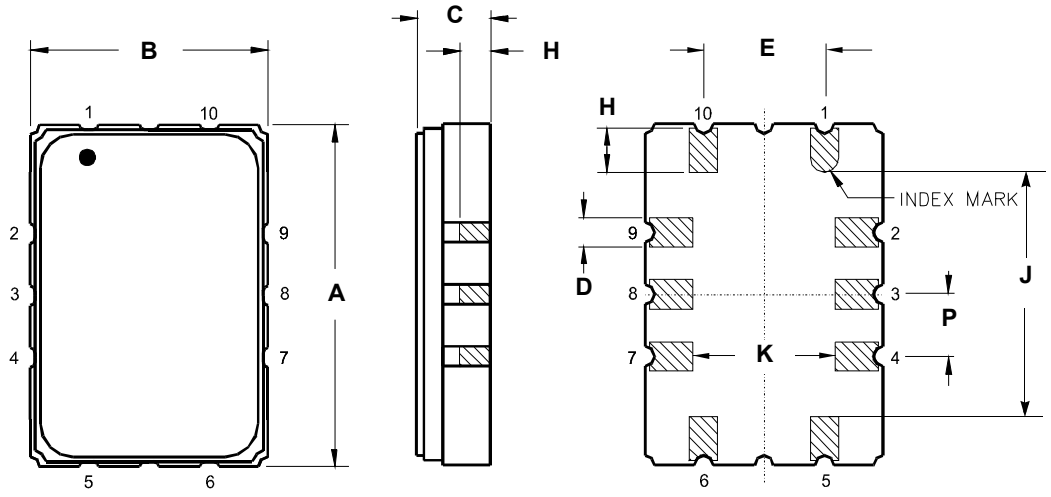
Recommended PCB Footprint



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 uInches (76.2-152 uM) over 80-200 uInches (203-508 uM) Ni.
Lid	Fe-Ni-Co Alloy Electroless Nickel Plate (8-11% Phosphorus) 100-200 uInches Thick
Body	Al_2O_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**



TOP VIEW

BOTTOM VIEW