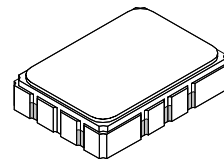


# SF1142B 315 MHz SAW Filter



- Designed for SDARS IF Receiver
- Low Insertion Loss
- 5.0 x 7.0 mm Surface-Mount Case
- Differential Input and Output



See Associated Plots

Characteristic	Sym	Min	Typ	Max	Units	Notes
Nominal Center Frequency	fc		315.000		MHz	1
Passband	Insertion Loss at fc	IL	13.0	14.0	dB	1, 2
	1 dB Passband	BW <sub>1</sub>	±2.1	±2.25	MHz	
	Fast Amplitude Ripple over fc ±2.1 MHz			1.0	dB <sub>P-P</sub>	
	Group Delay Variation over fc ±2.1 MHz	GDV	75	200	ns <sub>P-P</sub>	
Rejection	100 MHz to fc-4.6 and fc+4.85 to fc+100MHz		40	47	dB	1, 2, 3
Operating Temperature Range	T <sub>A</sub>	-40		+85	°C	1

Differential Input and Output Impedance	250 ohms
Case Style	SMP-03 7 x 5 mm Nominal Footprint
Lid Symbolization (YY = year, WW = week)	RFM SF1142B YYWW

## 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 Connections

Connection	Terminals
Port 1 Hot	10
Port 1 Gnd Return	1
Port 2 Hot	5
Port 2 Gnd 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  $\Omega$  and measured with 50  $\Omega$  network analyzer. Matching components maximum 2 inductors (Q=30), 2 capacitors and one resistor or transformer at each input and output.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency, fc.
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. 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.
7. US and international patents may apply.
8. RFM, stylized RFM logo, and RF Monolithics, Inc. are registered trademarks of RF Monolithics, Inc.
9. ©Copyright 1999, RF Monolithics Inc.
10. Electrostatic Sensitive Device. Observe precautions for handling.



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Dallas, Texas 75244  
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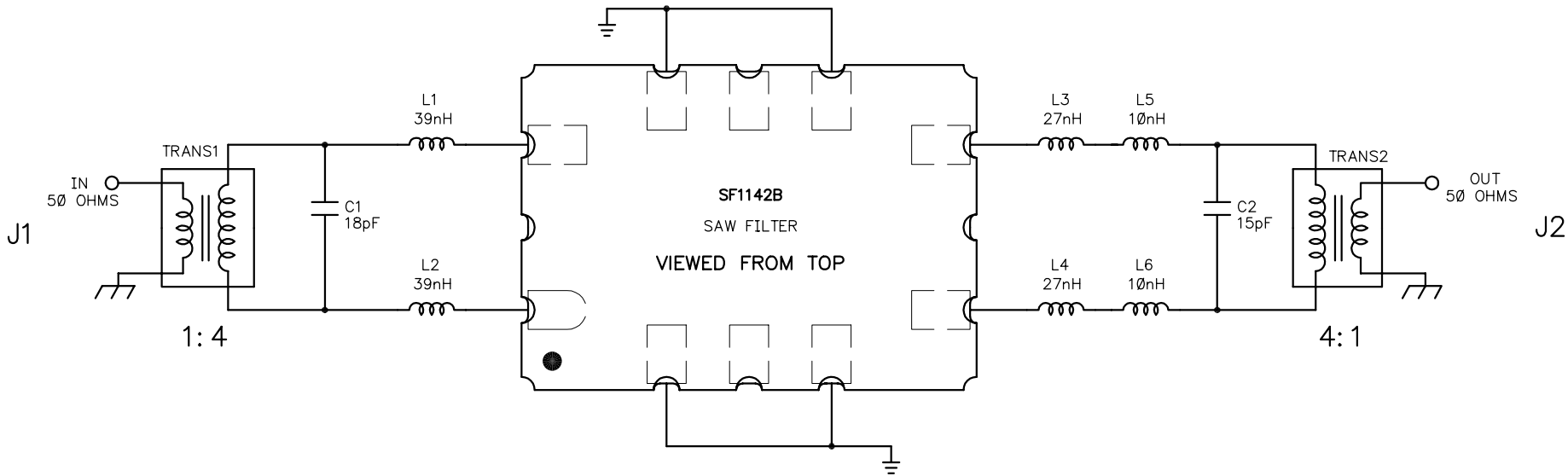
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**European Sales Office**

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.
- CUT ETCH UNDER COMPONENT
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



MATERIAL/FINISH:

UNLESS OTHERWISE SPECIFIED  
DIMENSIONS ARE IN INCHES(mm)  
DIMENSIONING AND TOLERANCING PER ANSI Y14.5-1982  
DRAWING PREPARED IN ACCORDANCE WITH MIL-STD-100  
LINEAR GENERAL TOLERANCING AS FOLLOWS:  
.XX = ±.01 .XXX = ±.005 .XXXX = ±.0010  
ANGULAR = ±0°30'  
GENERAL MACHINED SURFACE FINISH  $\sqrt{63}$

DRAWN J.F.Christopherson  
DATE 26oct00

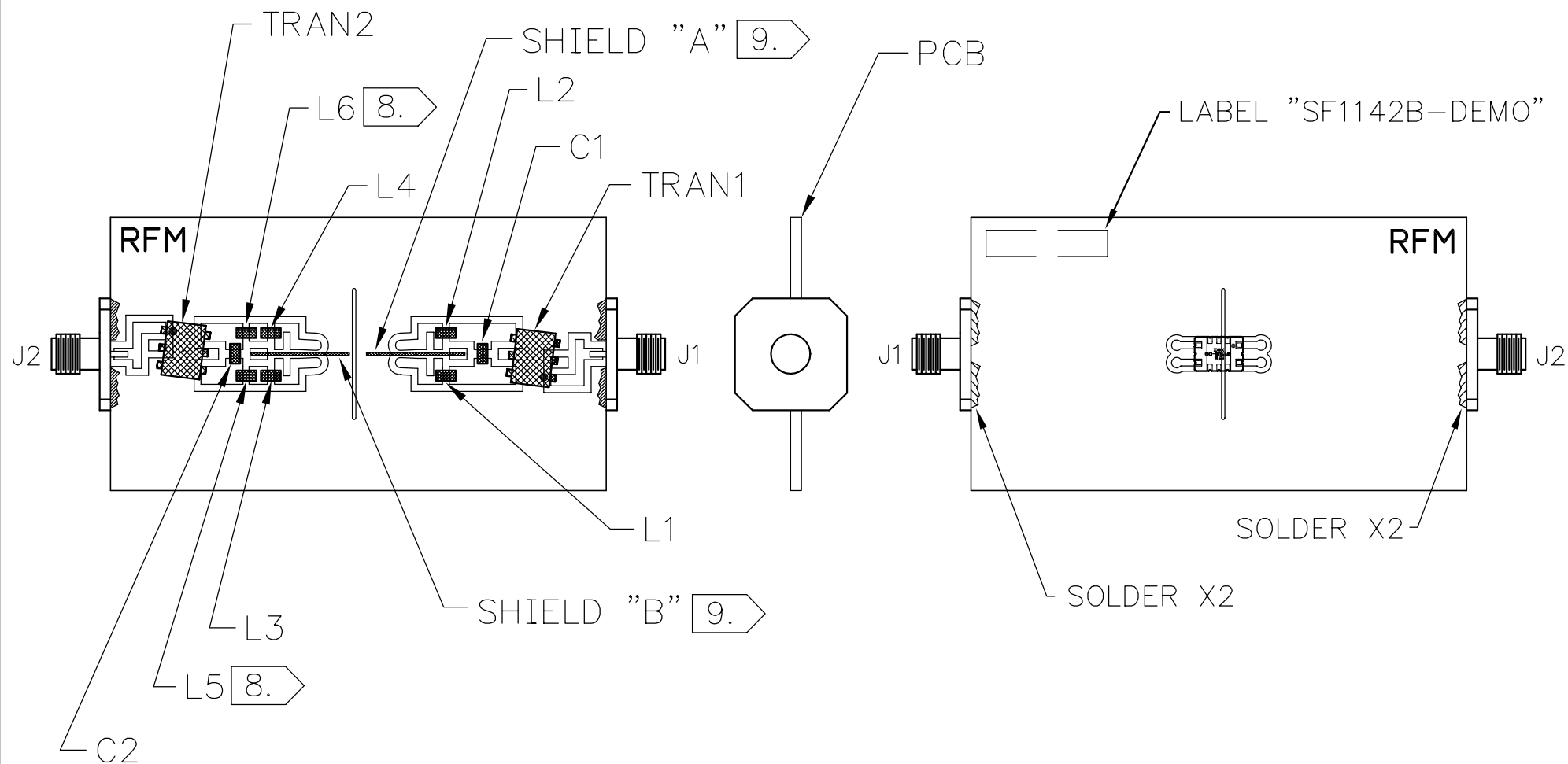
CHECKED/APPROVED  
DATE



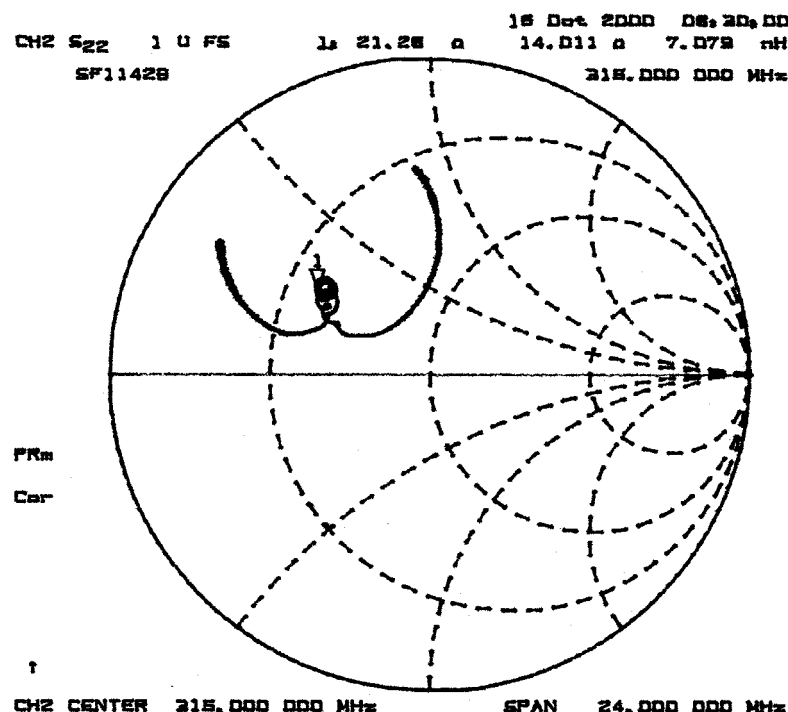
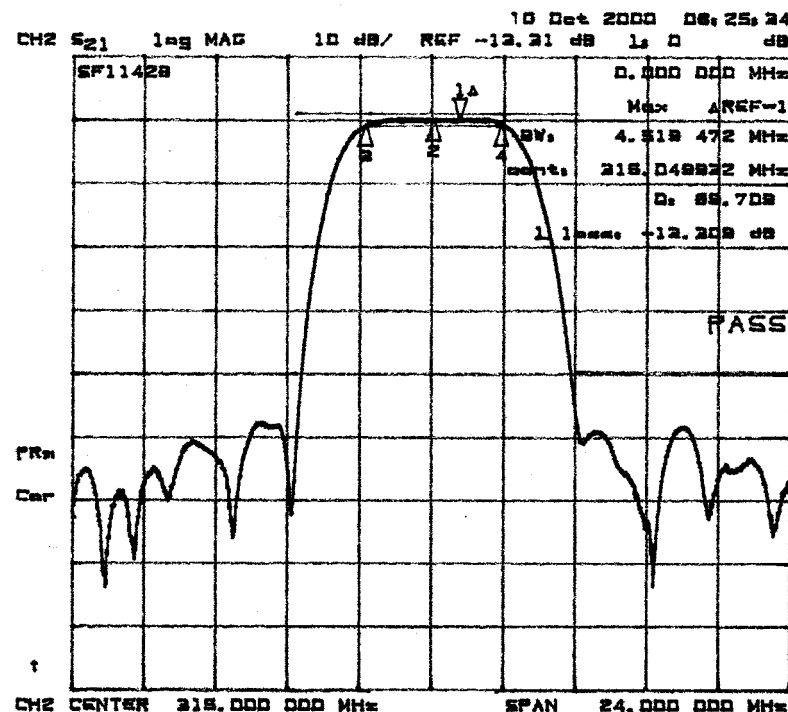
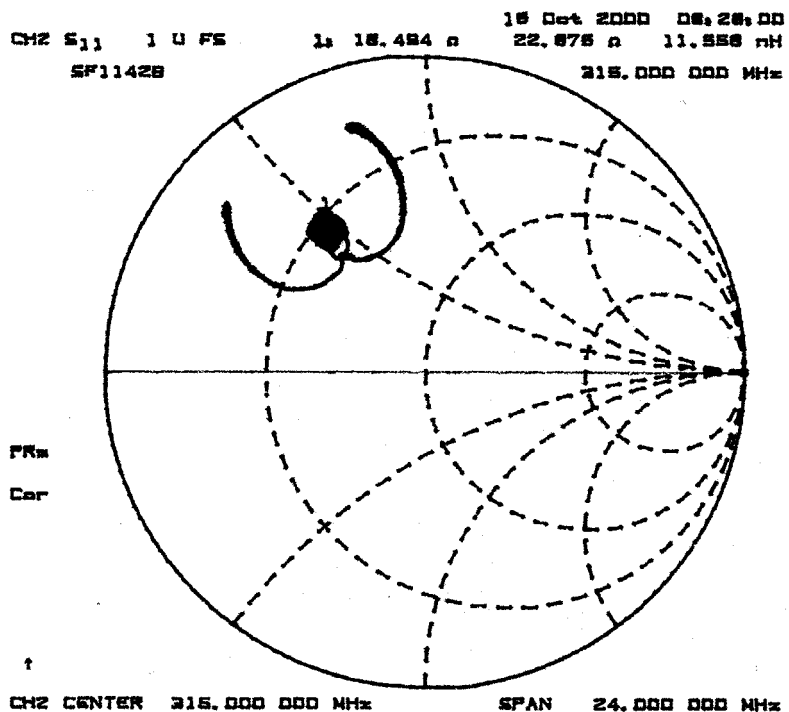
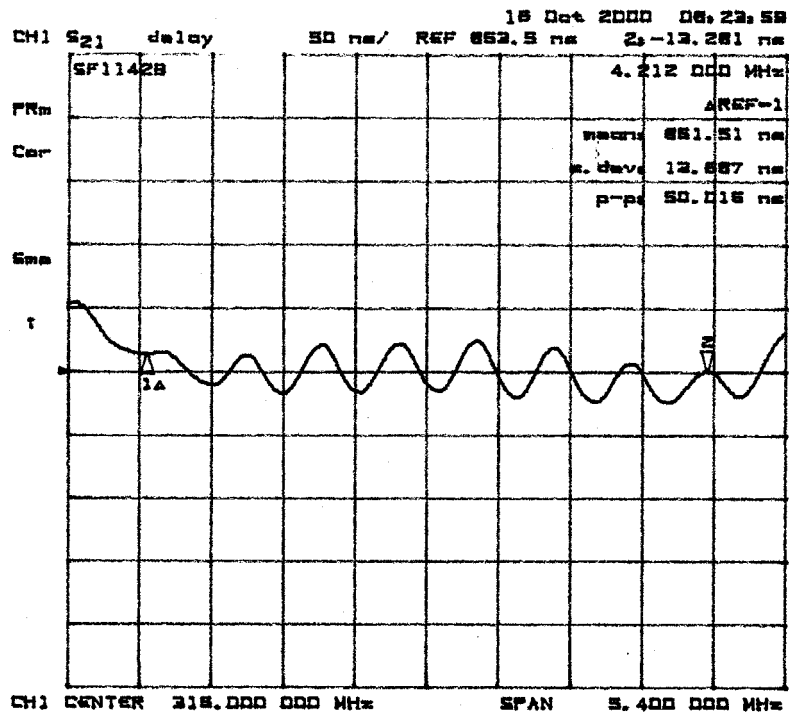
RFMonolithics, Inc.  
DALLAS , TEXAS 75244 USA

TITLE  
ASSY DIAGRAM, SF1142B DEMO

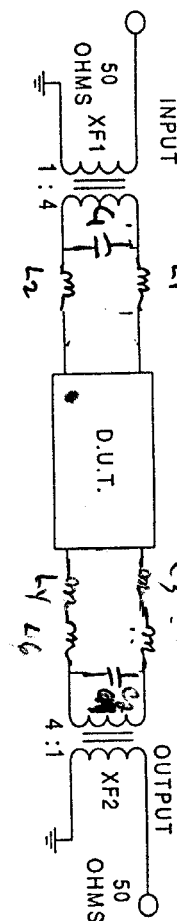
SIZE B	FSCM NO. 2U874	DWG. NO. SF1142B-100	REV A	SHEET 1/3
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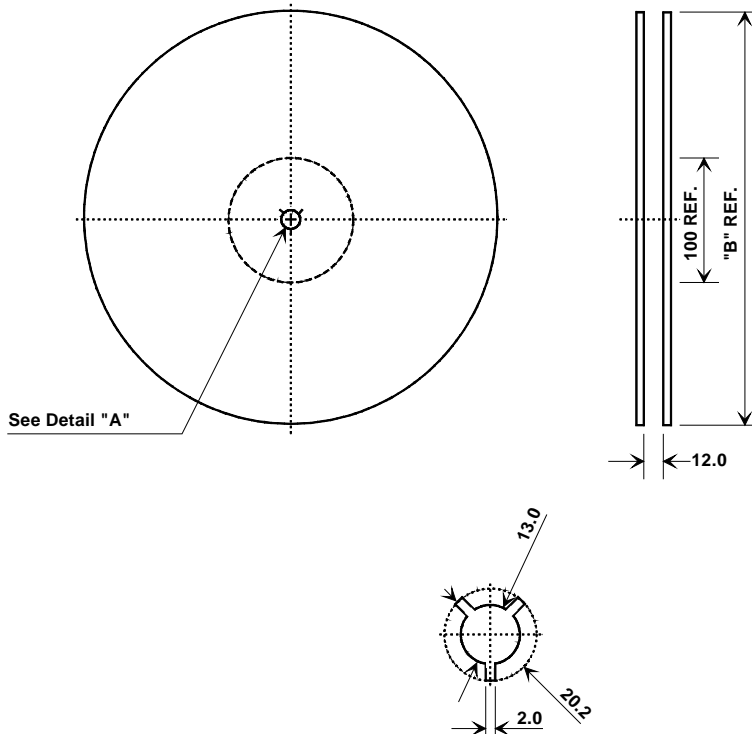
SF1142B  
Demo  
10/16/00  
LP



C1 = 18pF  
C2 = 18pF  
C3 = 18pF  
C4 = 18pF  
C5 = 18pF  
L1 = 39nH  
L2 = 39nH  
L3 = 27nH  
L4 = 27nH  
L5 = 10nH  
L6 = 10nH



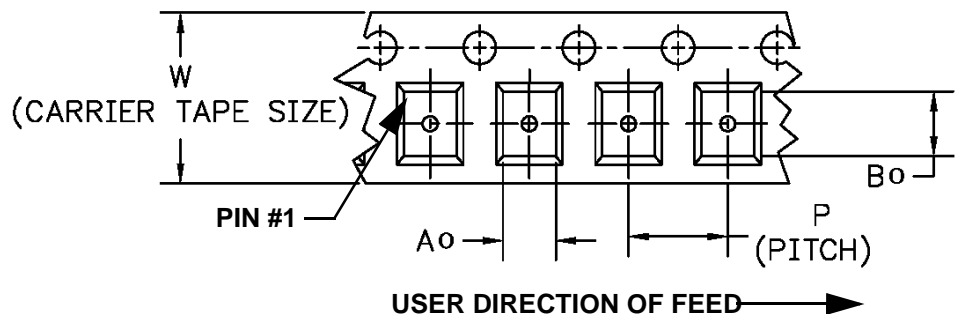
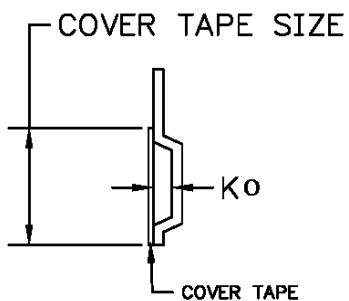
## Tape and Reel Specifications



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

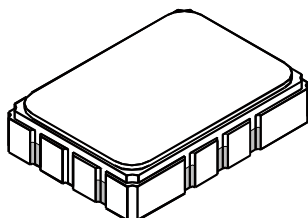
## COMPONENT ORIENTATION and DIMENSIONS

Carrier Tape Dimensions	
Ao	9.4 mm
Bo	7.4 mm
Ko	2.0 mm
Pitch	8.0 mm
W	16.0 mm



## SMP-03 Case

**10-Terminal Ceramic Surface-Mount Case**  
**7 x 5 mm Nominal 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		0.60			0.024	
E		2.54			0.100	
H		1.0			0.039	
J		5.00			0.197	
K		3.00			0.118	
P		1.27			0.050	

**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

