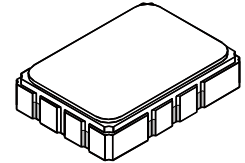


**SF2040B-3**

**80.460 MHz  
SAW Filter**



**SMP-03-S**

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



**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	80.460			MHz	
Passband	Insertion Loss	1		9.5	12.0	dB	
	1dB Passband		BW <sub>1</sub>	3.7	4.1		MHz
	15dB Bandwidth		BW <sub>15</sub>		6.6	6.7	MHz
	30dB Bandwidth		BW <sub>30</sub>		7.6	7.7	MHz
	Amplitude Ripple over $f_c \pm 1.85$ MHz				0.5	1.1	dB <sub>P-P</sub>
	Group Delay Variation over $f_c \pm 1.85$ MHz	GDV		60	150	ns <sub>P-P</sub>	
Rejection	50 to 74.39 MHz	1, 3	40	44		dB	
	74.39 to 75.99 MHz		34	40			
	85.21 to 86.65 MHz		37	44			
	86.65 to 91.50 MHz		40	48			
	91.50 to 95.21 MHz		44	53			
	95.21 to 100 MHz		45	53			
Operating Temperature Range	T <sub>A</sub>	1	-40		+85	°C	
Frequency Temperature Coefficient	FTC			-18		ppm/°C	
Differential Input	175 ohms						
Differential Output	1000 ohms						
Case Style	SMP-03-S 5 x 7 mm Nominal Footprint						
Lid Symbolization (YY=year, WW=week, S=shift) See note 4	RFM SF2040B-3 YYWWS						

**Electrical Connections**

Connection	Port 1 Hot	Port 1 Ground Return or Hot	Port 2 Hot	Port 2 Ground Return or Hot	Case Ground
Terminals	10	1	5	6	All Others

 **CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

**NOTES:**

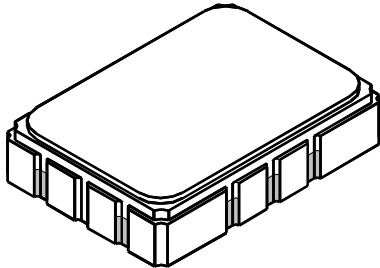
1. Unless noted otherwise, all specifications apply over the operating temperature range with filter soldered to the specified demonstration board with impedance matching to 50 Ω and measured with 50 Ω network analyzer.
2. Unless noted otherwise, all frequency specifications are referenced to the nominal center frequency,  $f_c$ .
3. 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.

# SMP-03-S Case



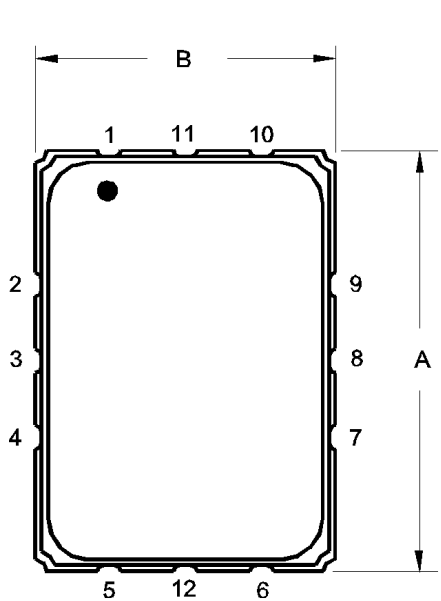
## 12-Terminal Ceramic Surface-Mount Case

### 5 x 7 mm Nominal Footprint

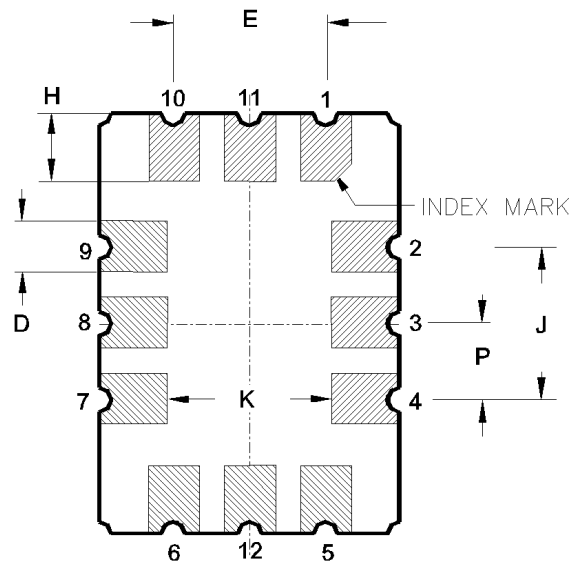
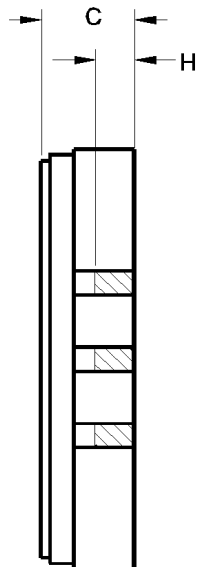


Case Dimensions						
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	6.80	7.00	7.20	0.268	0.276	0.283
B	4.80	5.00	5.20	0.189	0.197	0.205
C		1.65	2.00		0.065	0.079
D		0.80				
E	2.41	2.54	2.67	0.095	0.100	0.105
H	0.87	1.1	1.13	0.034	0.039	0.044
J		2.54				
K	2.87	3.00	3.13	0.113	0.118	0.123
P	1.14	1.27	1.40	0.045	0.050	0.055

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

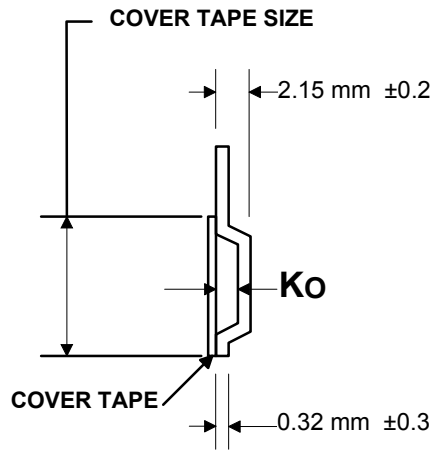
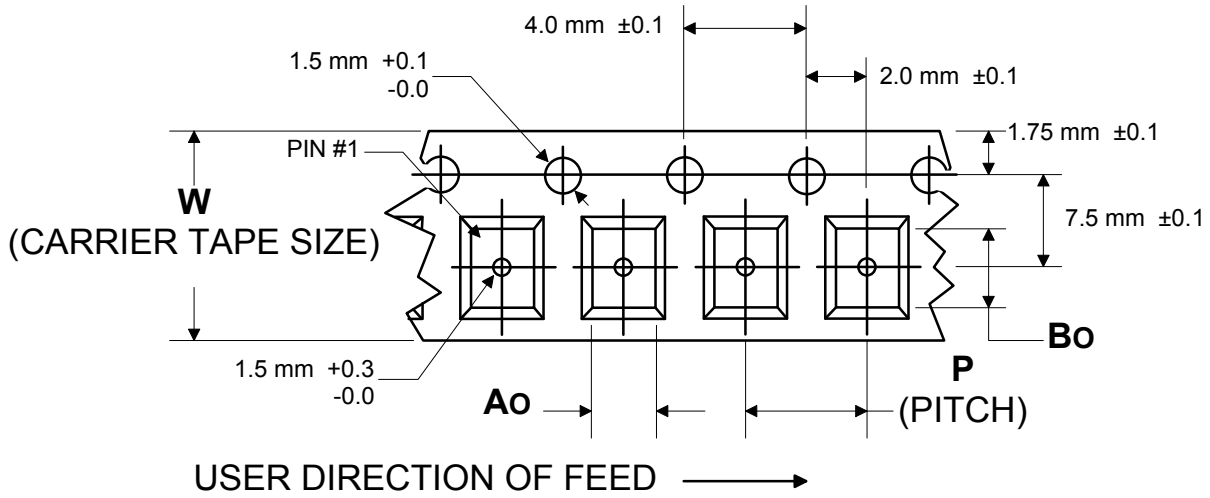


TOP VIEW



BOTTOM VIEW

**COMPONENT ORIENTATION and DIMENSIONS**



Carrier Tape Dimensions		
Ao	5.5 mm	±0.1
Bo	7.5 mm	±0.1
Ko	2.0 mm	±0.1
Pitch	8.0 mm	±0.1
W	16.0 mm	±0.3