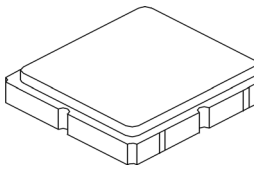
muRata
INNOVATOR IN ELECTRONICS

SF2181D

140 MHz SAW Filter

- ***22 MHz Filter Bandwidth***
- ***3.8 x 3.8 x 1.4 mm Surface-mount Package***
- ***Complies with Directive 2002/95/EC (RoHS)***



SM3838-8

Absolute Maximum Ratings

Rating	Value	Units
Maximum Incident Power in Passband	+10	dBm
Maximum DC Voltage between any Two Terminals	3	VDC
Storage Temperature Range in Tape and Reel	-40 to +85	°C
Suitable for Lead-free Soldering - Maximum Soldering Profile	260°C for 30 s	

Electrical Characteristics

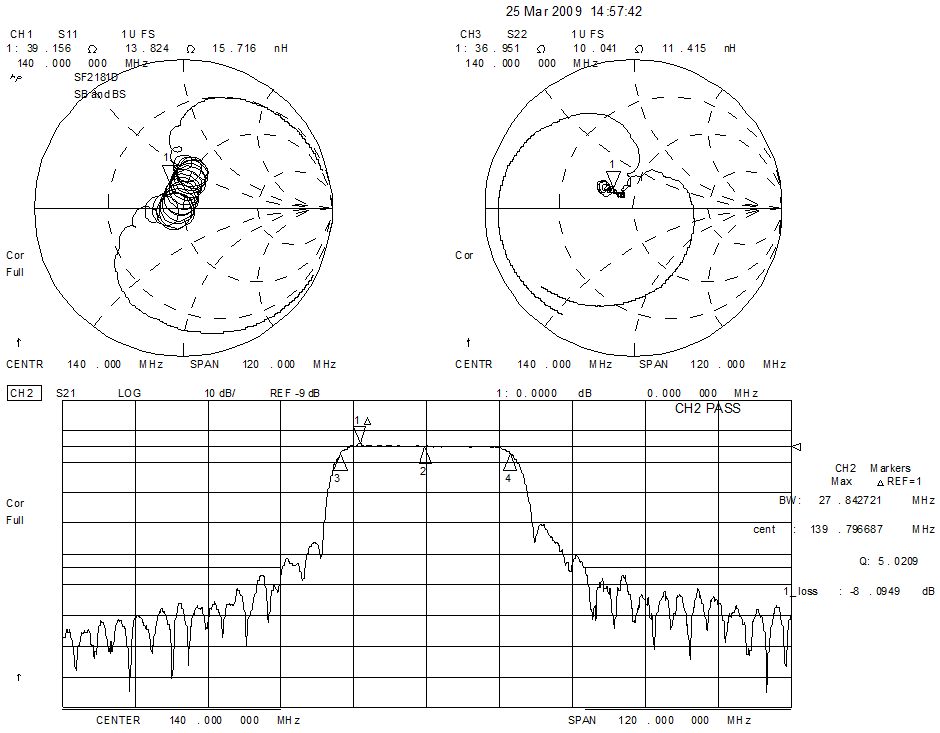
Characteristic	Sym	Notes	Min	Typ	Max	Units
Nominal Center Frequency	F_C	1		140		MHz
Insertion Loss	IL_{MAX}	1		8	9	dB
Insertion Loss Variation over Temperature		1			1	dB
3 dB Bandwidth		1	22	27		MHz
Passband Amplitude Ripple, Matching Network A, 129 to 151 MHz		1		0.8	1.2	dB_{P-P}
Passband Amplitude Ripple, Matching Network B, 129 to 151 MHz		1		0.6	1.0	dB_{P-P}
Passband Amplitude Ripple, Matching Network C or D, 130 to 150 MHz				0.9	1.0	dB_{P-P}
Absolute Attenuation (referenced to IL_{MAX})						
10 to 116 MHz		3	35	40		dB
165 to 700 MHz		3	35	40		dB
Absolute Group Delay in Passband		1		300	350	ns
Passband Group Delay Ripple, Matching Network A or B, 129 to 151 MHz		1		40	80	ns_{P-P}
Input Impedance, Unbalanced Matching Network		1		50		ohm
Input Impedance, Balanced Matching Network		1		200		ohm
Input Return Loss through any Matching Network		1	6	14		dB
Output Impedance, Unbalanced Matching Network		1		50		ohm
Output Impedance, Balanced Matching Network		1		200		ohm
Output Return Loss through any Matching Network		1	6	14		dB
Operating Temperature Range			-40		+85	°C
Case Style		SM3838-8 3.8 x 3.8 mm Nominal Footprint				
Lid Symbolization (Y=year, WW=week, S=shift)		RFM 872 YWWS				

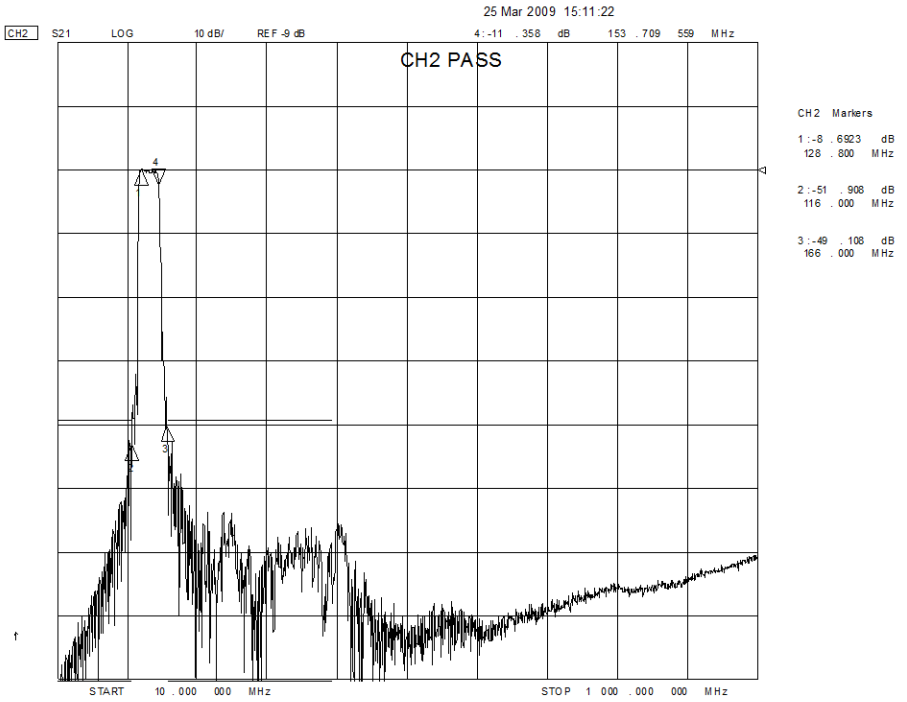
CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

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

SF2181D, Using Matching Network A





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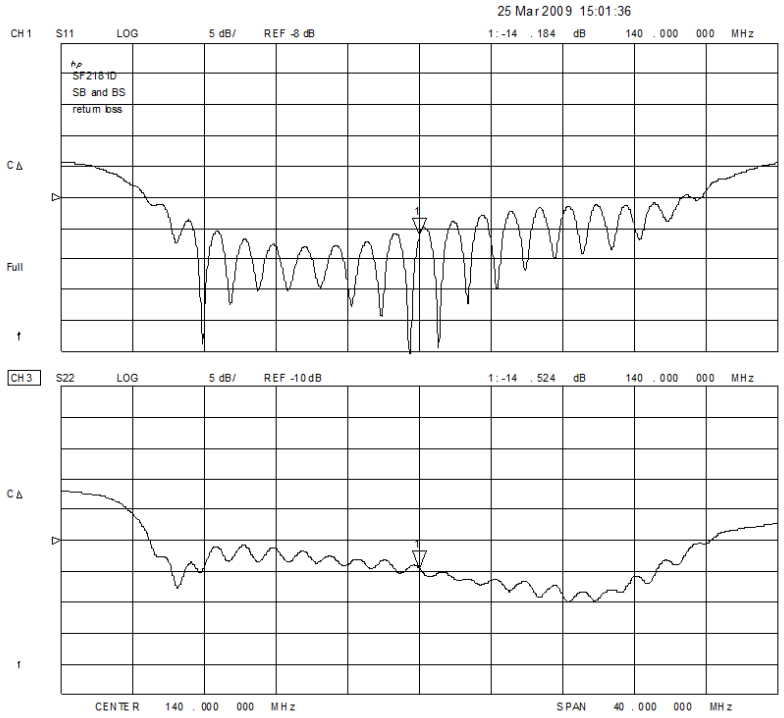
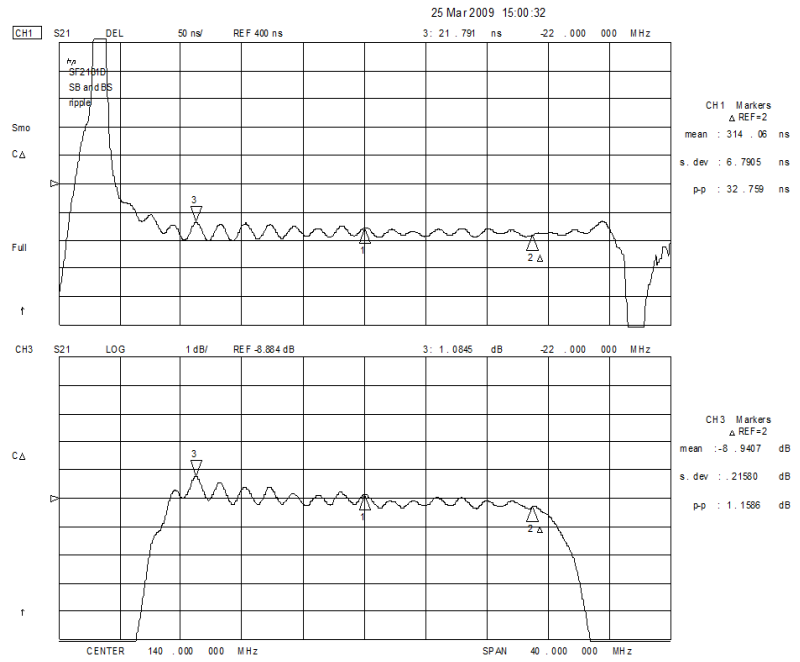
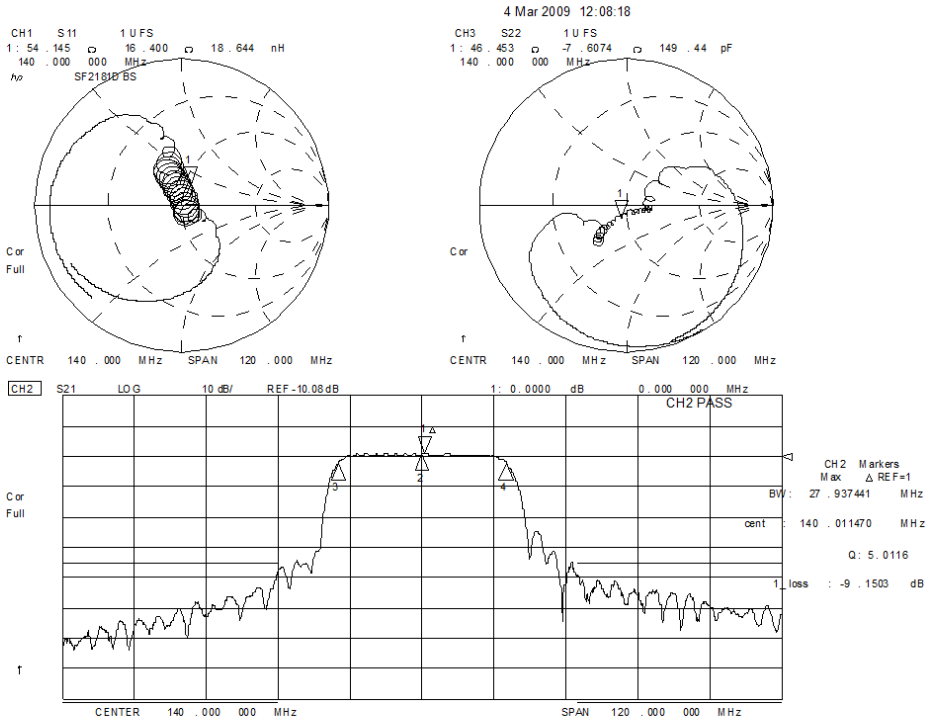
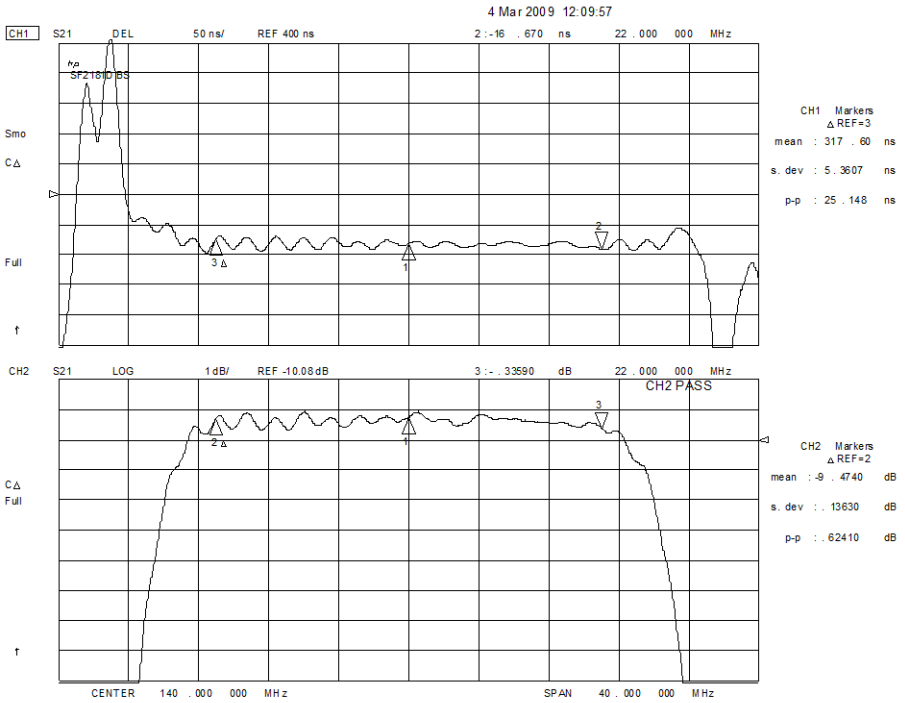


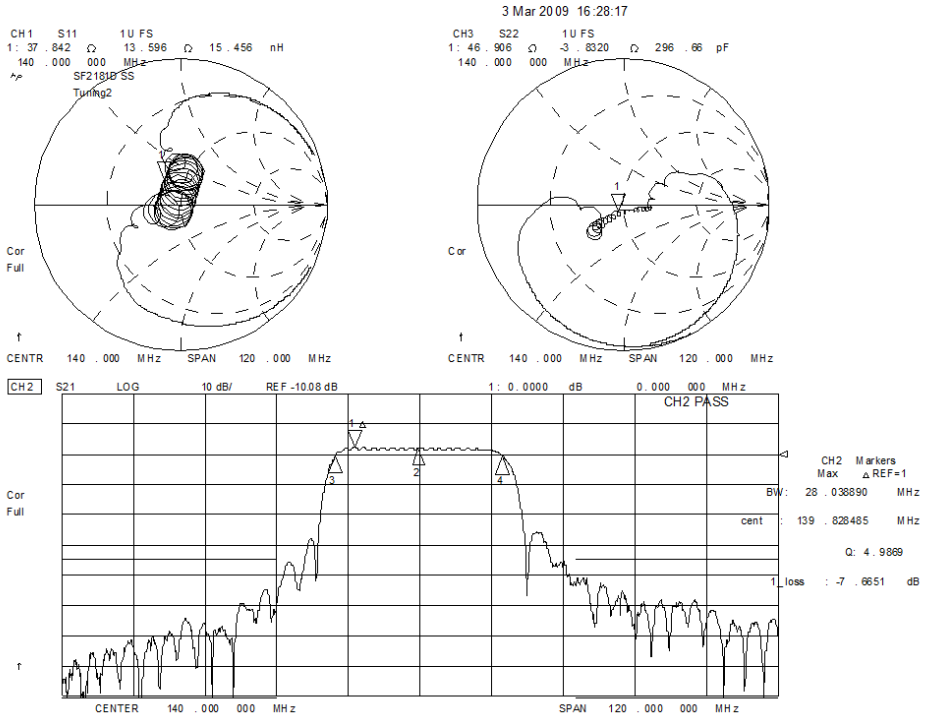


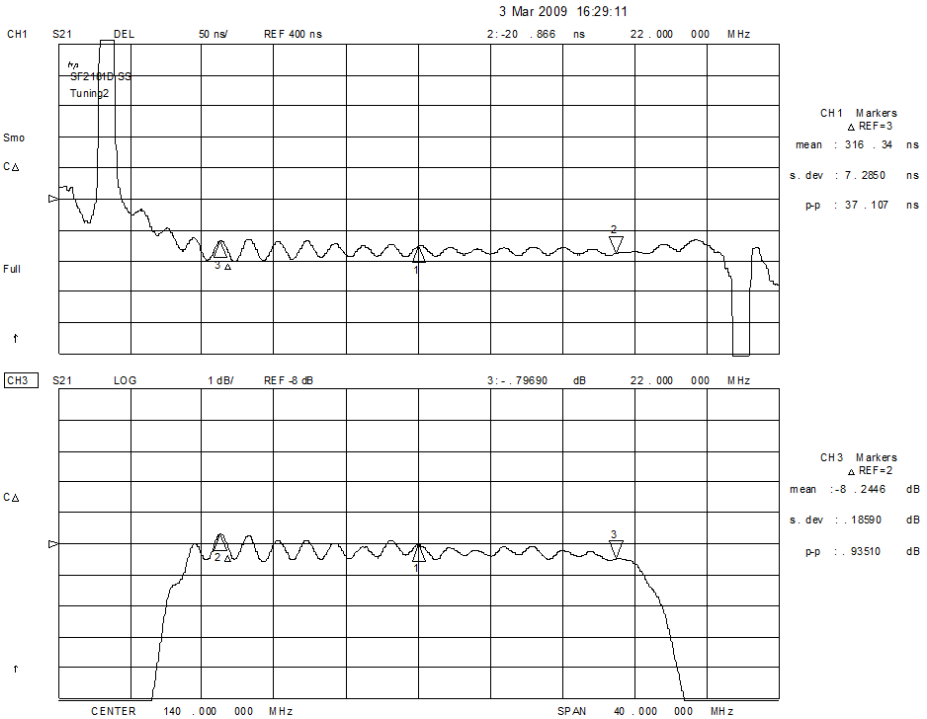
SF2181D, Using Matching Network B



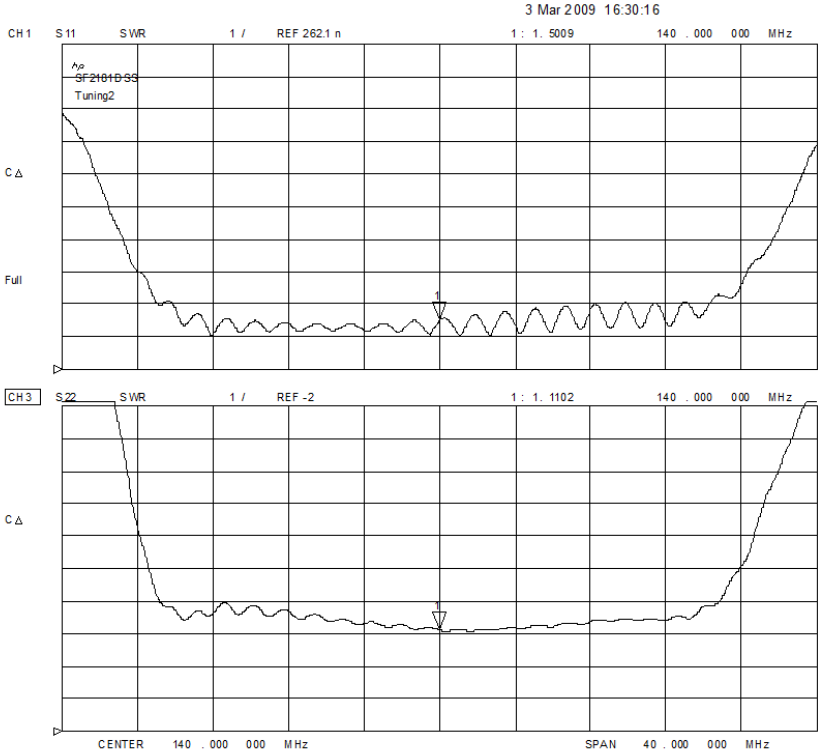


SF2181D, Using Matching Network C

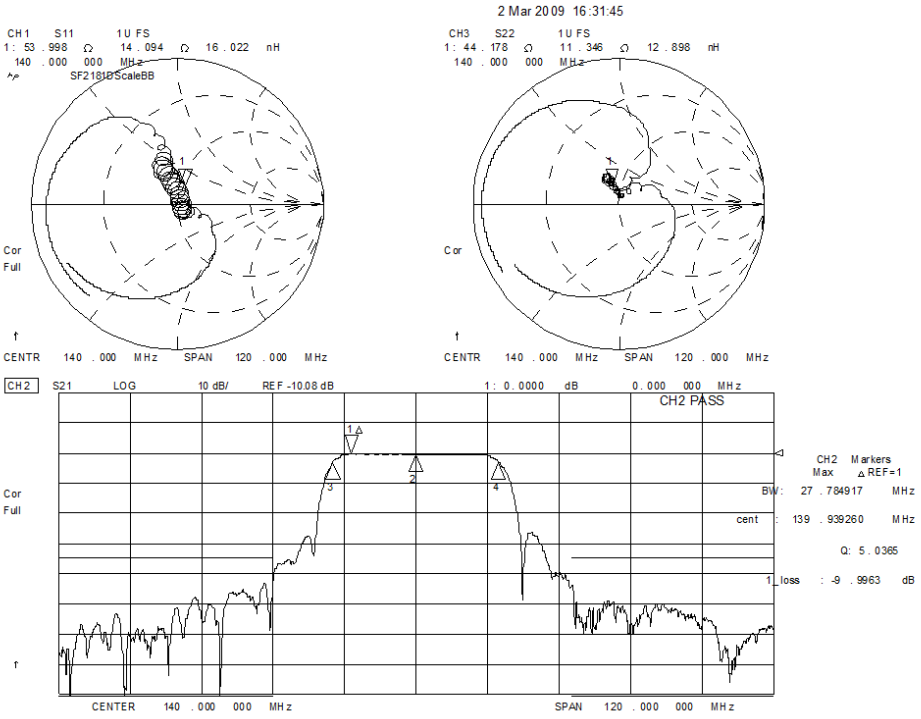


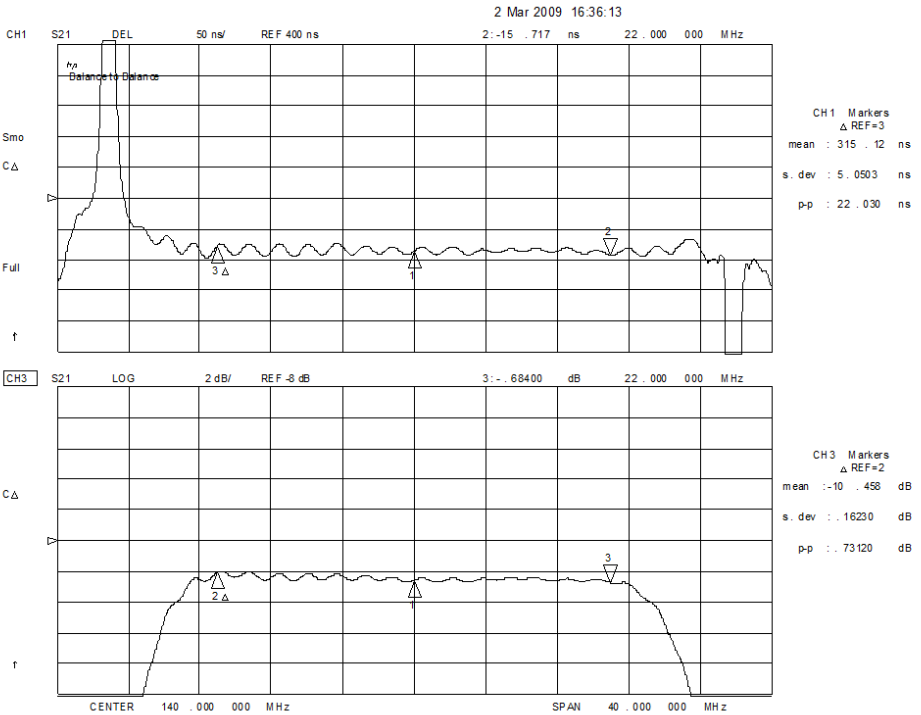


SF2181D, Using Matching Network C

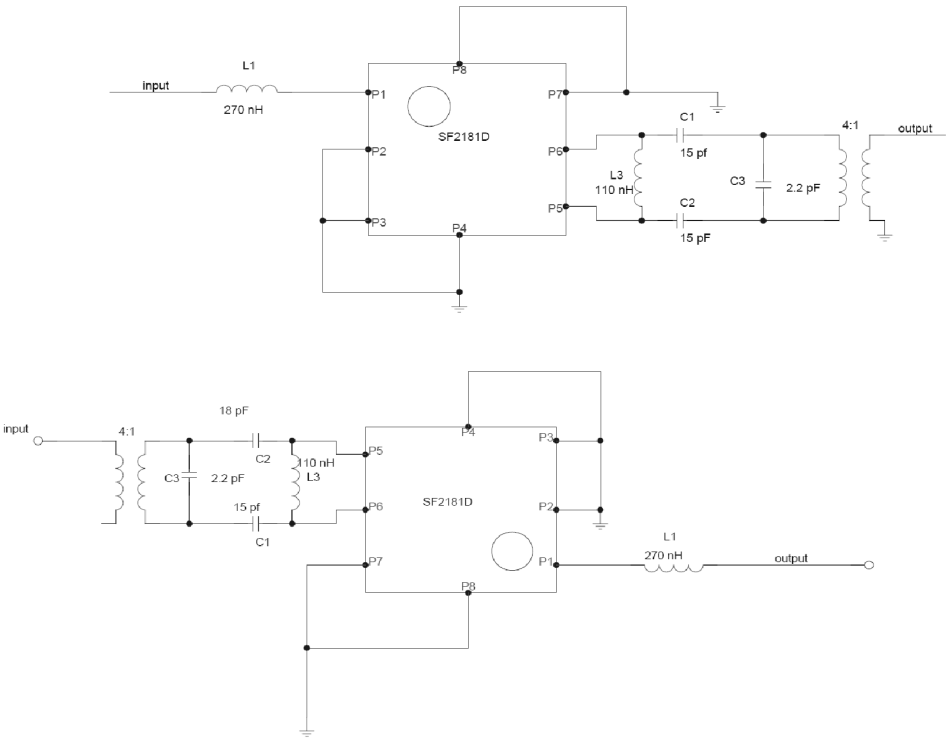


SF2181D, Using Matching Network D

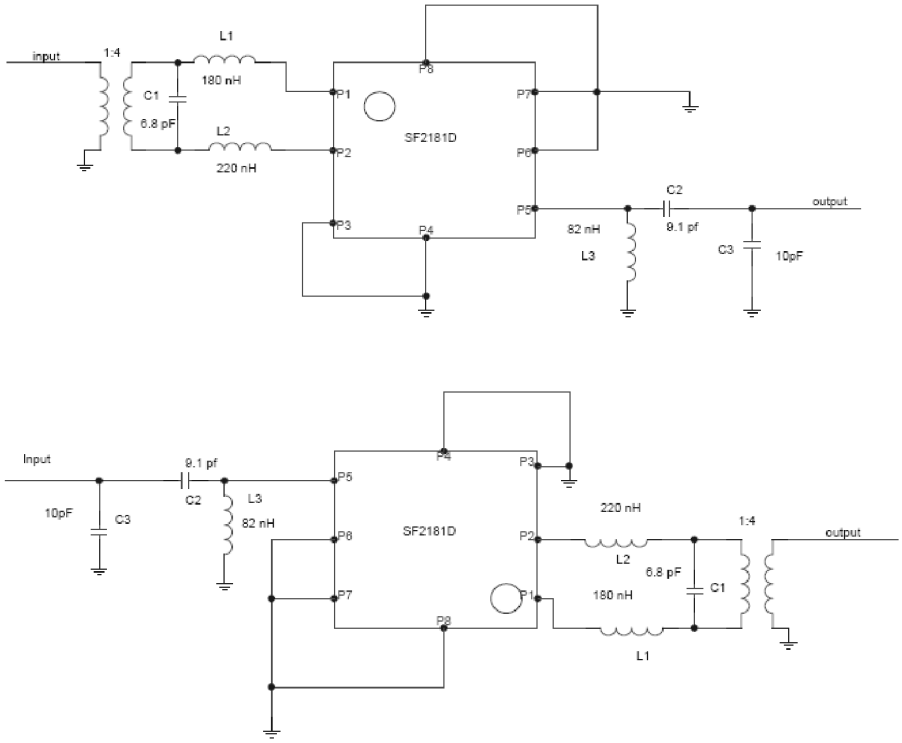




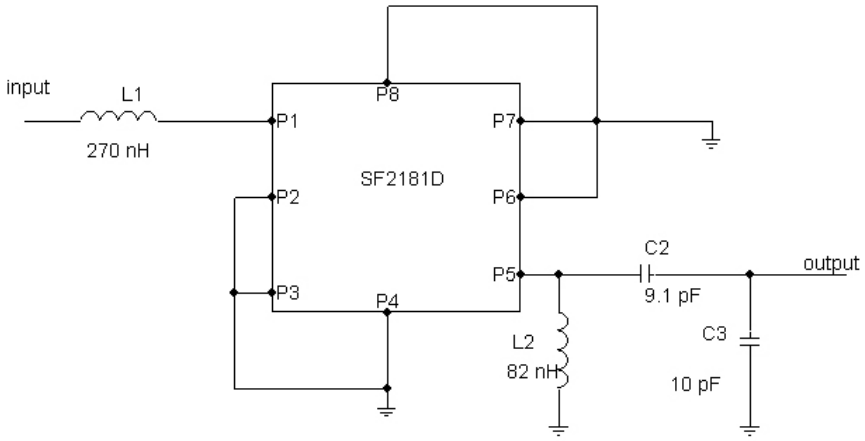
SF2181D, Matching Network A, Two Options



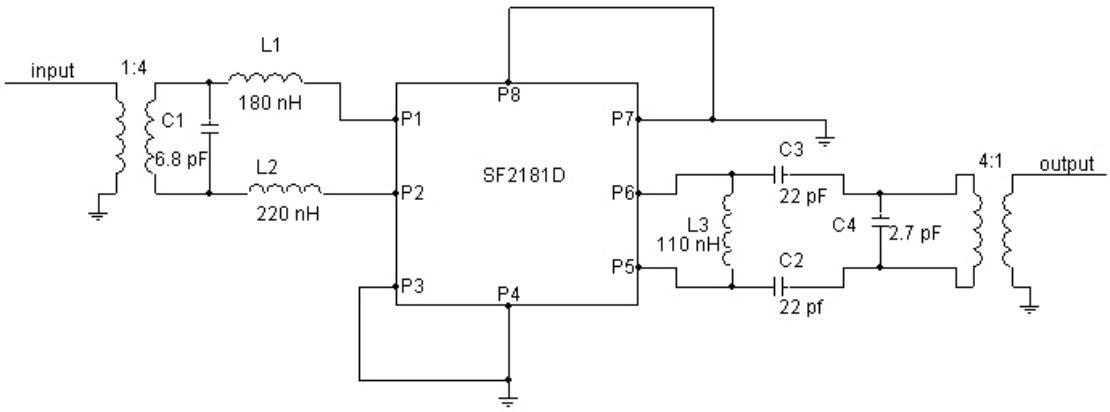
SF2181D, Matching Network B, Two Options



SF2181D, Matching Network C

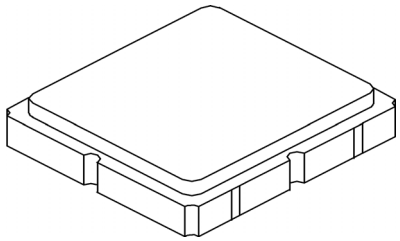


SF2181D, Matching Network D



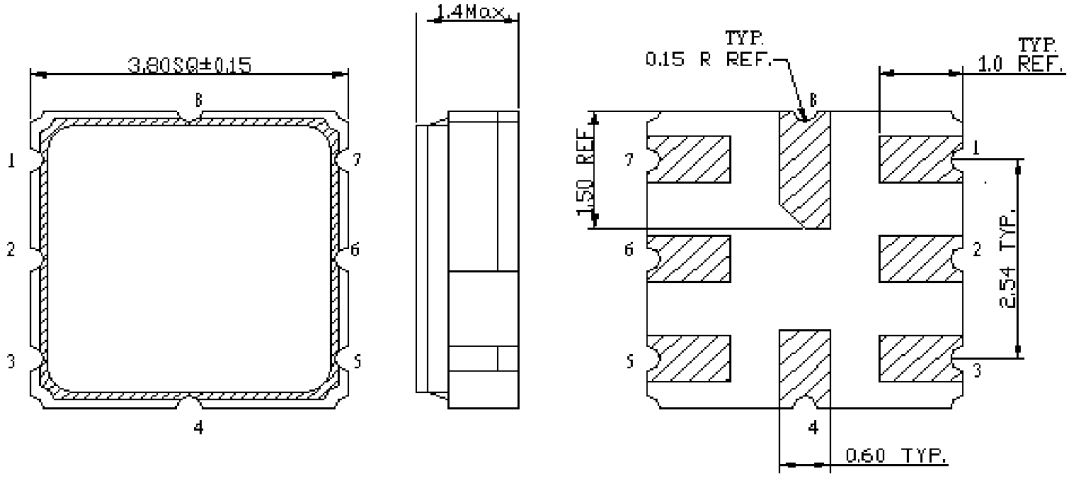
SM3838-8 Case

8-Terminal Ceramic Surface-Mount Case
3.8 X 3.8 mm Nominal Footprint

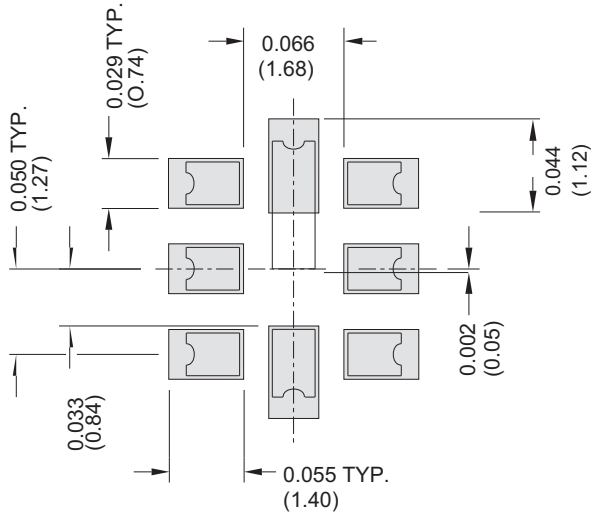


Top View

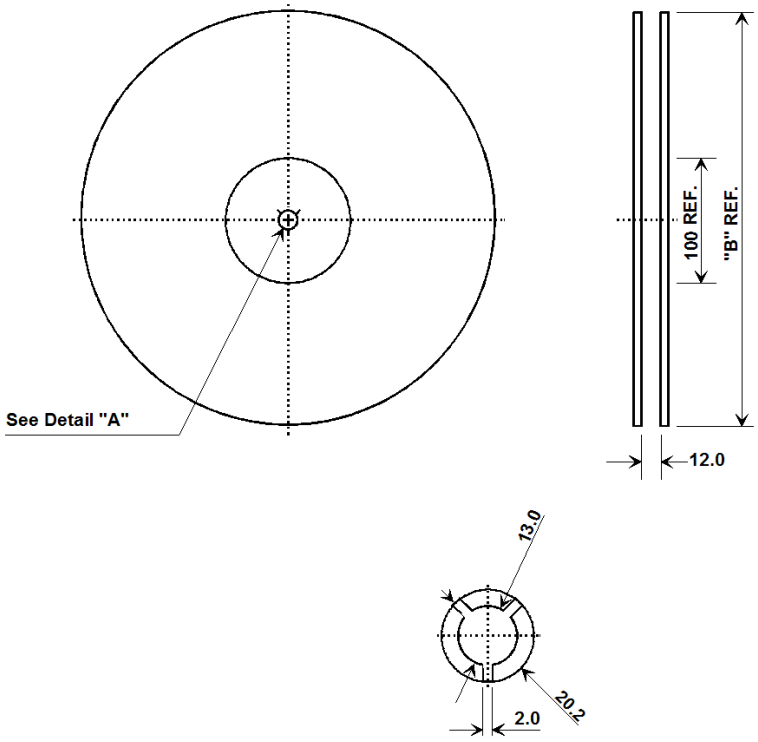
Bottom View



PCB Footprint for 180 Degree Rotation Option



Tape and Reel Specifications



"B " Nominal Size		Quantity Per Reel
Inches	millimeters	
7	178	1000
13	330	3000

COMPONENT ORIENTATION and DIMENSIONS

Carrier Tape Dimensions	
Ao	4.25 mm
Bo	4.25 mm
Ko	1.30 mm
Pitch	8.0 mm
W	12.0 mm