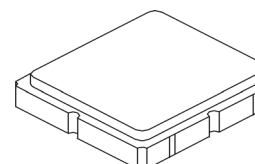


- 22 MHz Filter Bandwidth
- 3.8 x 3.8 x 1.4 mm Surface-mount Package
- Complies with Directive 2002/95/EC (RoHS)
- Moisture Sensitivity Level: 1
- AEC-Q200 Qualified

**SF2181D**

**140 MHz  
SAW Filter**



**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**

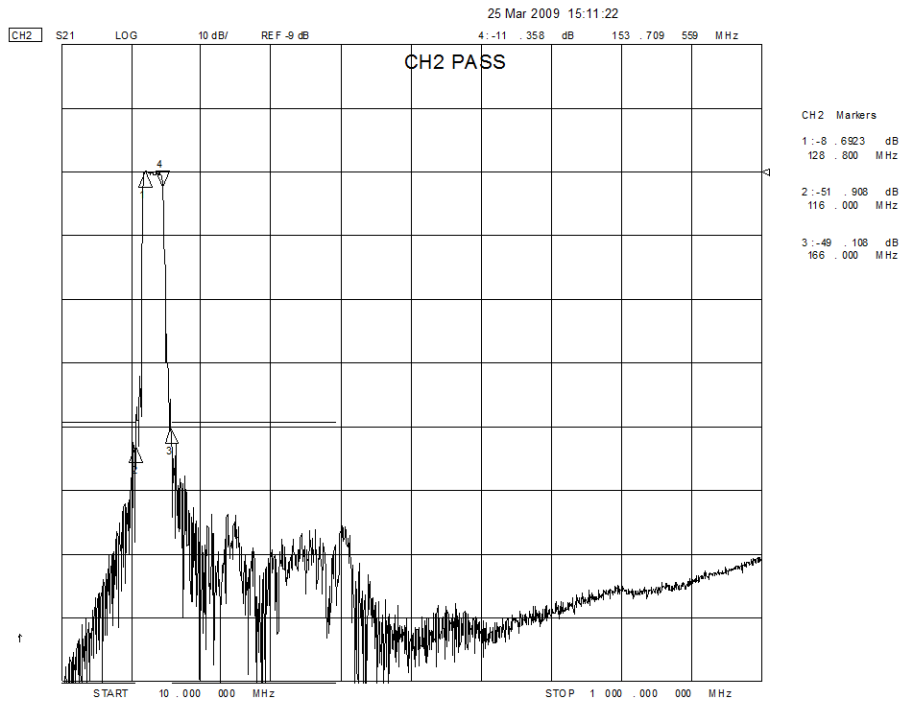
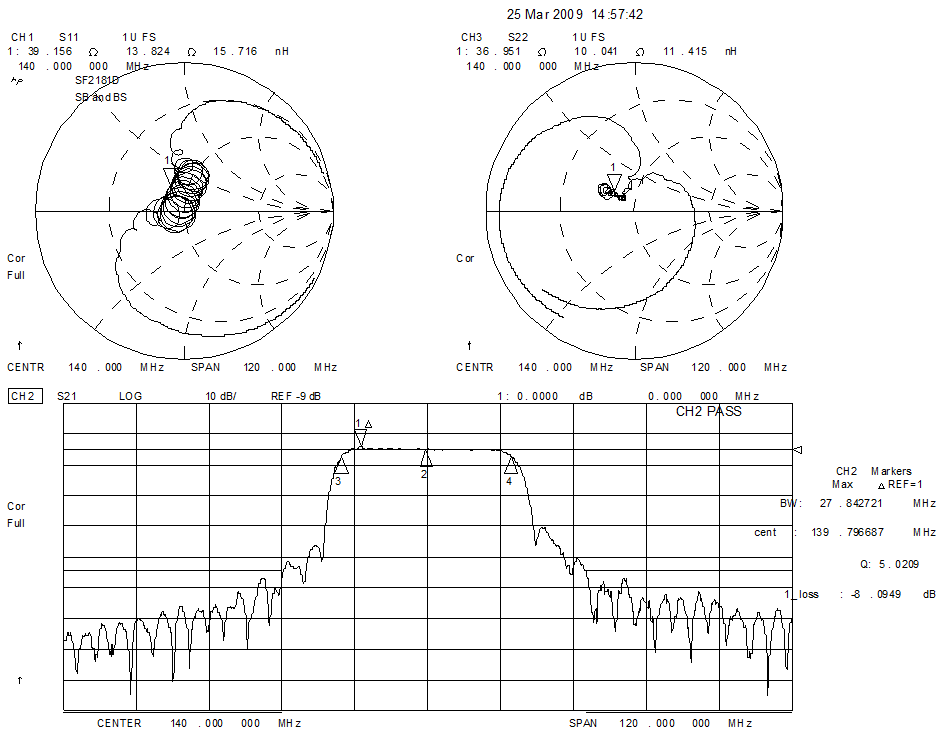
Characteristic	Sym	Notes	Min	Typ	Max	Units
Nominal Center Frequency	$F_C$			140		MHz
Insertion Loss	$IL_{MAX}$			8	9	dB
Insertion Loss Variation over Temperature					1	dB
3 dB Bandwidth			22	27		MHz
Passband Amplitude Ripple, Matching Network A, 129 to 151 MHz				0.8	1.2	dB <sub>p-p</sub>
Passband Amplitude Ripple, Matching Network B, 129 to 151 MHz				0.6	1.0	dB <sub>p-p</sub>
Passband Amplitude Ripple, Matching Network C or D, 130 to 150 MHz				0.9	1.0	dB <sub>p-p</sub>
Absolute Attenuation (referenced to $IL_{MAX}$ )						
10 to 116 MHz			35	40		dB
165 to 700 MHz			35	40		dB
Absolute Group Delay in Passband				300	350	ns
Passband Group Delay Ripple, Matching Network A or B, 129 to 151 MHz				40	80	ns <sub>p-p</sub>
Input Impedance, Unbalanced Matching Network				50		ohm
Input Impedance, Balanced Matching Network				200		ohm
Input Return Loss through any Matching Network			6	14		dB
Output Impedance, Unbalanced Matching Network				50		ohm
Output Impedance, Balanced Matching Network				200		ohm
Output Return Loss through any Matching Network			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)			872 , <u>YWWS</u>			

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

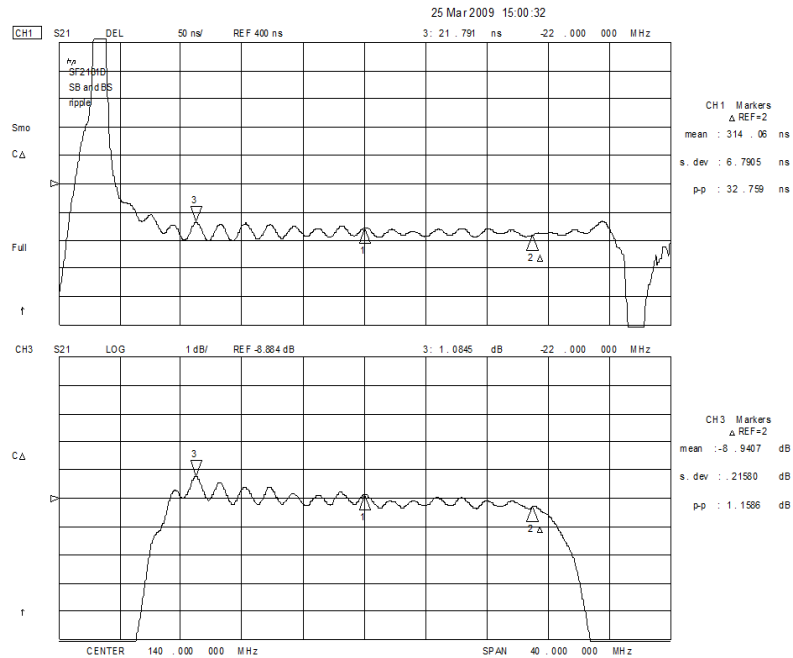
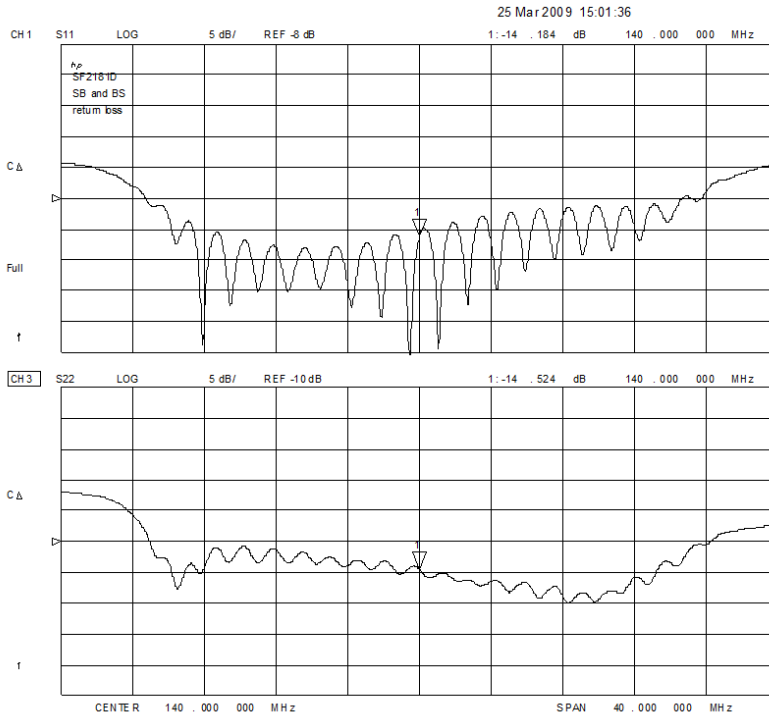
**NOTES:**

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

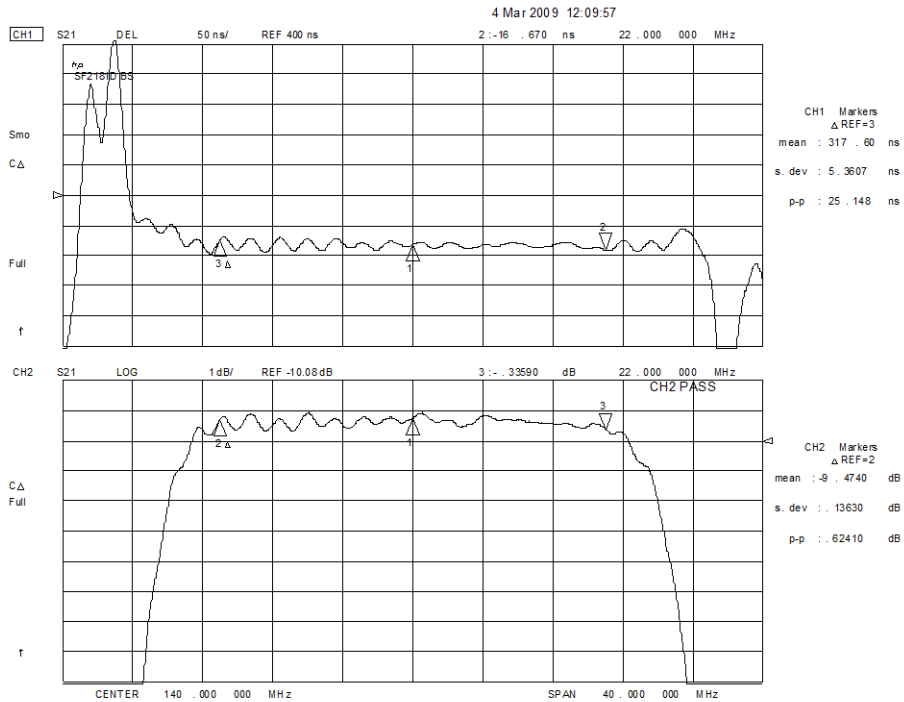
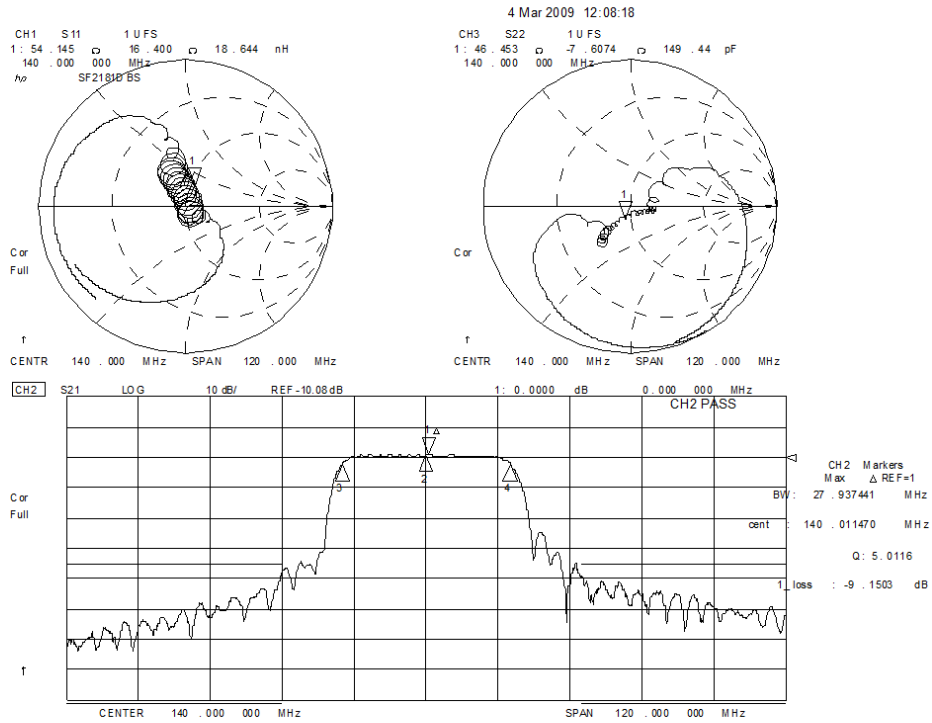
# SF2181D, Using Matching Network A



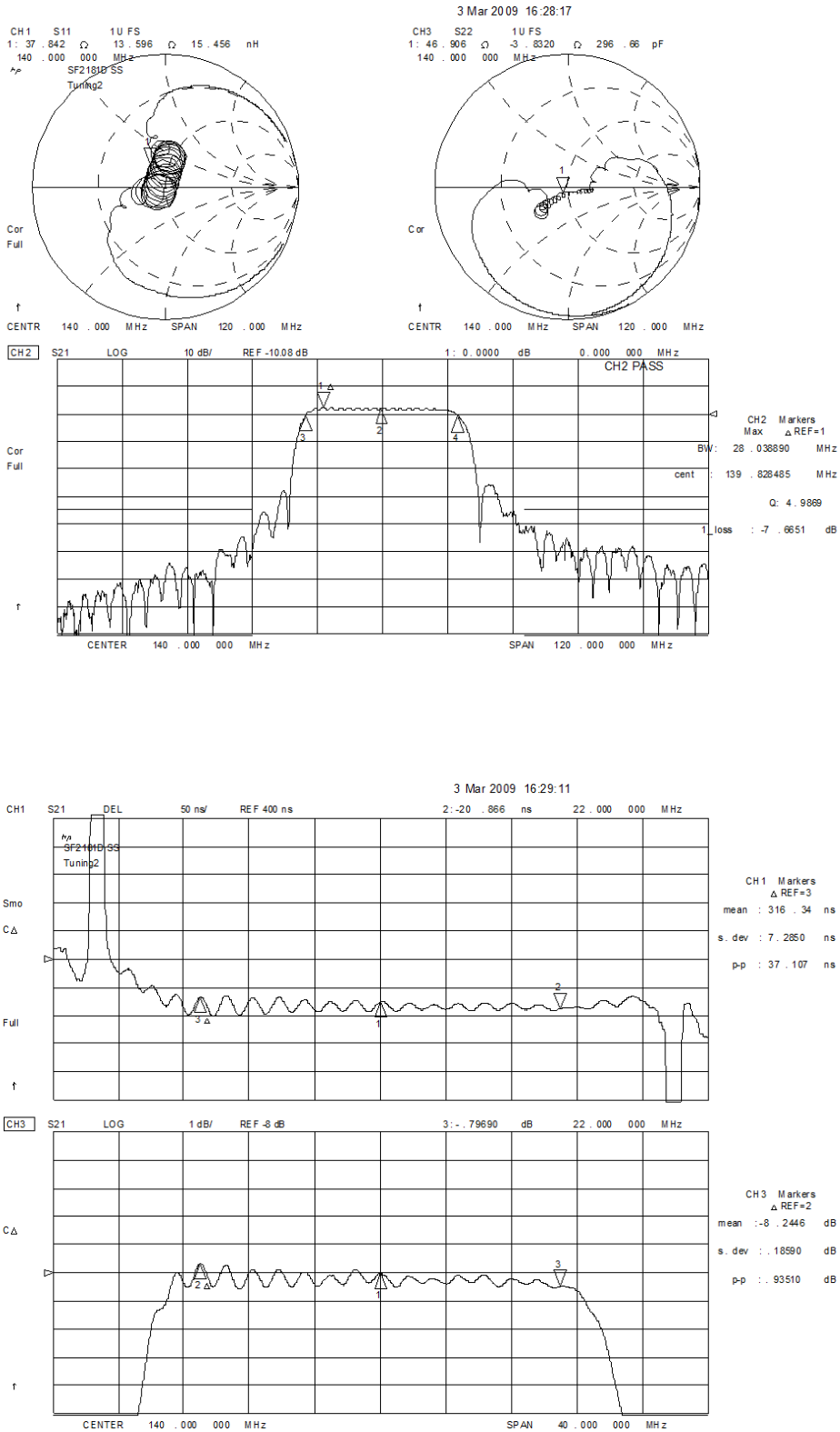
# SF2181D, Using Matching Network A



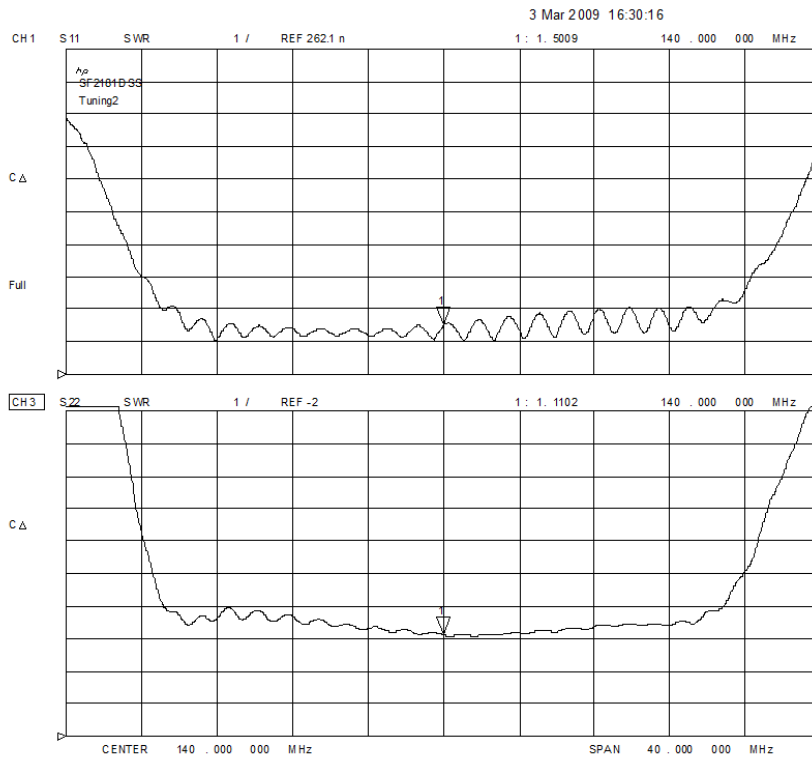
# SF2181D, Using Matching Network B



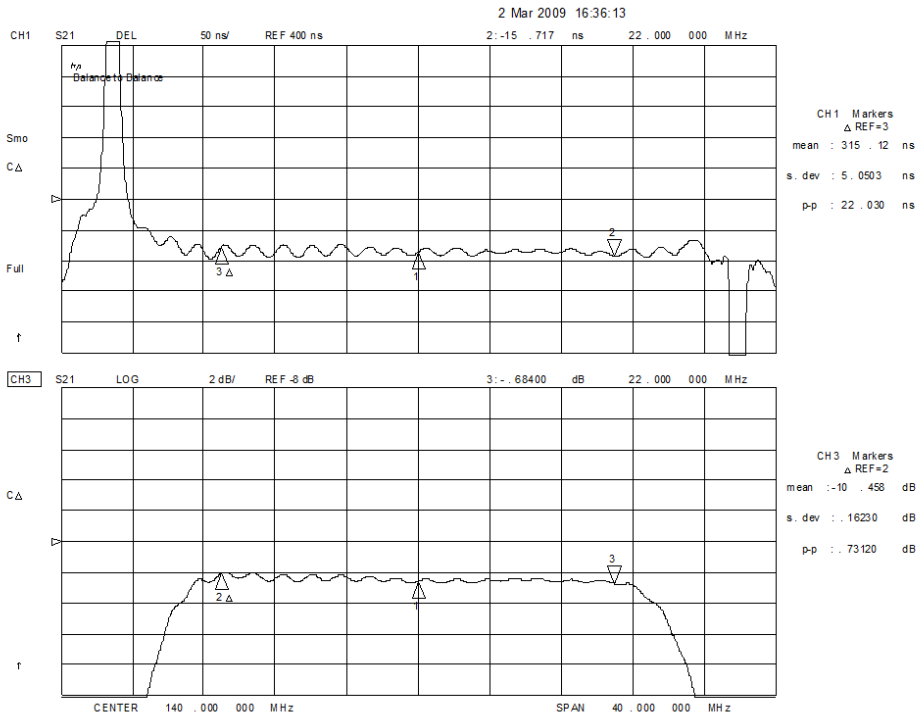
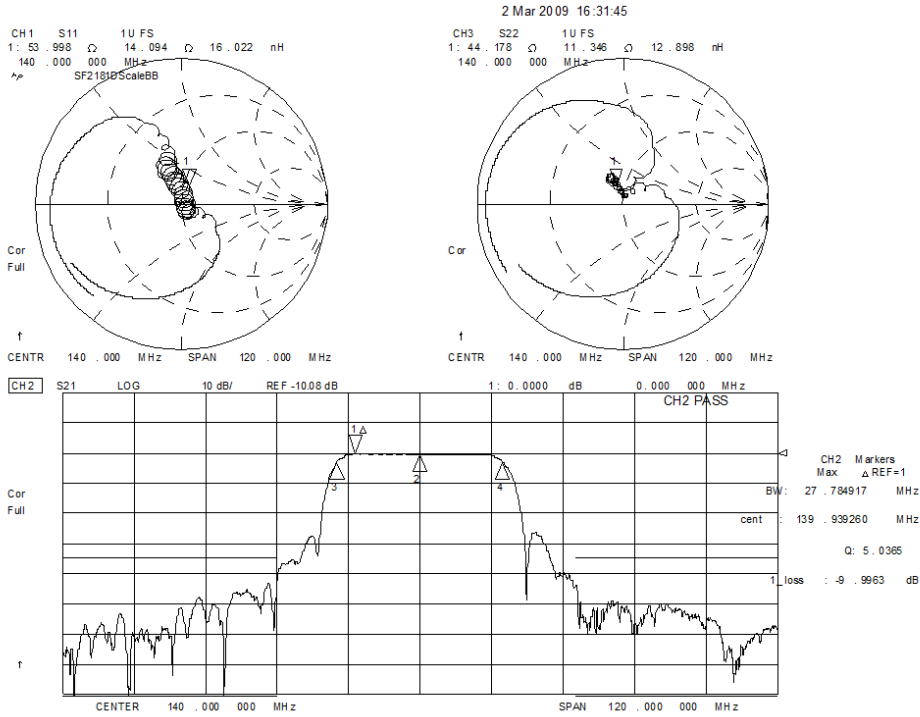
# SF2181D, Using Matching Network C



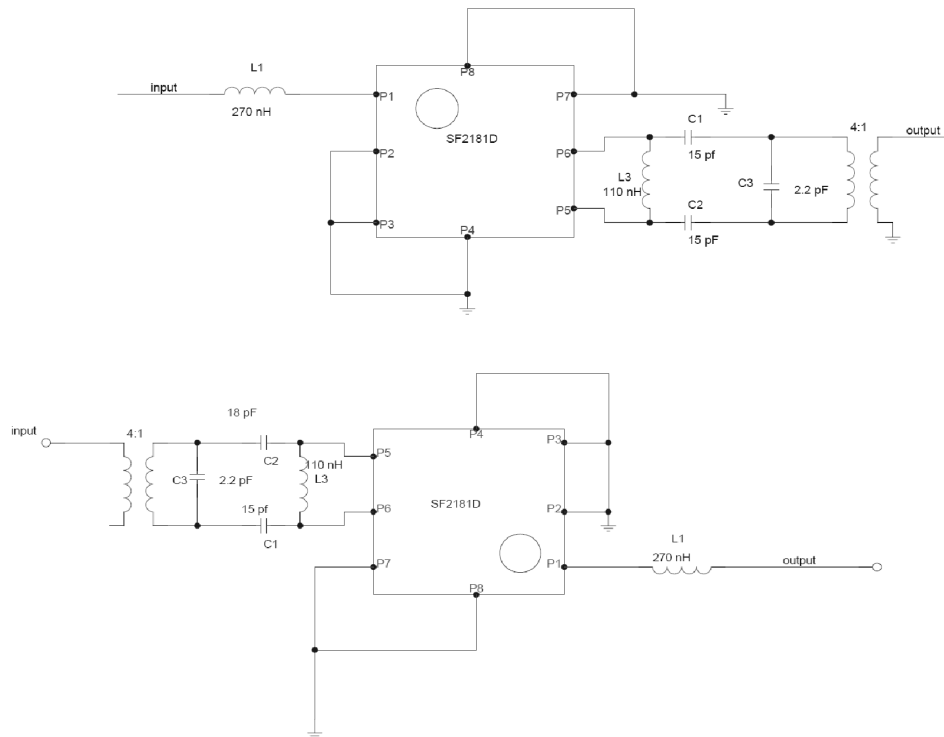
# SF2181D, Using Matching Network C



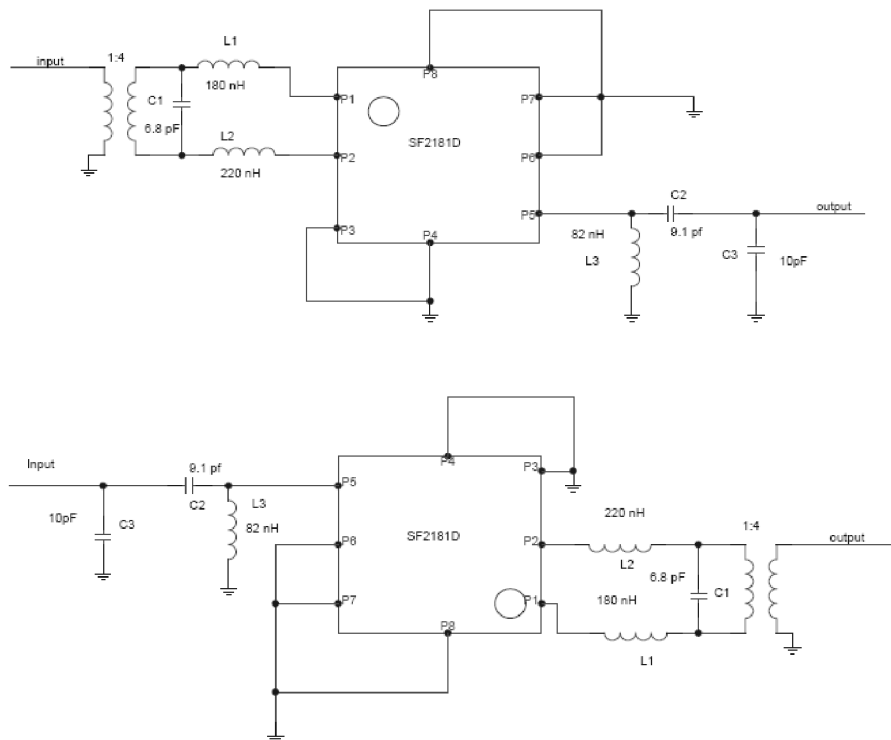
# SF2181D, Using Matching Network D



## SF2181D, Matching Network A, Two Options

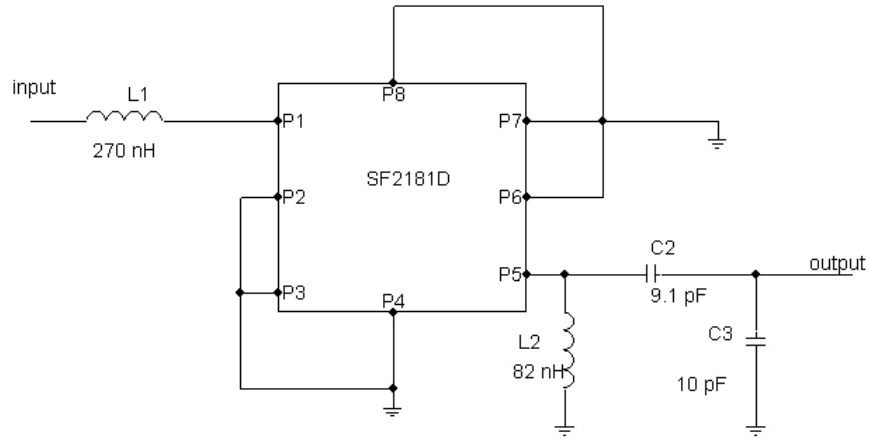


## SF2181D, Matching Network B, Two Options

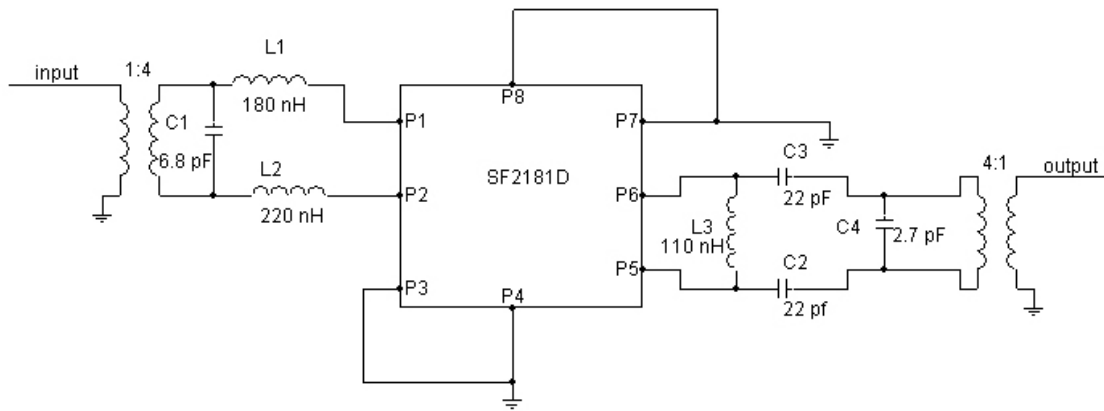




## SF2181D, Matching Network C



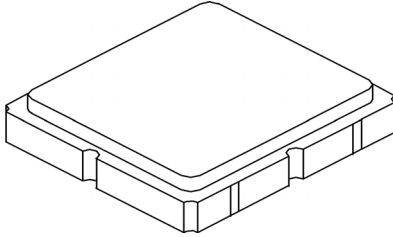
## SF2181D, Matching Network D



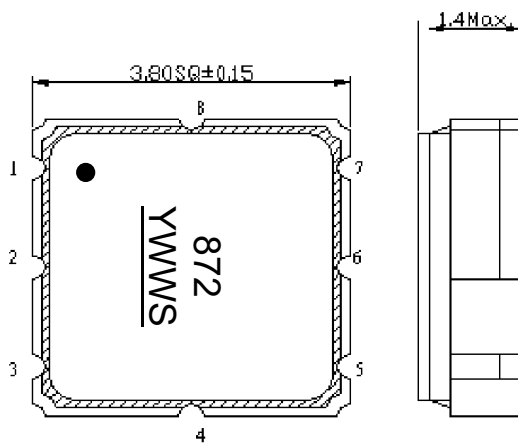
# SM3838-8 Case

## 8-Terminal Ceramic Surface-Mount Case

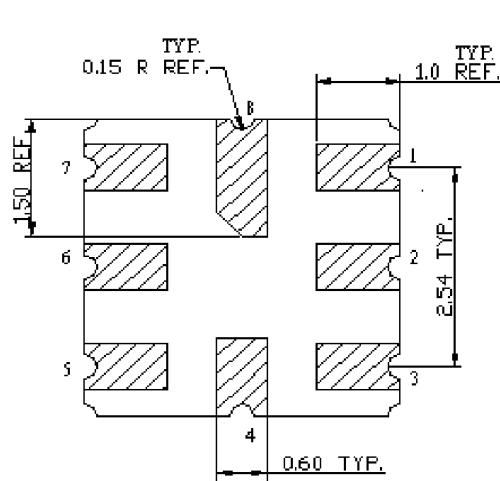
### 3.8 X 3.8 mm Nominal Footprint



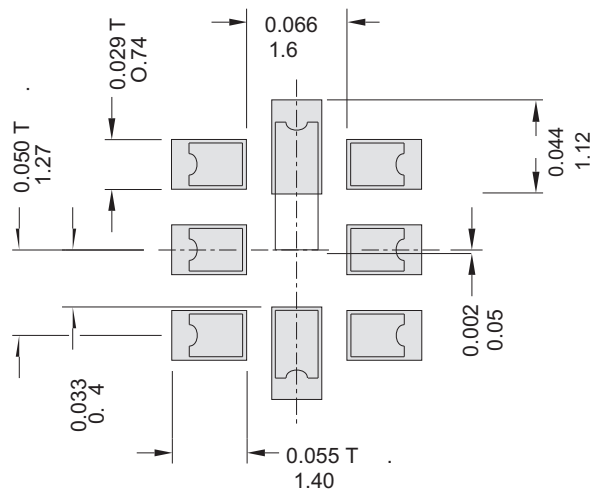
Top View



Bottom View

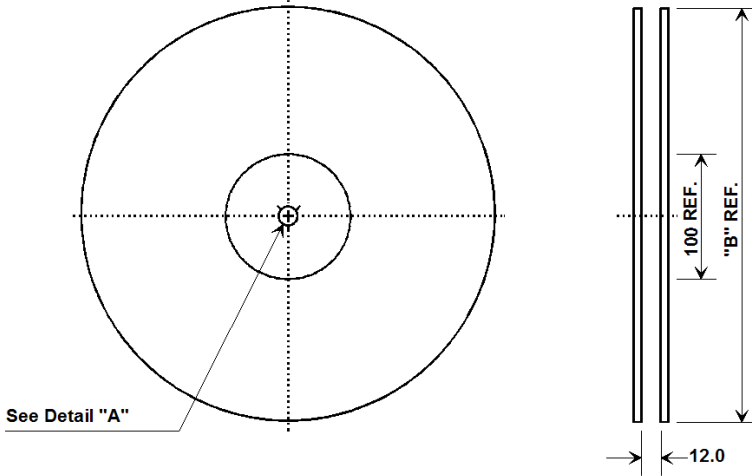


### PCB Footprint for 180 Degree Rotation Option

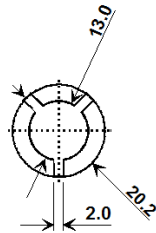


# Tape and Reel Specifications

Tape and Reel Standard per ANSI/EIA-481

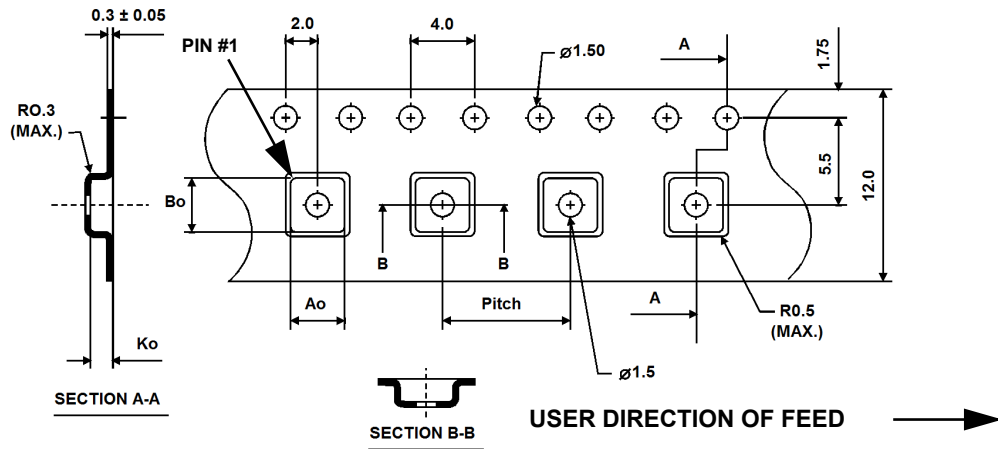


"B" Nominal Size		Quantity Per Reel
Inches	millimeters	
7	178	500
13	330	3000



## 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



## Recommended Reflow Profile

1. Preheating shall be fixed at 150~180°C for 60~90 seconds.
2. Ascending time to preheating temperature 150°C shall be 30 seconds min.
3. Heating shall be fixed at 220°C for 50~80 seconds and at 260°C +0/-5°C peak (10 seconds).
4. Time: 5 times maximum.

