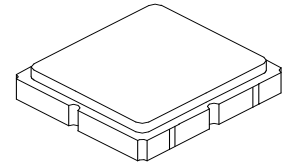


**SF2182D**

**140 MHz  
SAW Filter**



**SM3838-8**

- Precision 140 MHz SAW Filter
- 22 MHz 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

**Absolute Maximum Ratings**

Rating	Value	Units
Maximum Incident Power in Passband	+10	dBm
Maximum DC Voltage on any Non-ground Terminal	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	$IL_{MAX}$			13.5	15.0	dB
Insertion Loss Variation over Temperature					1	dB
3 dB Bandwidth			40	43		MHz
Passband Amplitude Ripple, Single-ended Matching, 120 to 160 MHz				0.8	1.5	dB <sub>P-P</sub>
Passband Amplitude Ripple, Balanced Matching, 120 to 160 MHz				1.2	2.0	dB <sub>P-P</sub>
Attenuation Referenced to $IL_{MAX}$						
10 to 70 MHz			45	50		dB
70 to 115 MHz			25	40		
166.5 to 200 MHz			25	40		
200 to 400 MHz			45	50		
Absolute Group Delay in Passband				400	450	ns
Passband Group Delay Ripple, Matching Network A or B, 129 to 151 MHz				20	50	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			3	8		dB
Output Impedance, Unbalanced Matching Network				50		ohm
Output Impedance, Balanced Matching Network				200		ohm
Output Return Loss through any Matching Network			3	10		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			873 ,YWW			

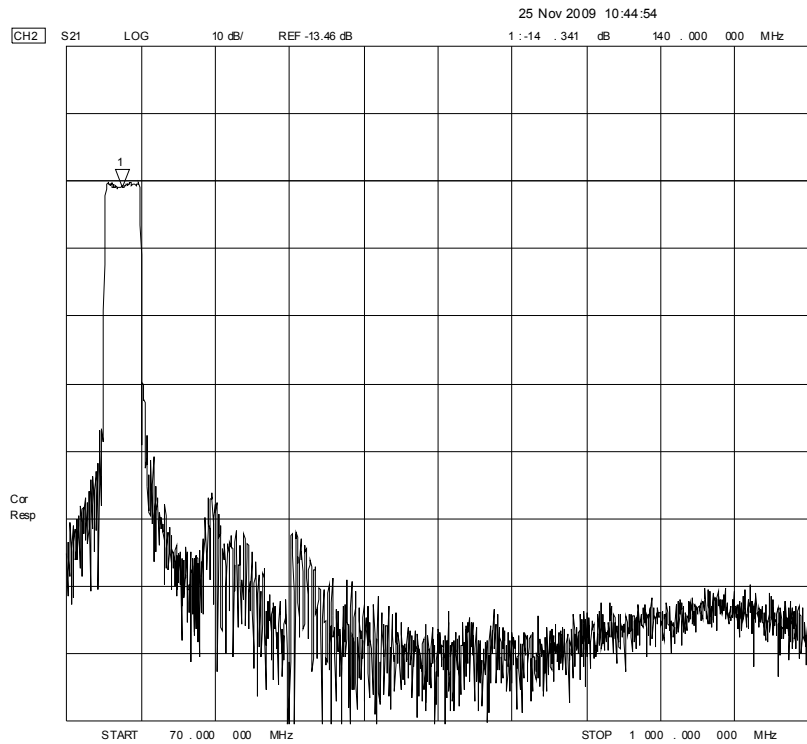
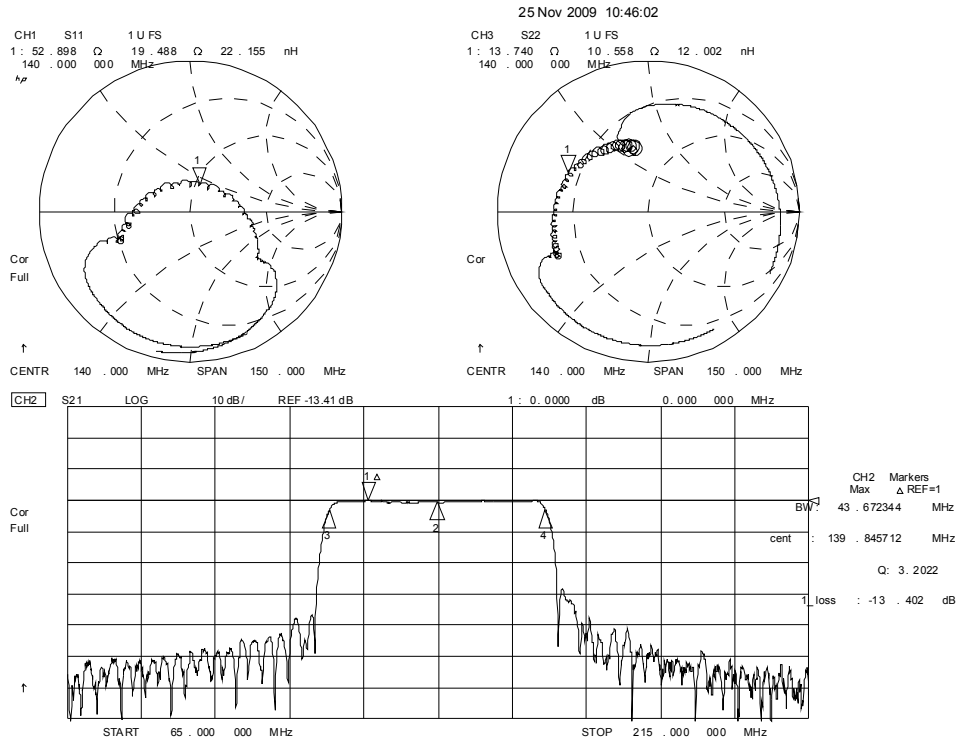


**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.**

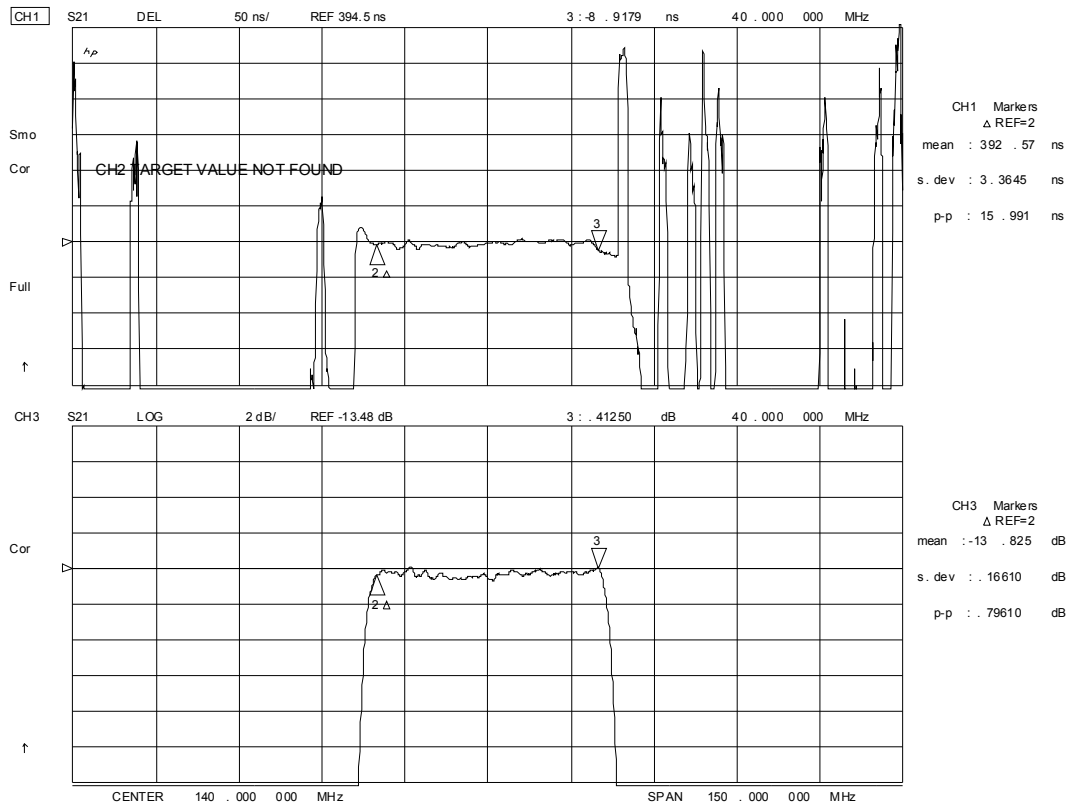
**NOTES:**

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.

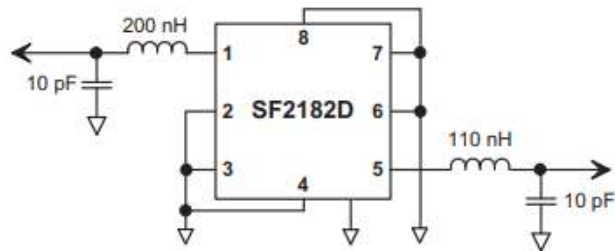
# SF2182D, Single-ended Matching



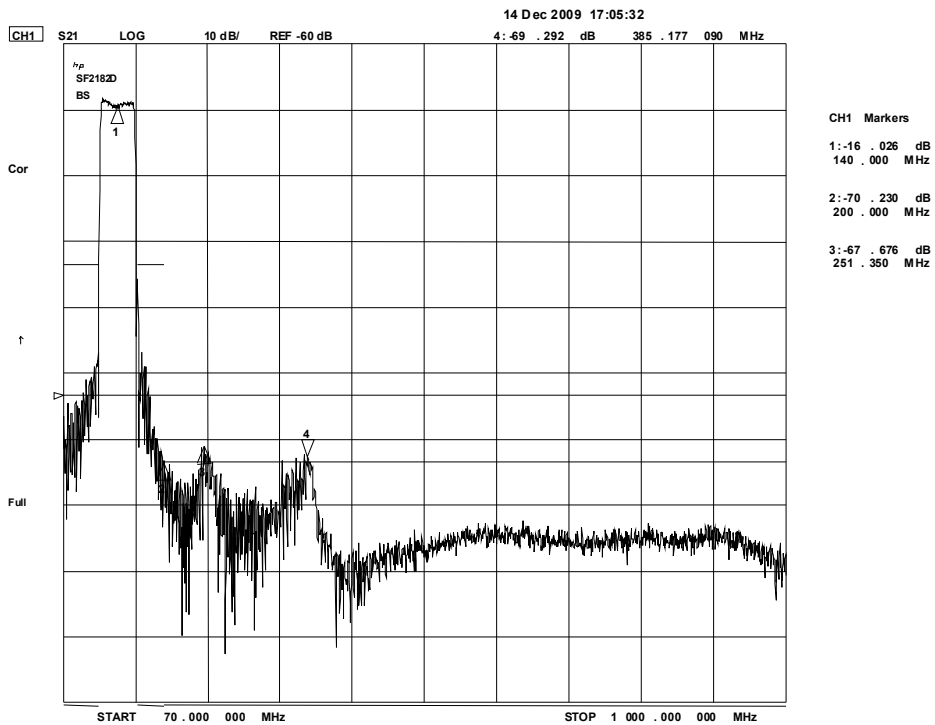
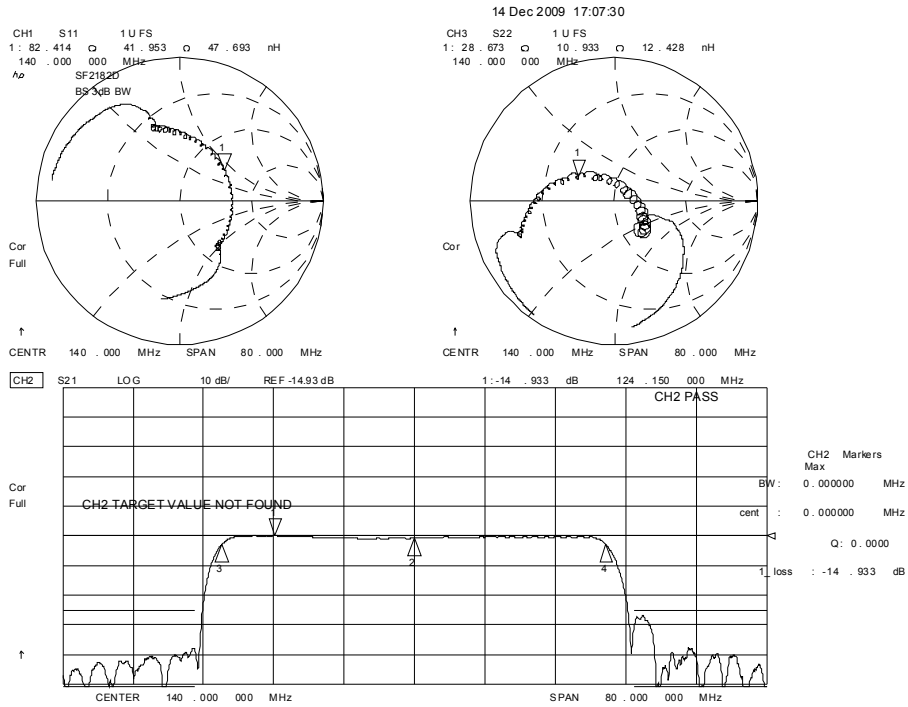
25 Nov 2009 10:48:26

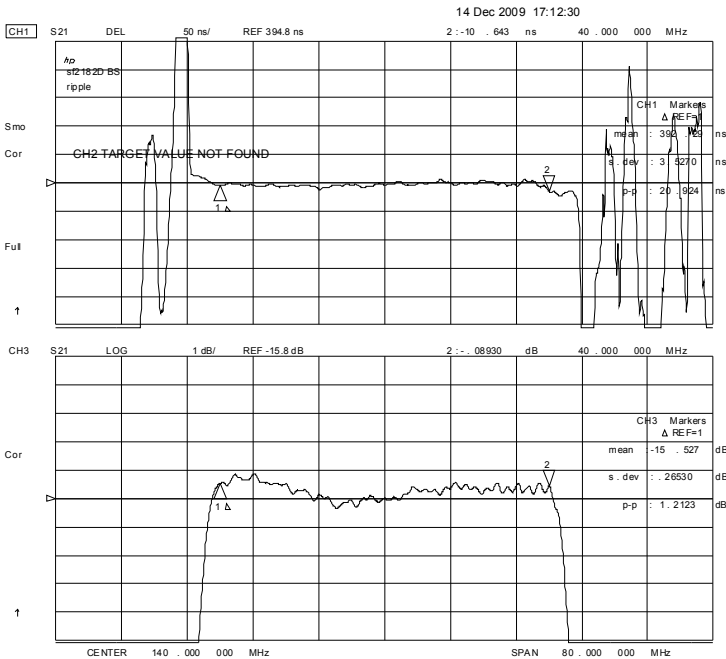
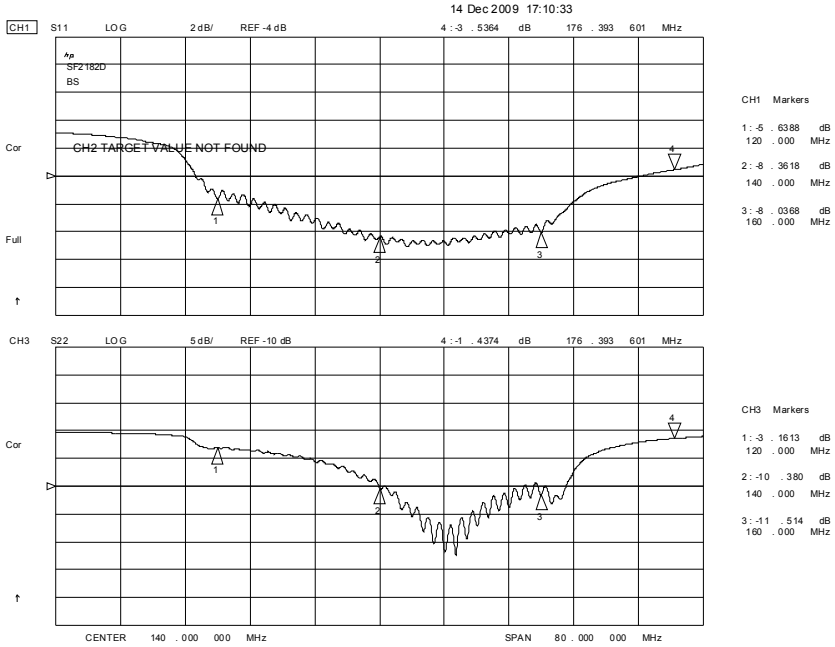


### SF2182D Single-ended Test Circuit

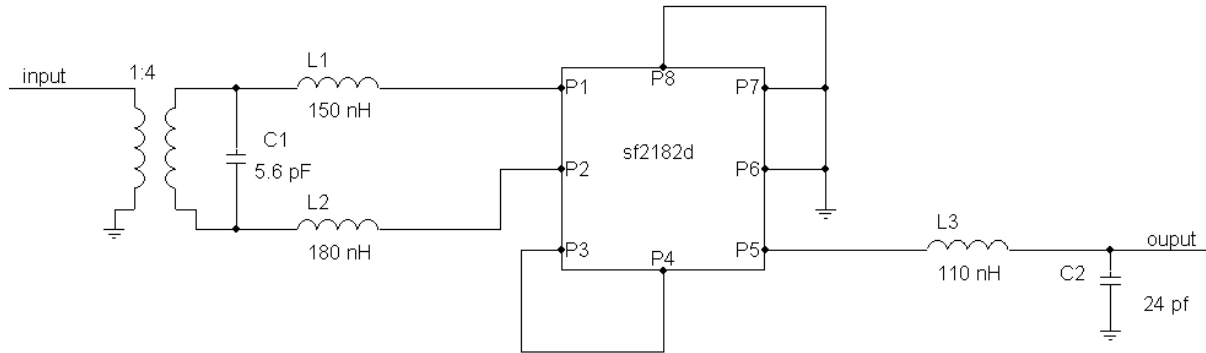


# SF2182D, Balanced Input Matching

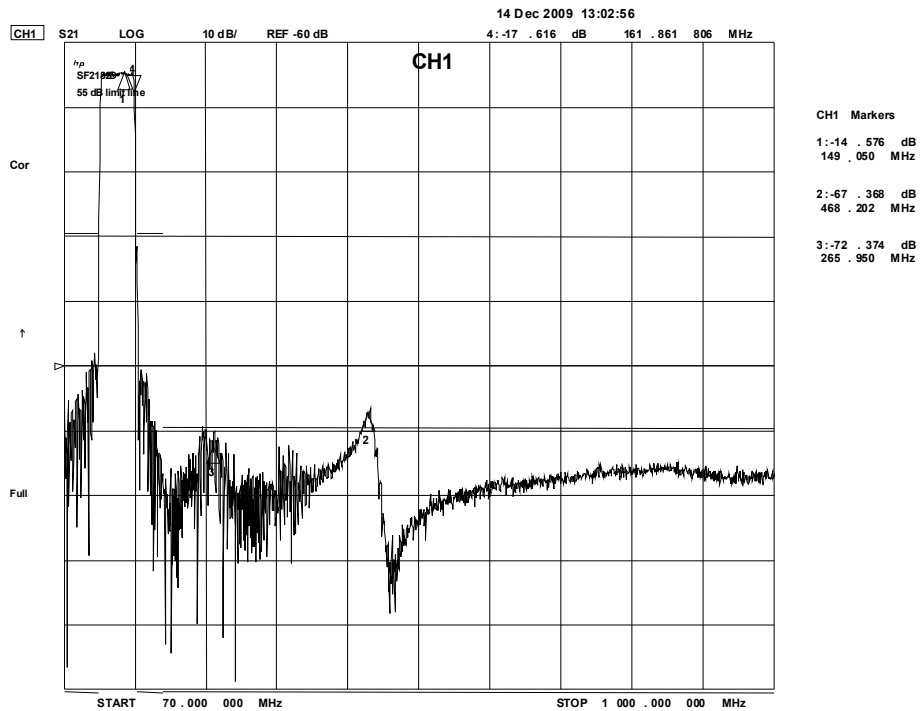
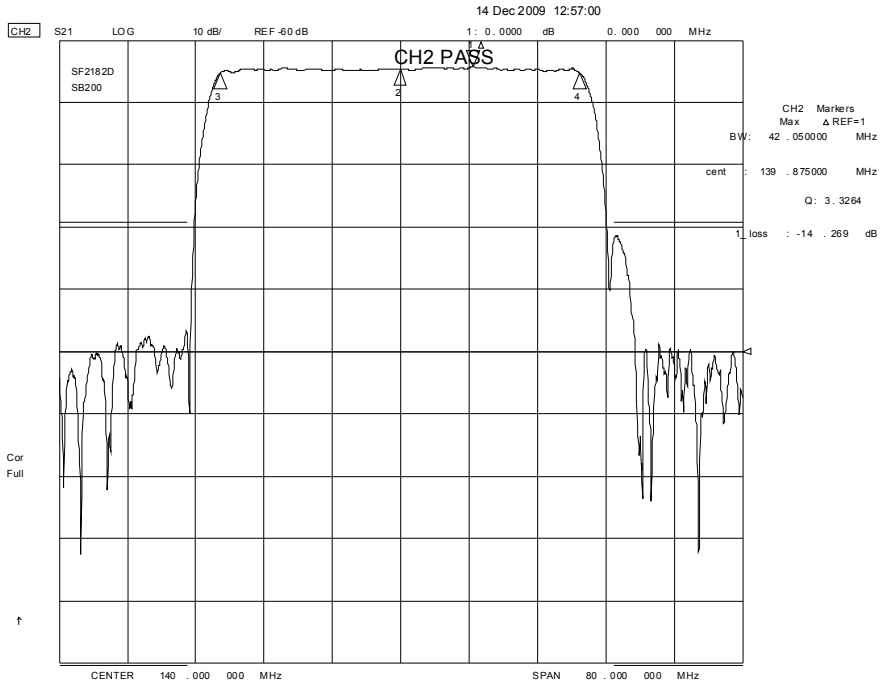


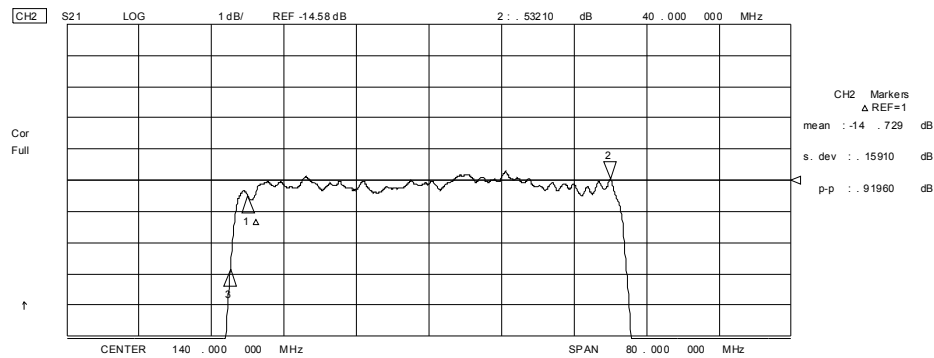
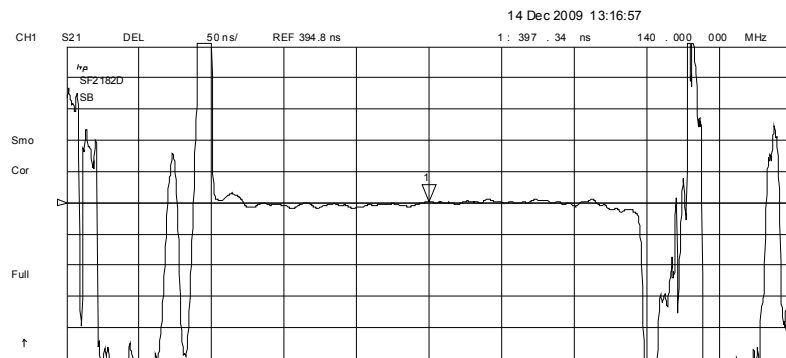
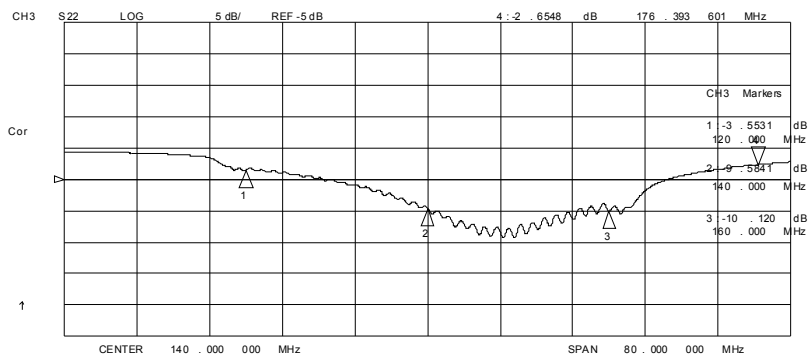
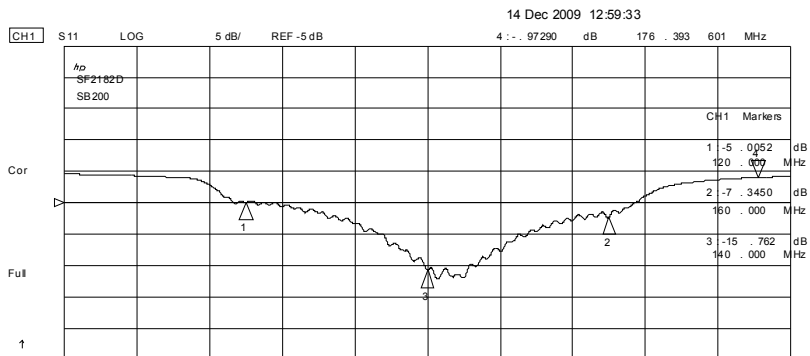


# SF2182D, Balanced Input Matching Network



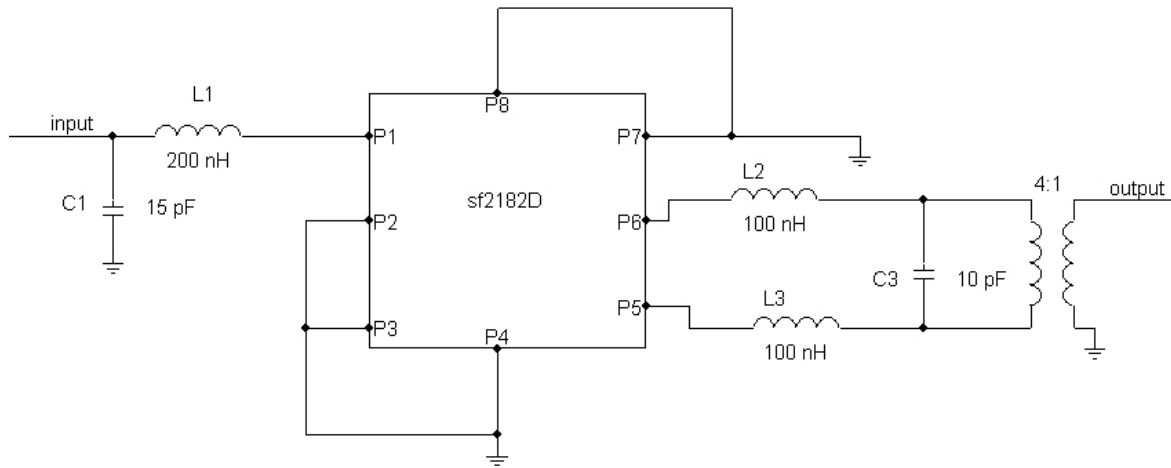
# SF2182D, Balanced Output Matching



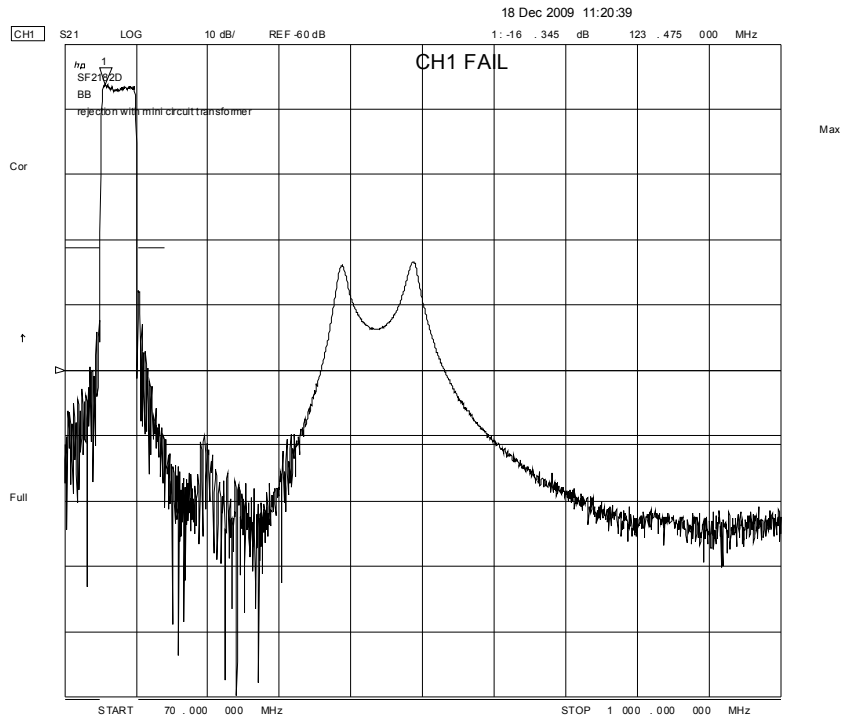
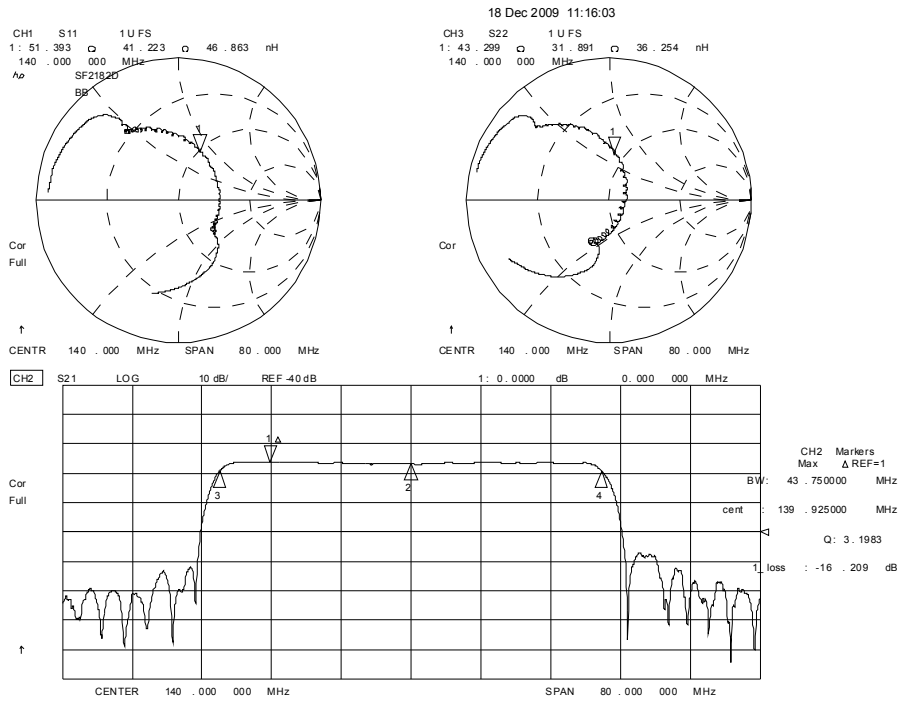




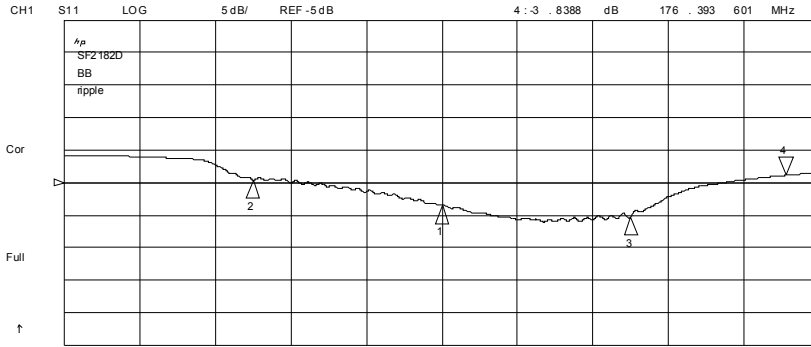
# SF2182D, Balanced Output Matching Network



# SF2182D, Balanced Input/Output Matching

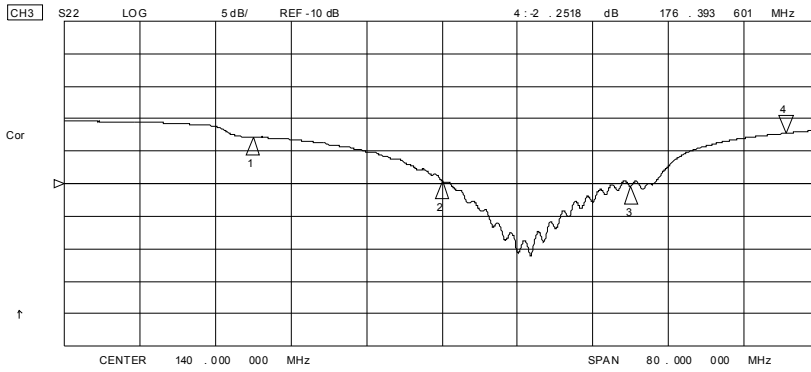


18 Dec 2009 11:17:07



CH1 Markers

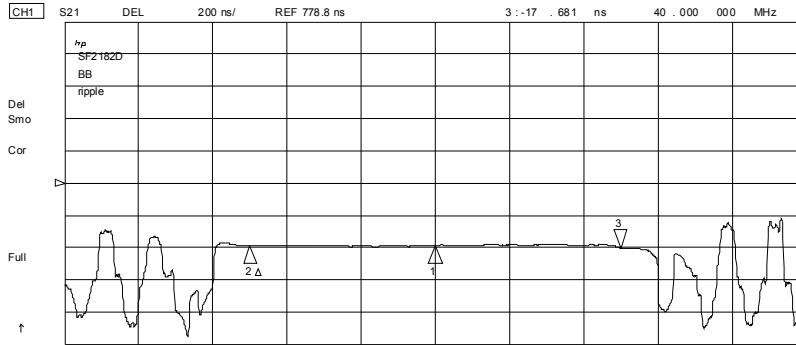
1	: 8	.4796	dB
	140	.000	MHz
2	: 4	.5697	dB
	120	.000	MHz
3	: 10	.201	dB
	160	.000	MHz



CH3 Markers

1	: 2	.8494	dB
	120	.000	MHz
2	: 9	.6174	dB
	140	.000	MHz
3	: 10	.349	dB
	160	.000	MHz

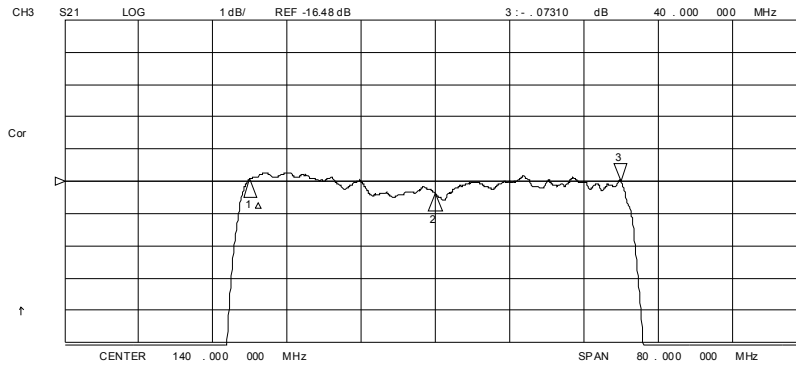
18 Dec 2009 11:19:05



CH1 Markers

Δ REF=2

mean	: 392 .85	ns
s. dev	: 3 .5980	ns
p-p	: 23 .270	ns

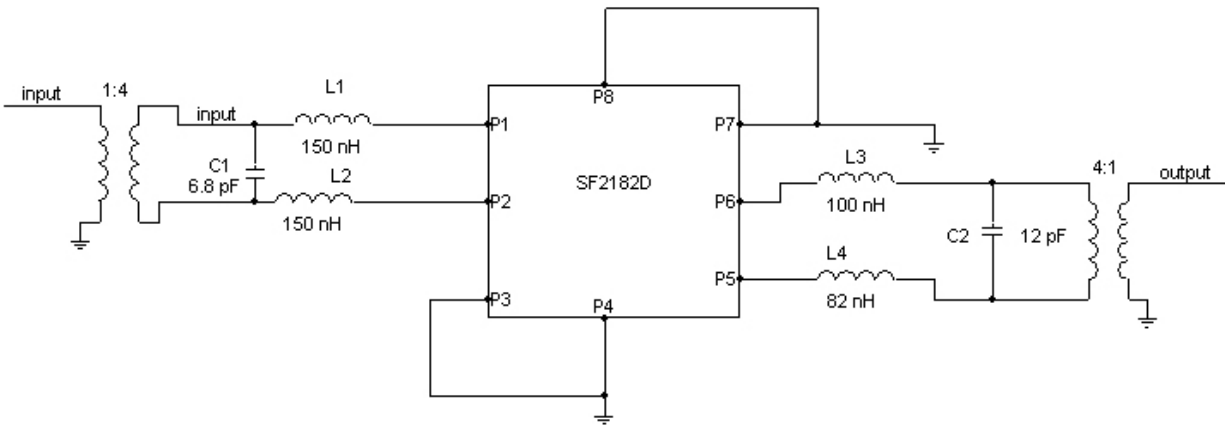


CH3 Markers

Δ REF=1

mean	: -16 .584	dB
s. dev	: .19950	dB
p-p	: .86590	dB

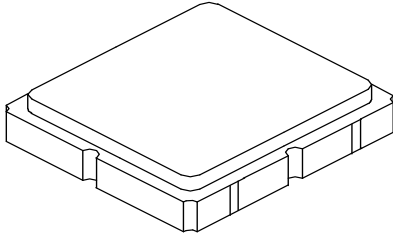
# SF2182D, Balanced Input/Output Matching Network



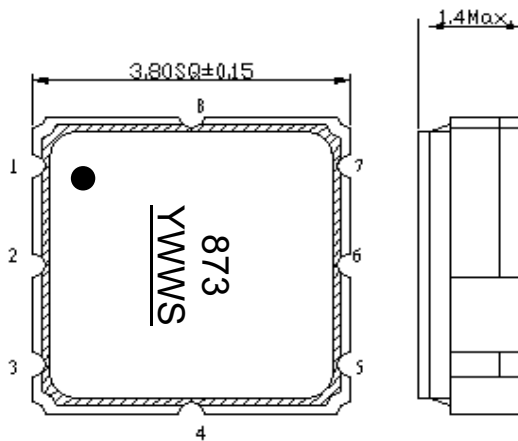
# SM3838-8 Case

## 8-Terminal Ceramic Surface-Mount Case

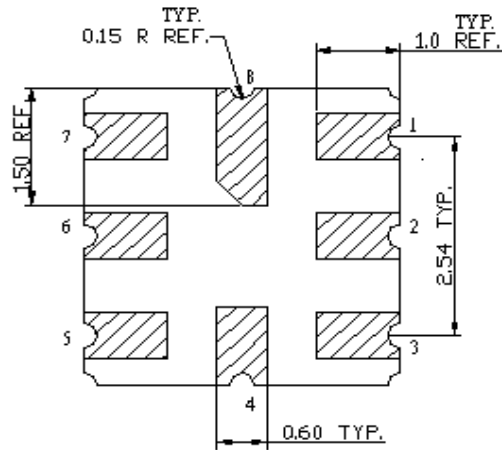
### 3.8 X 3.8 mm Nominal Footprint



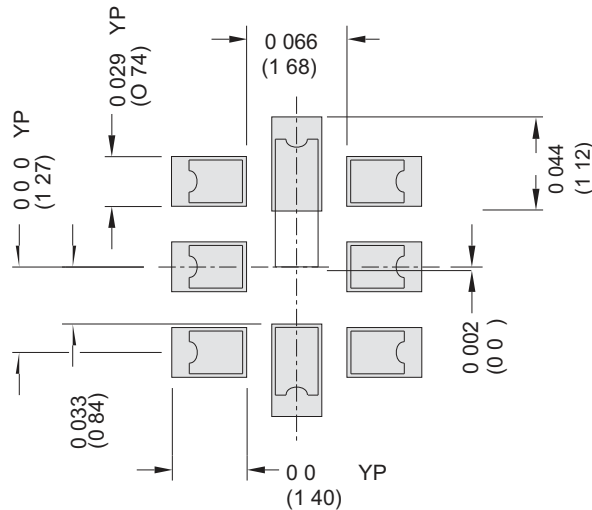
Top View



Bottom View

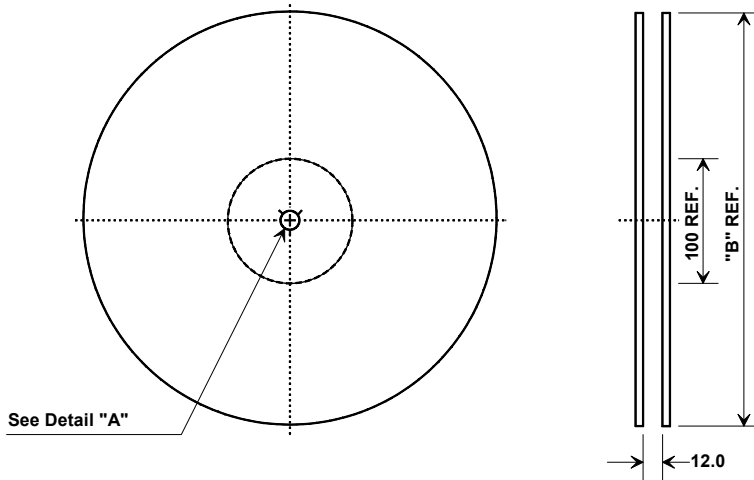


### PCB Footprint for 180 Degree Rotation Option

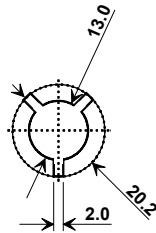


## Tape and Reel Specifications

Tape and Reel Standard per ANSI/EIA-481

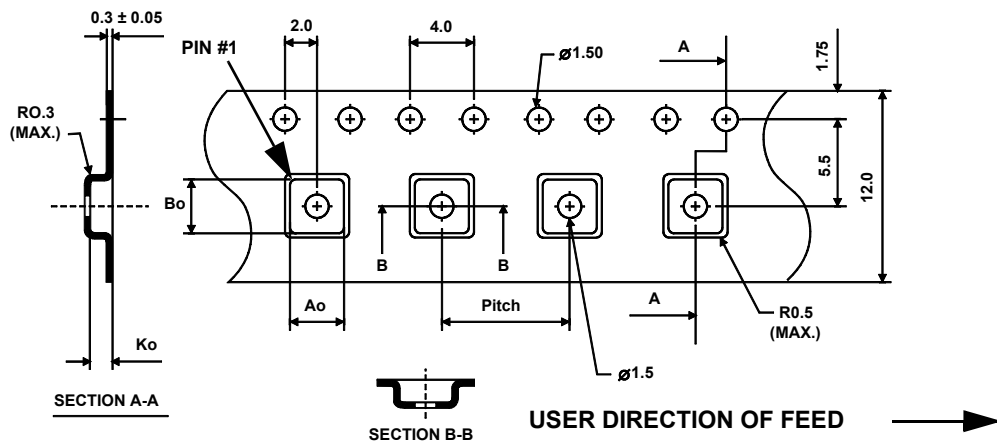


"B"		Quantity Per Reel
Nominal Size		
Inches	millimeters	
7	178	500
13	330	3000



### 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.

