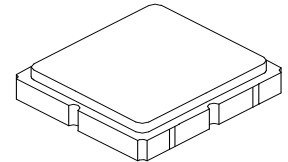


SF2182D

**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 _{P-P} |
| Passband Amplitude Ripple, Balanced Matching, 120 to 160 MHz | | | | 1.2 | 2.0 | dB _{P-P} |
| 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 _{P-P} |
| 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 | | | |

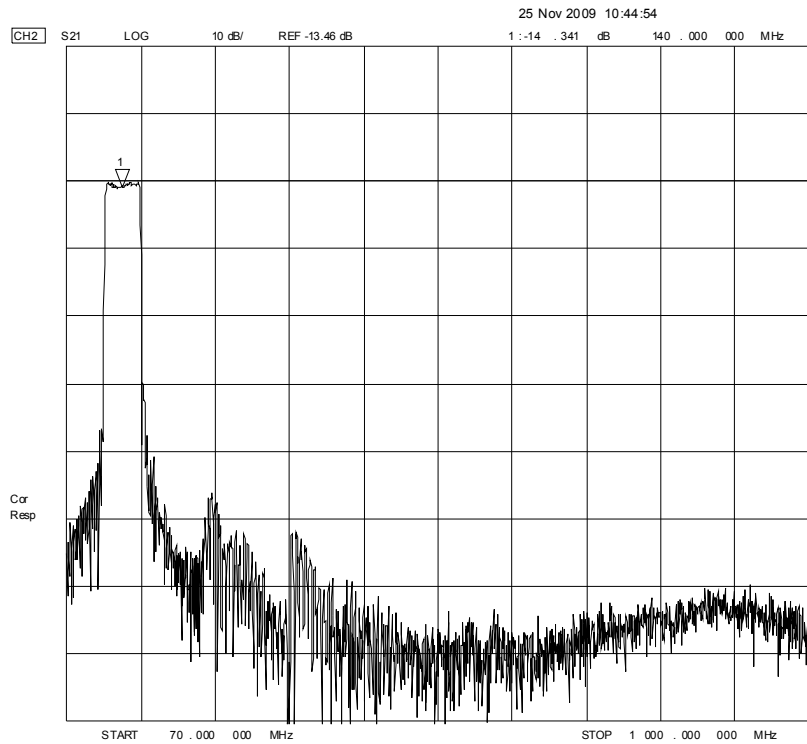
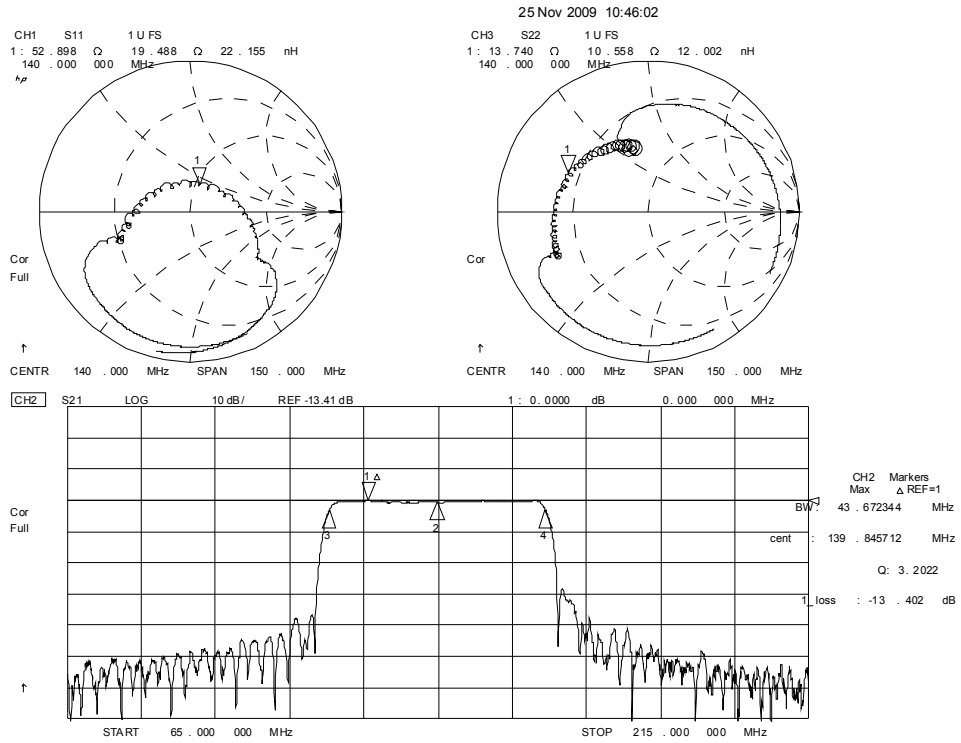


CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

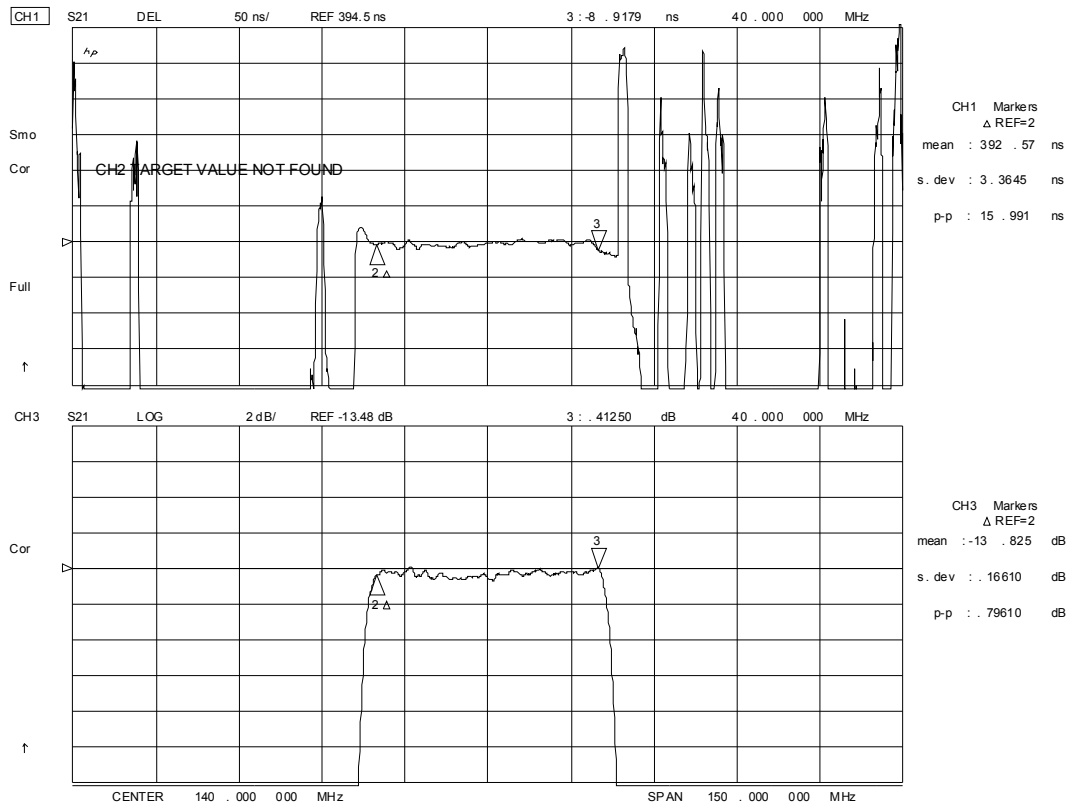
NOTES:

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.

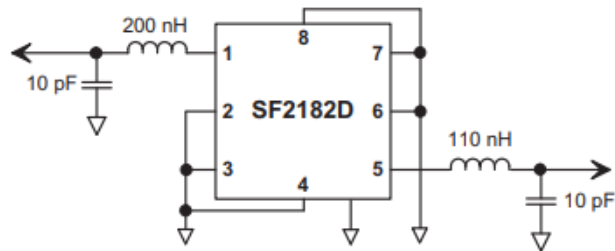
SF2182D, Single-ended Matching



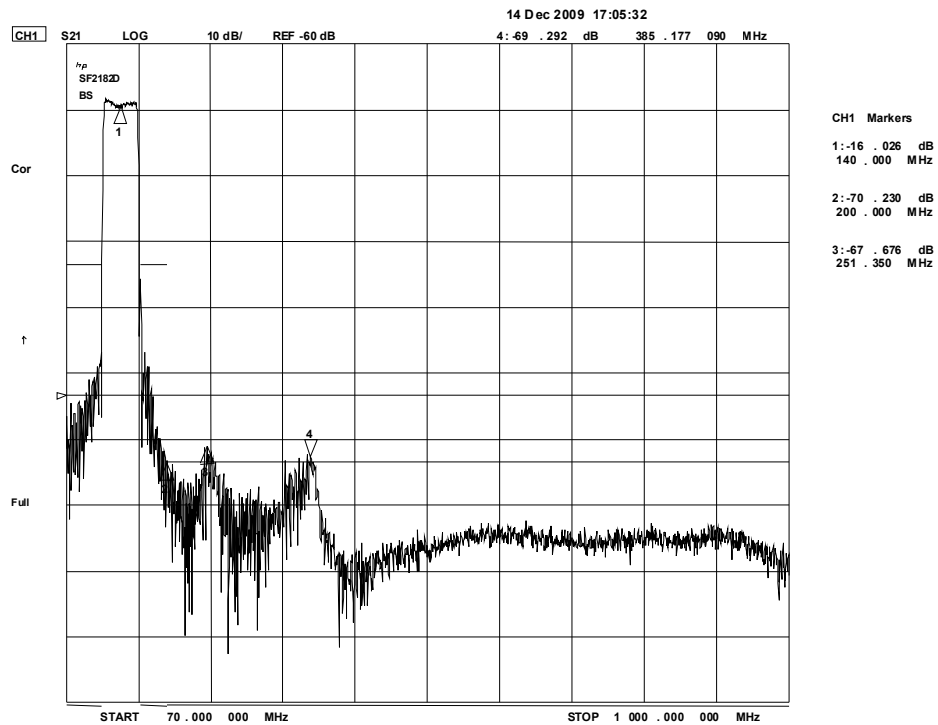
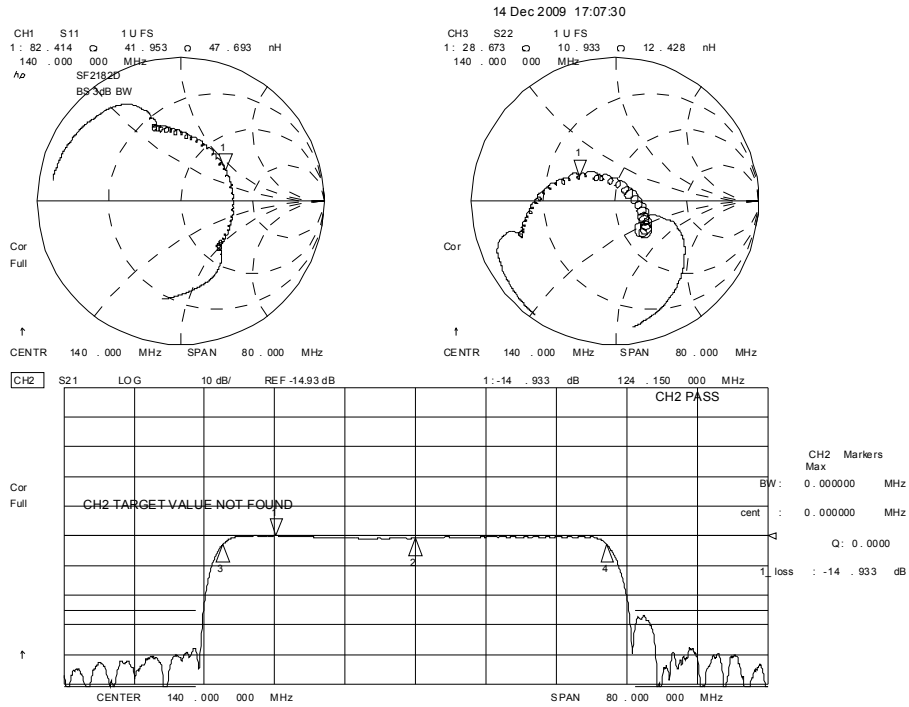
25 Nov 2009 10:48:26

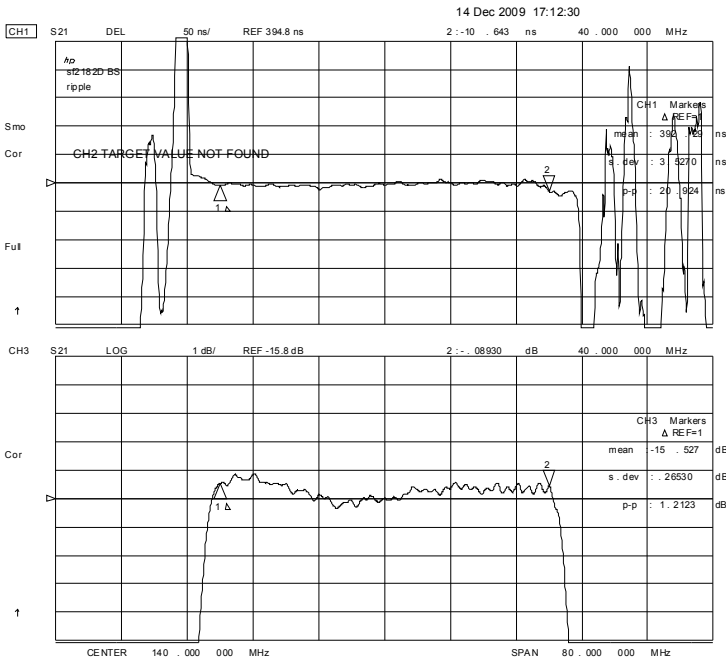
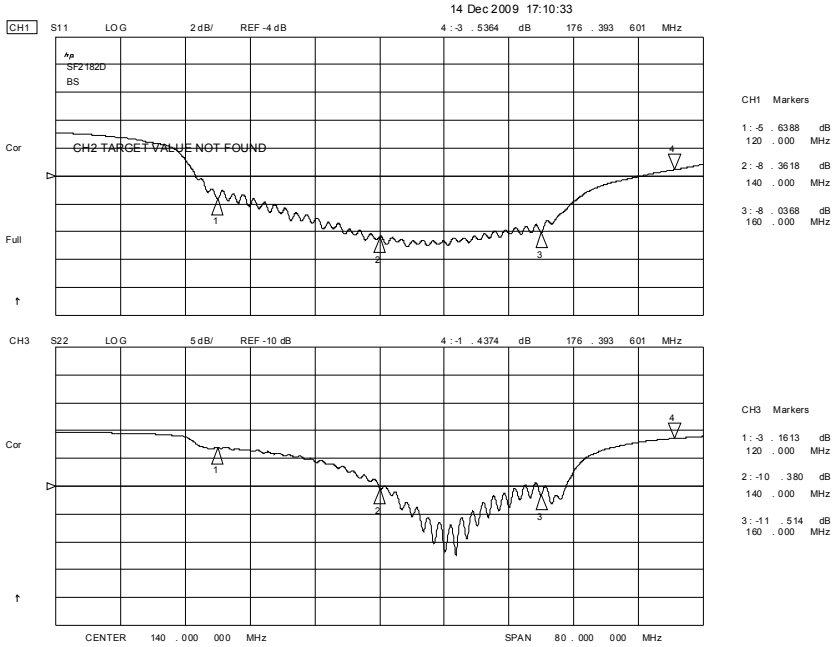


SF2182D Single-ended Test Circuit

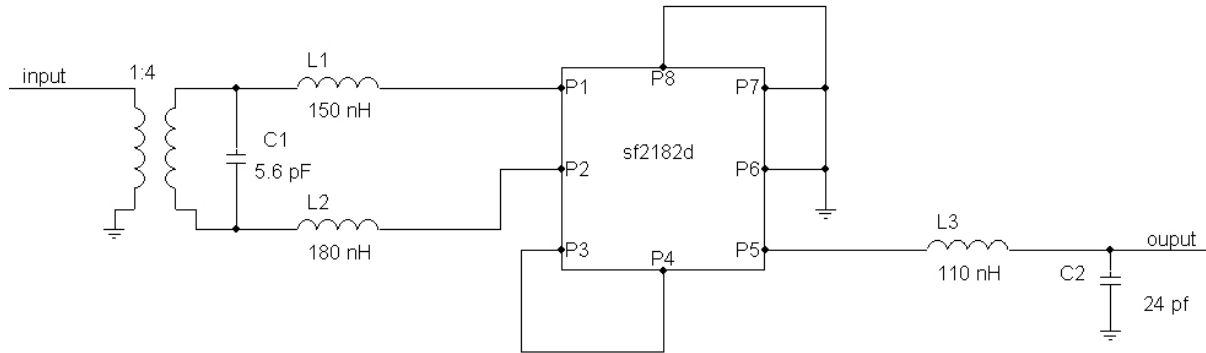


SF2182D, Balanced Input Matching

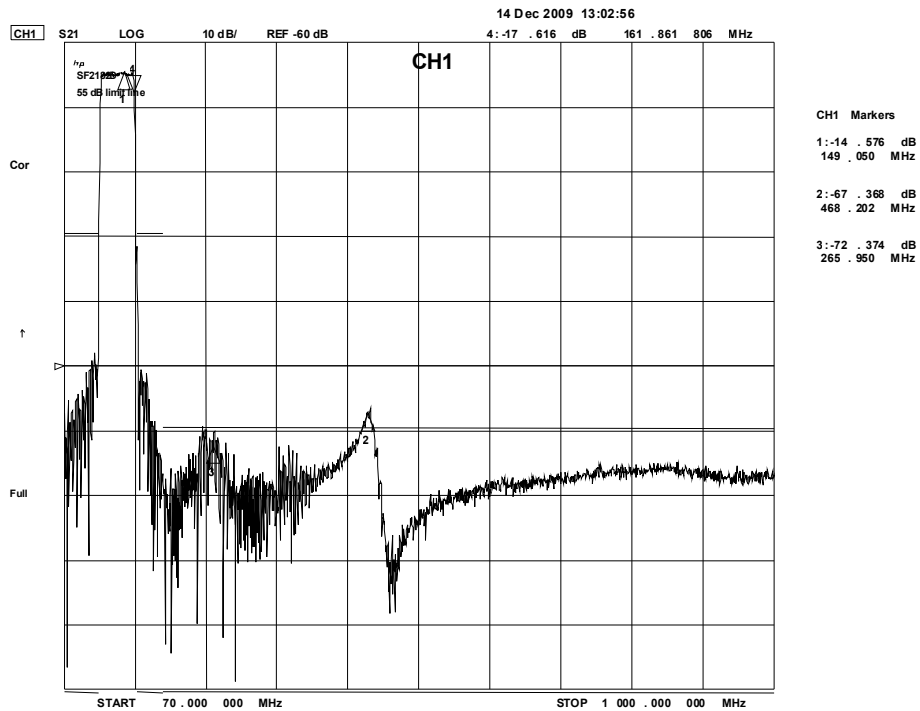
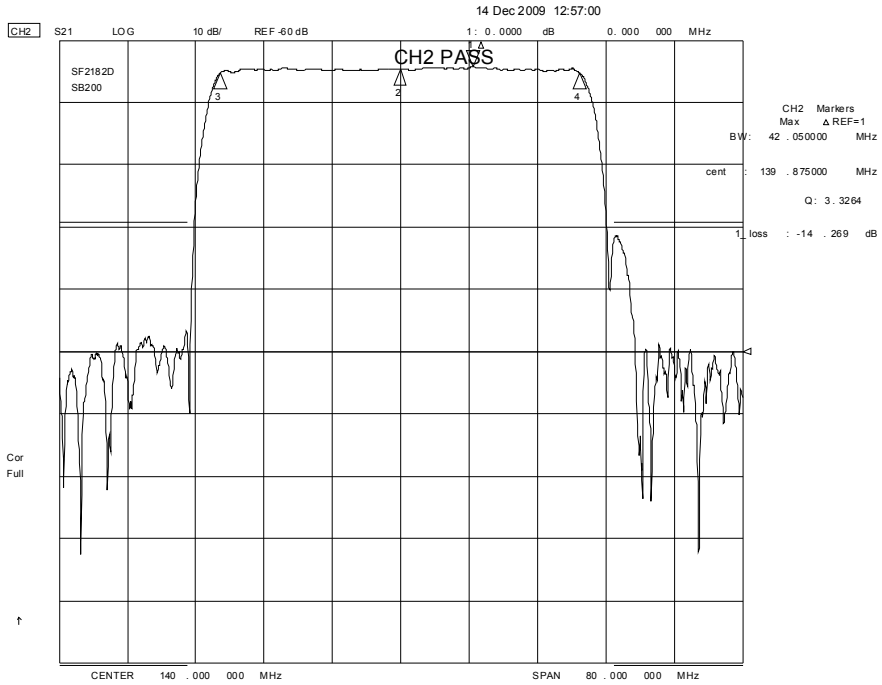


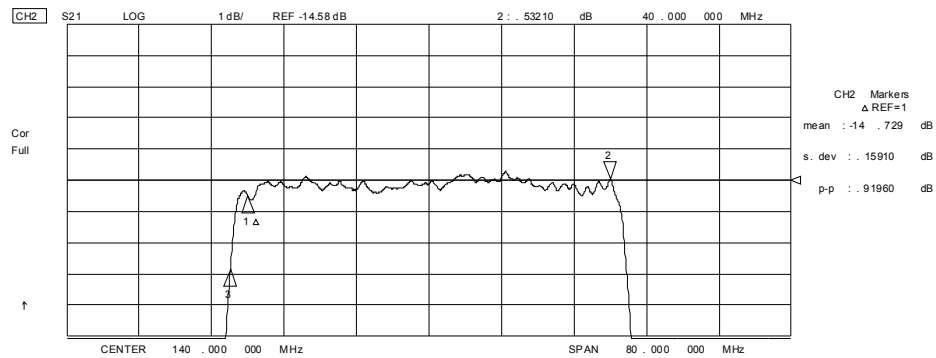
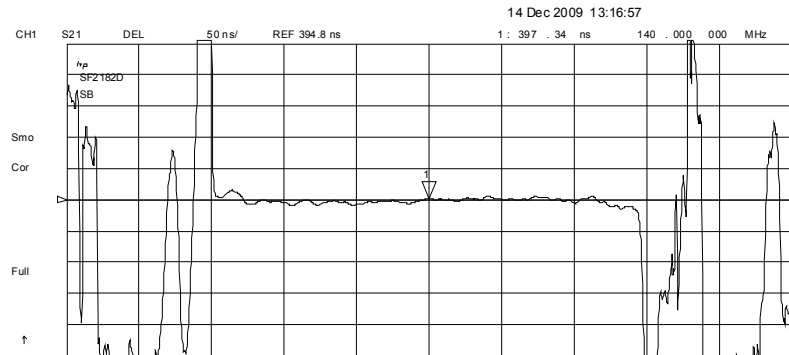
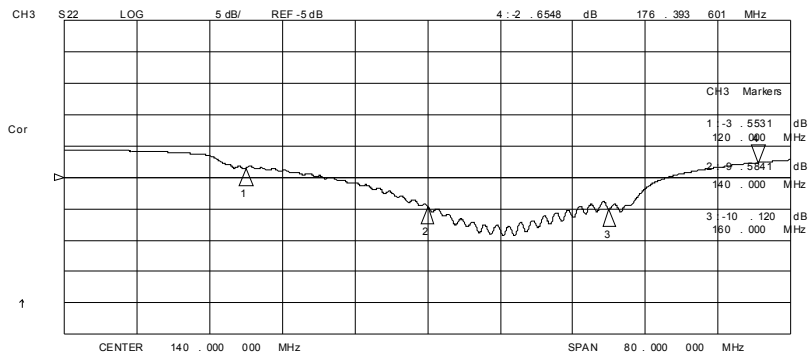
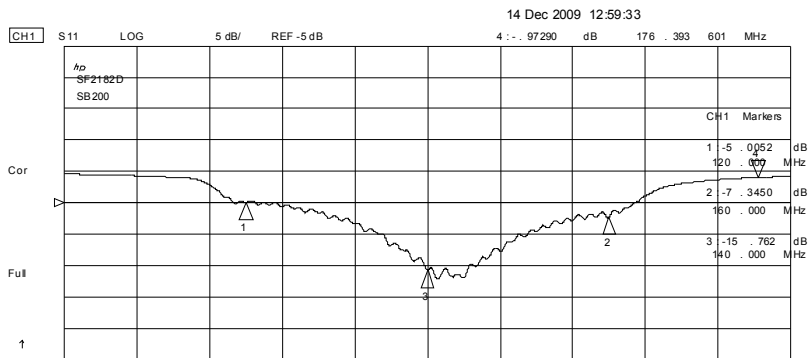


SF2182D, Balanced Input Matching Network

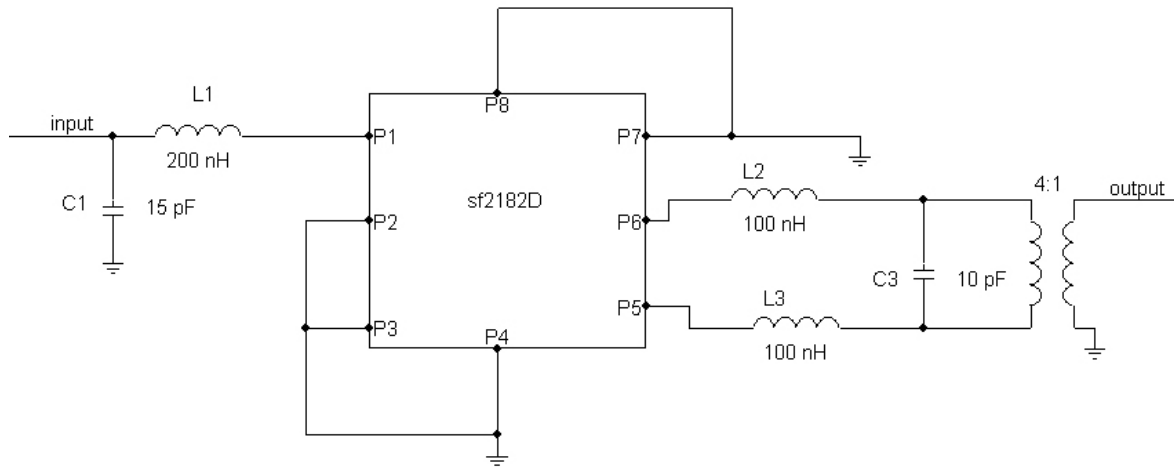


SF2182D, Balanced Output Matching

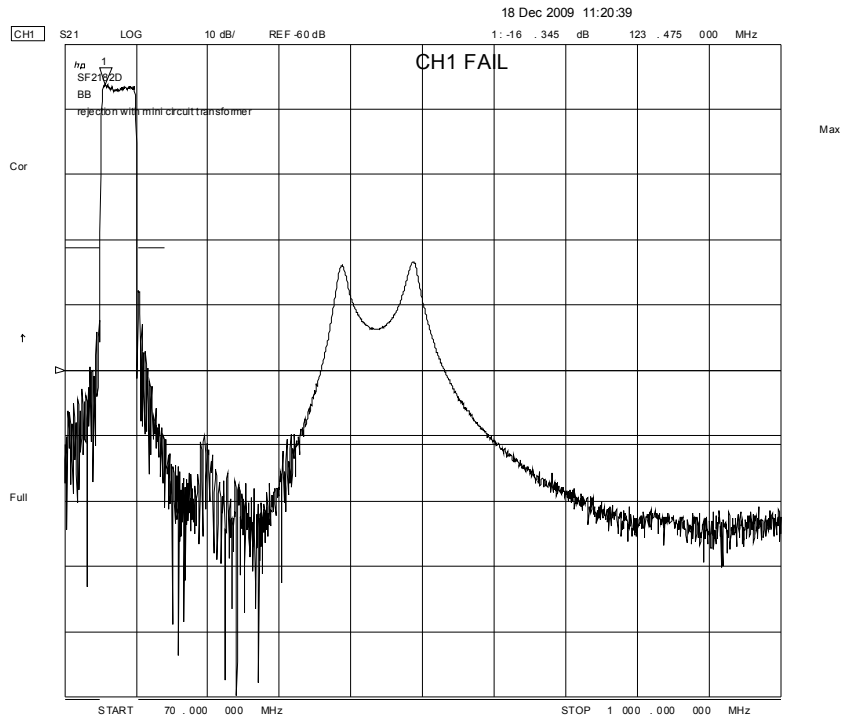
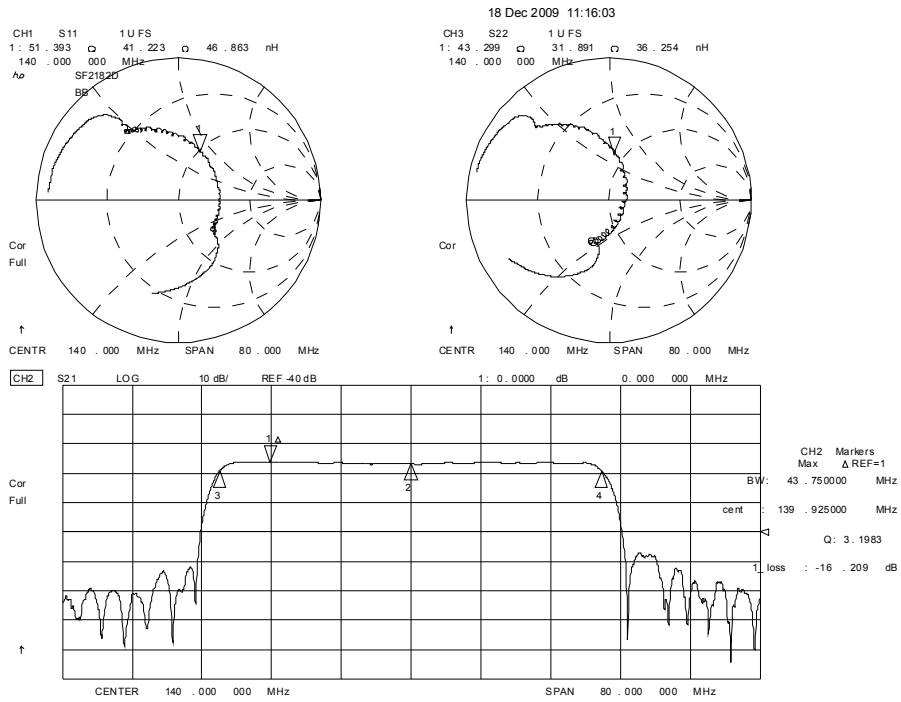




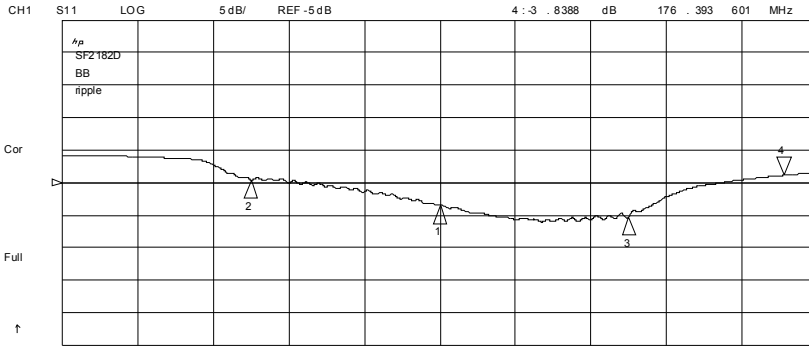
SF2182D, Balanced Output Matching Network



SF2182D, Balanced Input/Output Matching

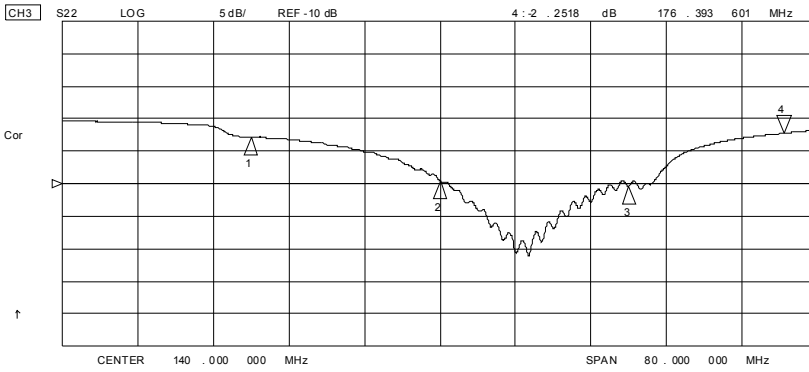


18 Dec 2009 11:17:07



CH1 Markers

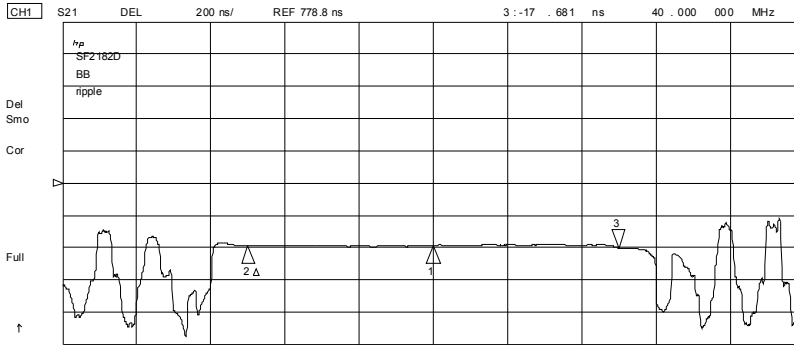
| | | |
|-----|---------|-----|
| 1 | -8.4796 | dB |
| 140 | .000 | MHz |
| 2 | -4.5697 | dB |
| 120 | .000 | MHz |
| 3 | -10.201 | dB |
| 160 | .000 | MHz |



CH3 Markers

| | | |
|-----|---------|-----|
| 1 | -2.8494 | dB |
| 120 | .000 | MHz |
| 2 | -9.6174 | dB |
| 140 | .000 | MHz |
| 3 | -10.349 | dB |
| 160 | .000 | MHz |

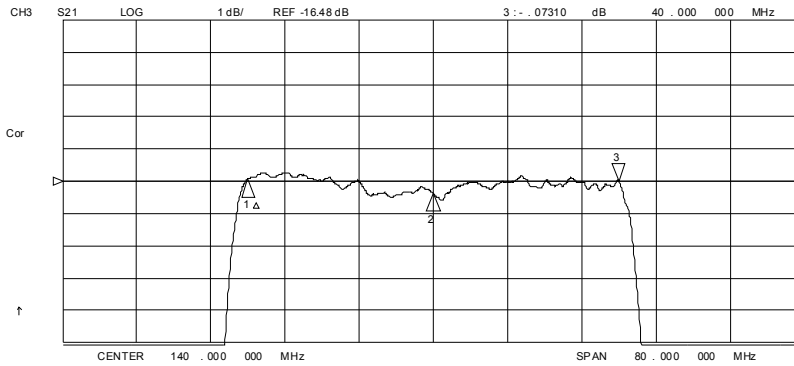
18 Dec 2009 11:19:05



CH1 Markers

Δ REF=2

| | | |
|--------|----------|----|
| mean | : 392.85 | ns |
| s. dev | : 3.5980 | ns |
| p-p | : 23.270 | ns |

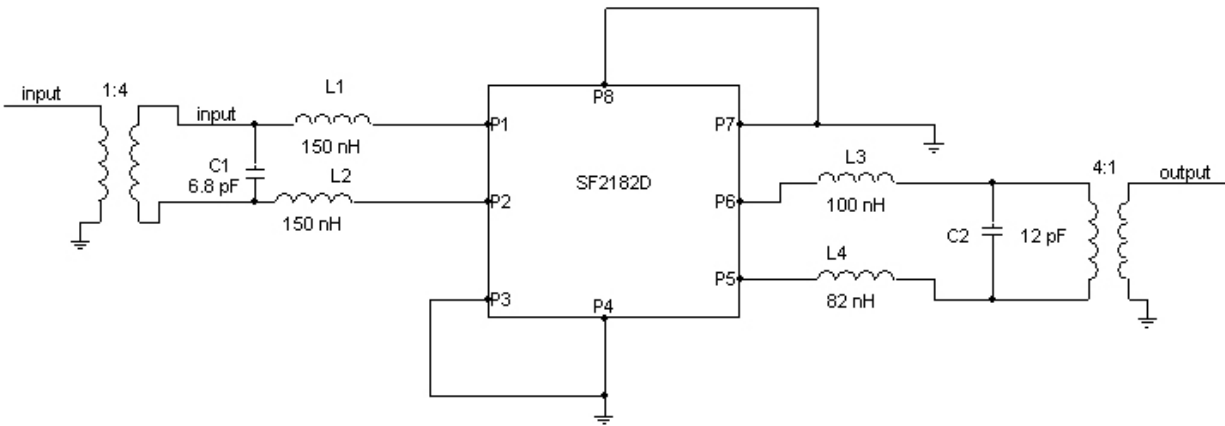


CH3 Markers

Δ REF=1

| | | |
|--------|-----------|----|
| mean | : -16.584 | dB |
| s. dev | : .19950 | dB |
| p-p | : .86590 | dB |

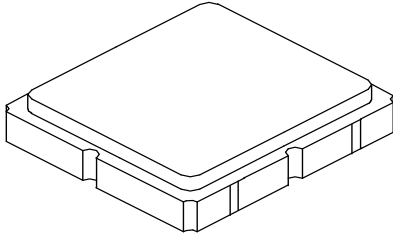
SF2182D, Balanced Input/Output Matching Network



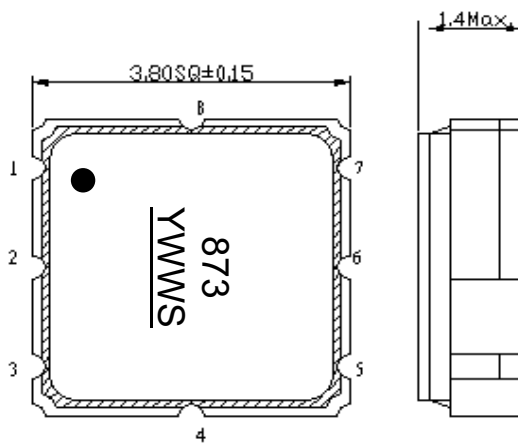
SM3838-8 Case

8-Terminal Ceramic Surface-Mount Case

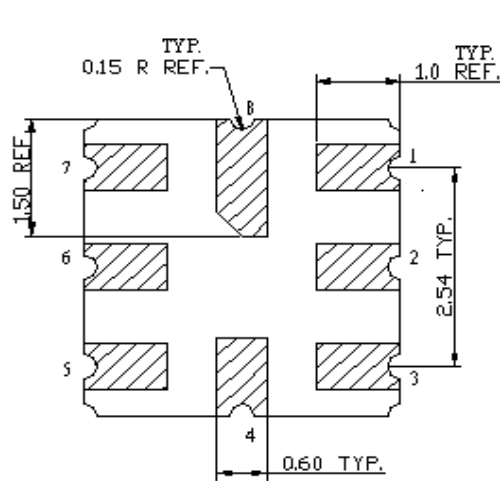
3.8 X 3.8 mm Nominal Footprint



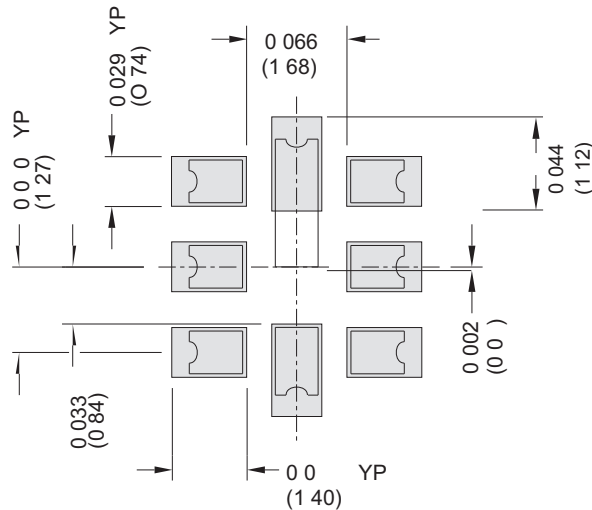
Top View



Bottom View



PCB Footprint for 180 Degree Rotation Option



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.

