



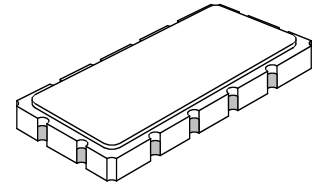
AEC-Q200
 This component was always
 RoHS compliant from the first
 date of manufacture.

- *Excellent Size-to-Performance Ratio*
- *Hermetic 13.3 X 6.5 mm Surface-Mount Case*
- *Complies with Directive 2002/95/EC (RoHS)*



SF2140A-1

**140.0 MHz
 SAW Filter**



SMP-53

Absolute Maximum Ratings

Rating	Value	Units
Input Power Level	+10	dBm
Storage Temperature Range	-40 to +85	°C
Operating Temperature Range	-30 to +80	°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			140.0		MHz
Maximum Insertion Loss at f_C	IL			10.3	11.0	dB
1 dB Bandwidth			18.4	20.8		MHz
3 dB Bandwidth			19.6	21.4		MHz
35 dB Bandwidth				25.2	26.4	MHz
Passband Ripple, 130.8 to 149.2 MHz				0.8	1.0	dB
Group Delay Ripple, 130.8 to 149.2 MHz				115	160	ns
Absolute Group Delay				1.0		µs
Input VSWR, 130.8 to 149.2 MHz				1.7	2.8	dB
Output VSWR, 130.8 to 149.2 MHz				1.8	2.3	dB
Temperature Coefficient						ppm/°C
Attenuation Referenced to Insertion Loss at f_C						dB
10 to 90 MHz			35	49		
90 to 120 MHz			40	47		
120 to 126.8 MHz			35	50		
153.2 to 160 MHz			35	45		
160 to 190 MHz			40	53		
190 to 800 MHz			35	62		
Source/Load Impedance				50		ohms

Case Style	SMP-53 13.3 X 6.5 mm Nominal Footprint
Lid Symbolization (YY=year, WW=week)	RFM, SF2140A-1, YYWWS

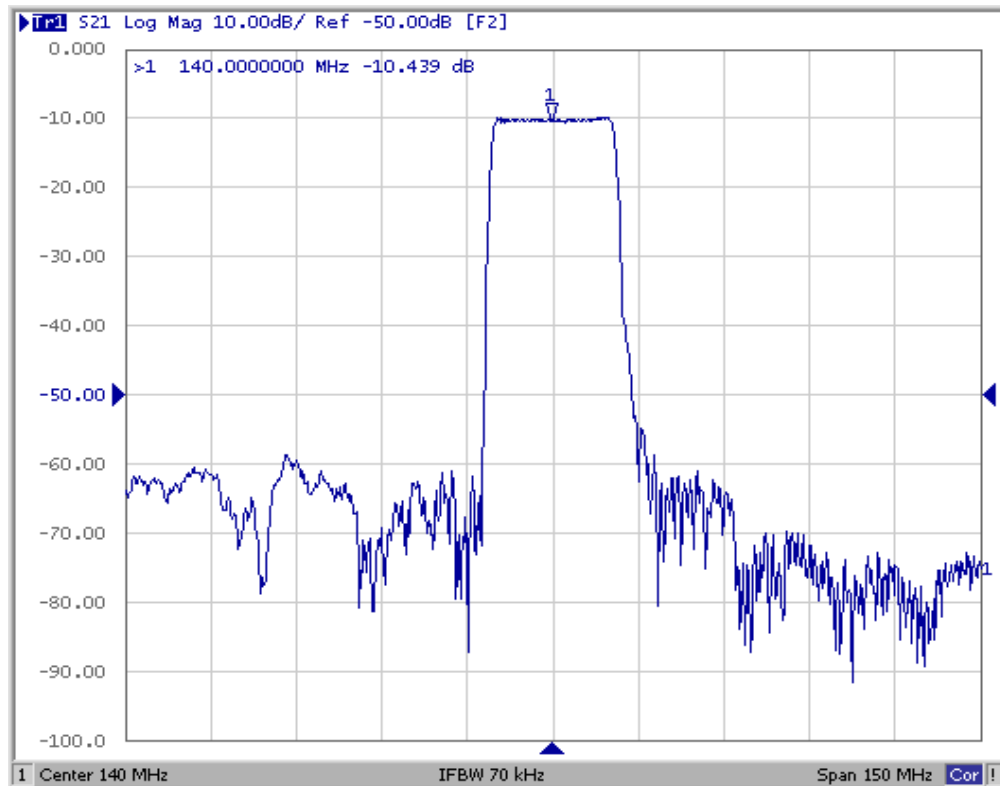


CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

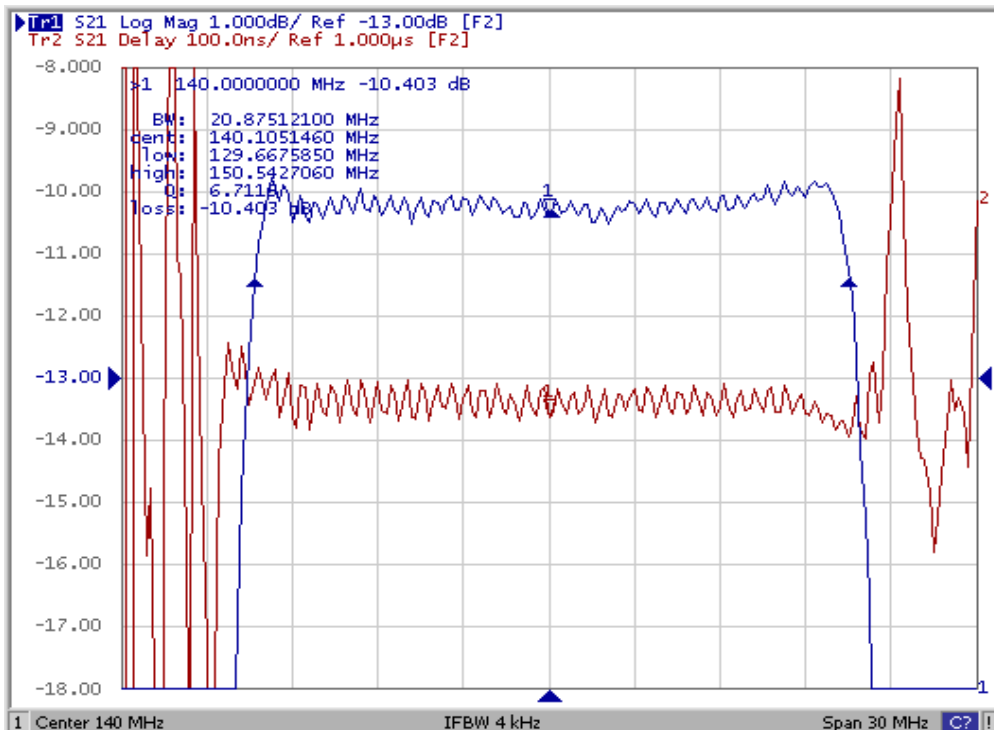
NOTES:

1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.

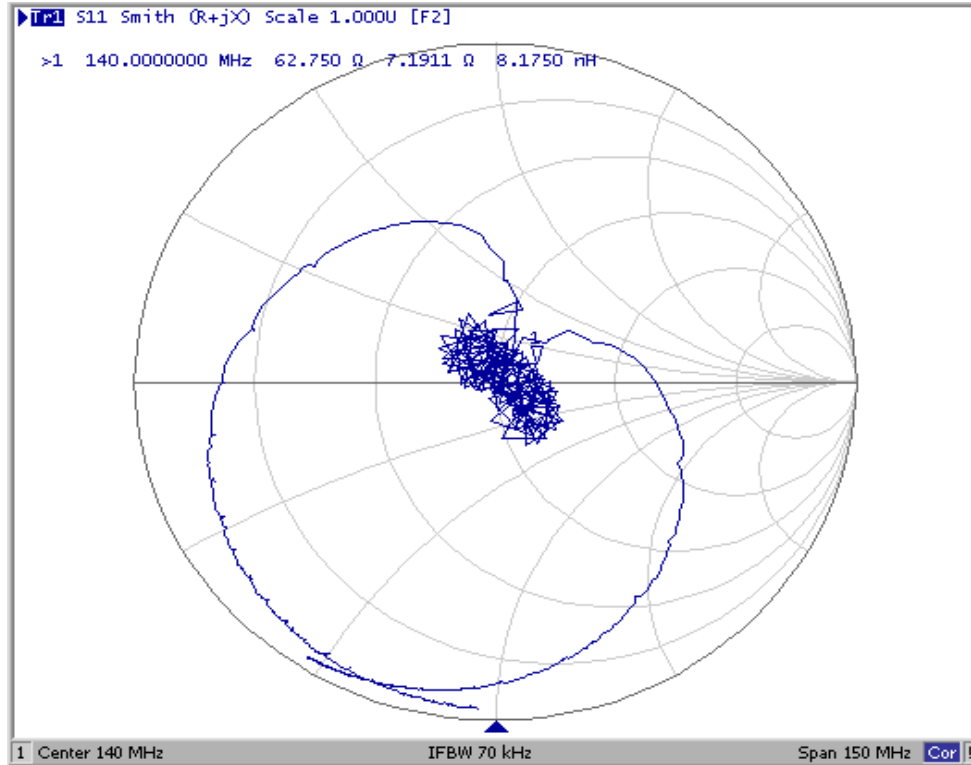
SF2140A-1 S₂₁ Amplitude Response



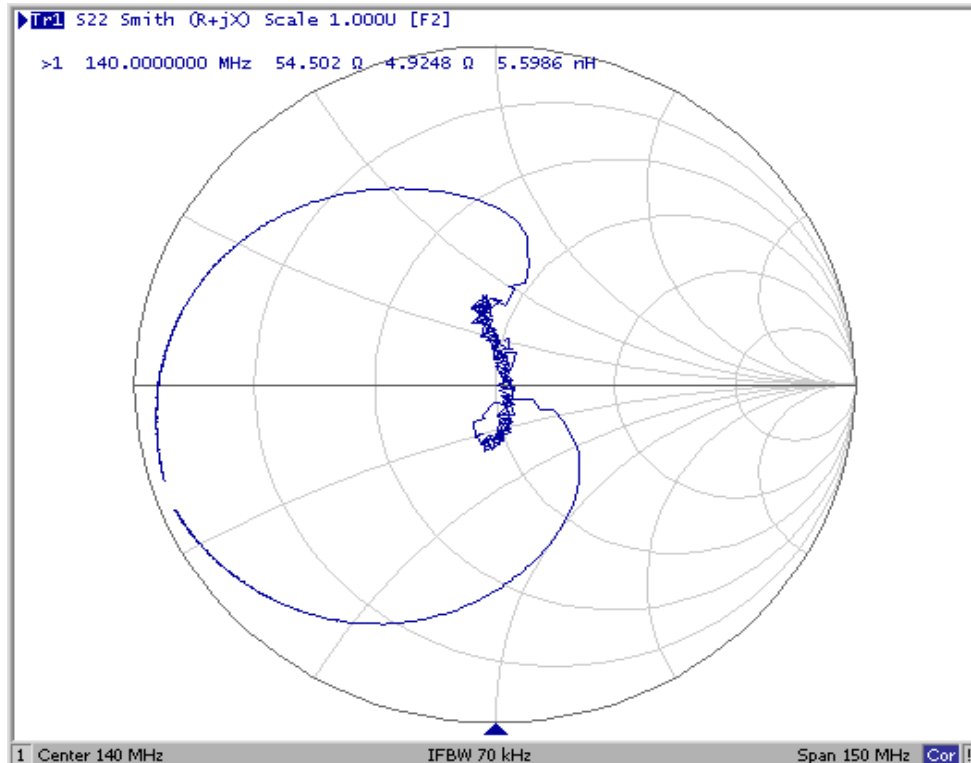
SF2140A-1 Pass-band Amplitude and Group Delay Ripple



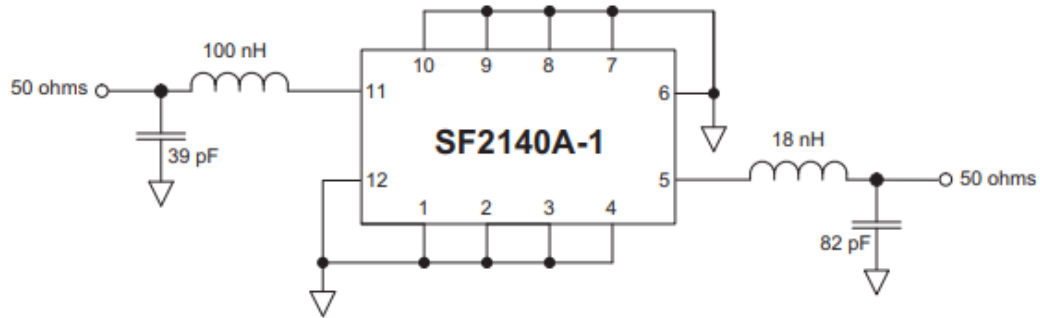
SF2140A-1 S_{11} Impedance Plot through Matching Network



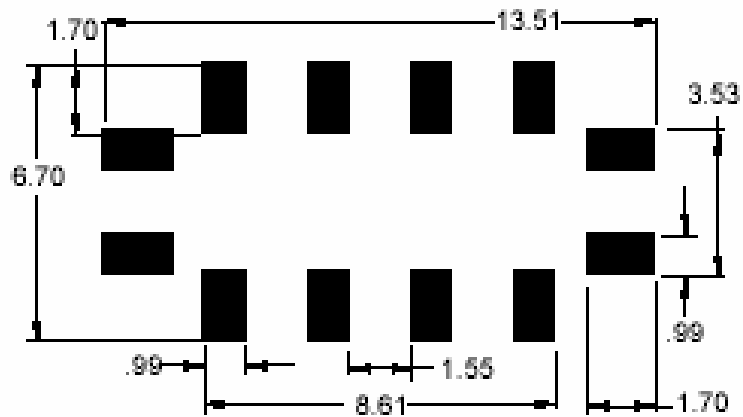
SF2140A-1 S_{22} Impedance Plot through Matching Network



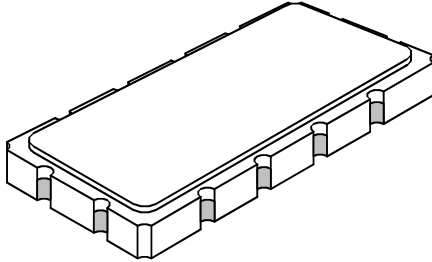
SF2140A-1 50 ohm Matching Network



SF2140A-1 Circuit Board Pad Layout



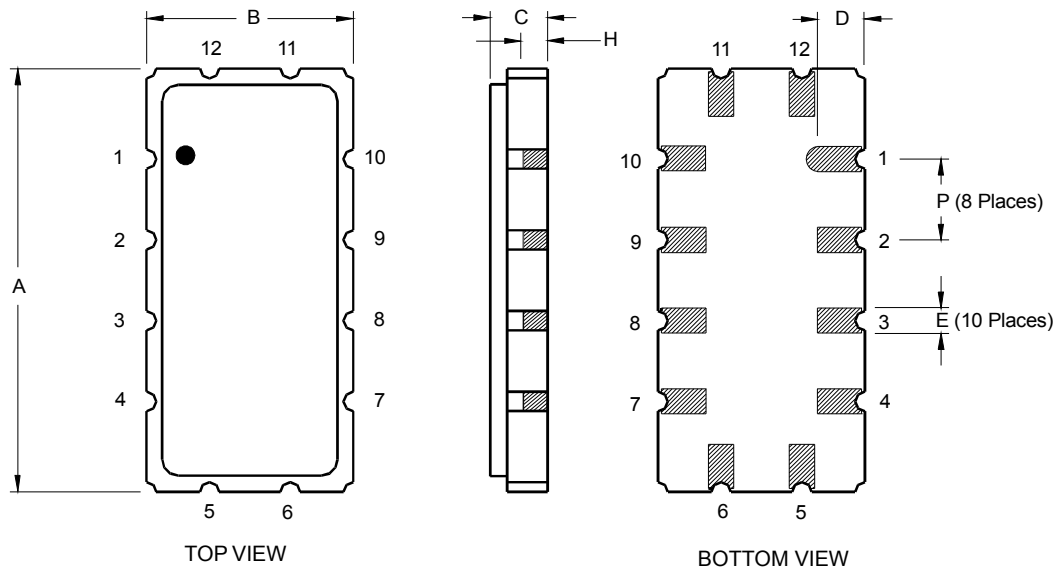
12-Terminal Ceramic Surface-Mount Case 13.3 x 6.5 mm Nominal Footprint



Case Dimensions						
Dimension	mm			Inches		
	Min	Nom	Max	Min	Nom	Max
A	13.08	13.31	13.60	0.515	0.524	0.535
B	6.27	6.50	6.80	0.247	0.256	0.268
C		1.91	2.00		0.075	0.079
D		1.50			0.059	
E		0.79			0.031	
H		1.0			0.039	
P		2.54			0.100	

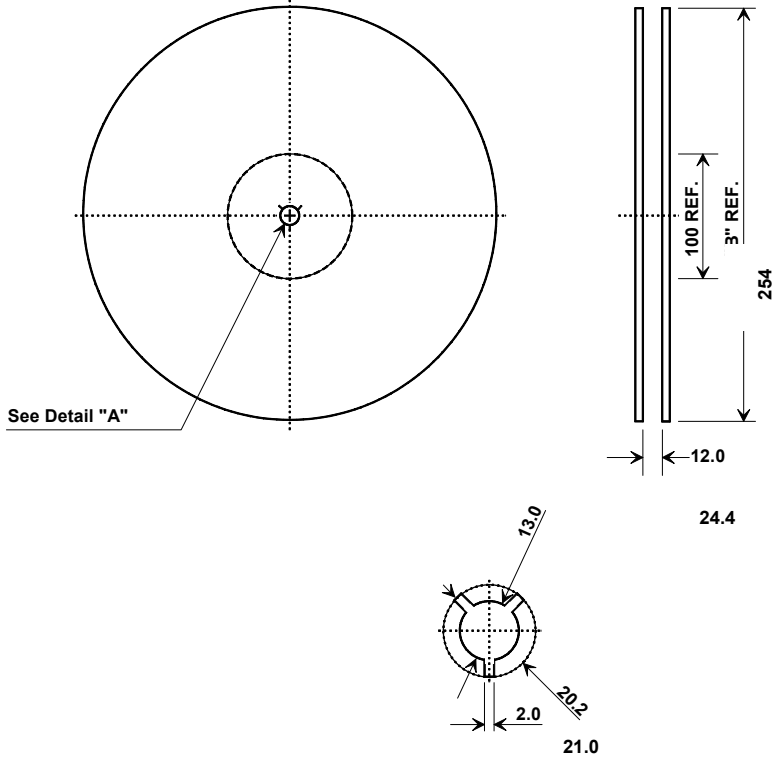
Electrical Connections		
Connection		Terminals
Port 1	RF Input	11
	RF Input Ground	12
Port 2	RF Output	5
	RF Output Ground	6
Ground		All others

Materials	
Solder Pad Plating	0.3 to 1.0 μm Gold over 1.27 to 8.89 μm Nickel
Lid Plating	2.0 to 3.0 μm Nickel
Body	Al_2O_3 Ceramic
Pb Free	



Tape and Reel Specifications

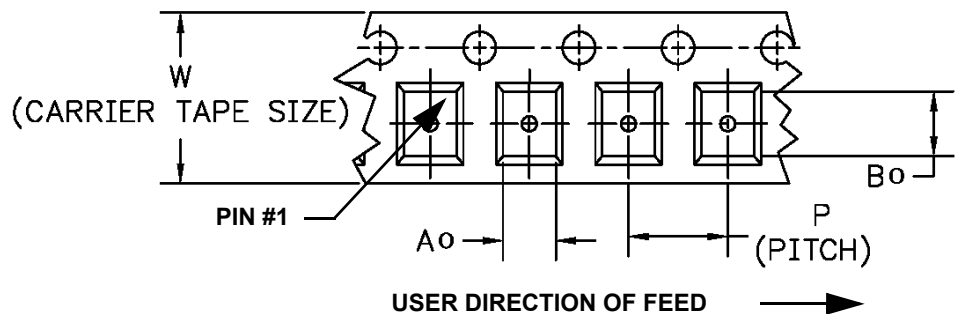
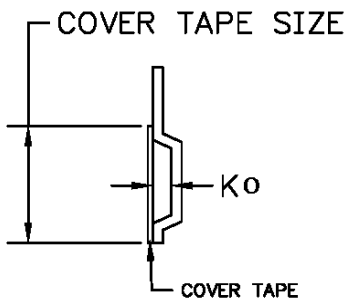
Tape and Reel Standard per ANSI/EIA-481



Quantity Per Reel	
100	Min
1000	Max

COMPONENT ORIENTATION and DIMENSIONS

Carrier Tape Dimensions	
Ao	7.0 mm
Bo	13.8 mm
Ko	2.0 mm
Pitch	12.0 mm
W	24.0 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.

