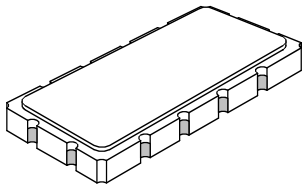
RFMi
A BRAND OF AKOUSTIS

RoHS compliant

SF2140A-1

140.0 MHz SAW Filter

- ***Excellent Size-to-Performance Ratio***
- ***Hermetic 13.3 X 6.5 mm Surface-Mount Case***
- ***Complies with Directive 2002/95/EC (RoHS)***
- ***Moisture Sensitivity Level: 1***



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						
10 to 90 MHz			35	49		dB
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, S = Shift, ## = Sequence Code)	RFM, SF2140A-1, YYWWS##

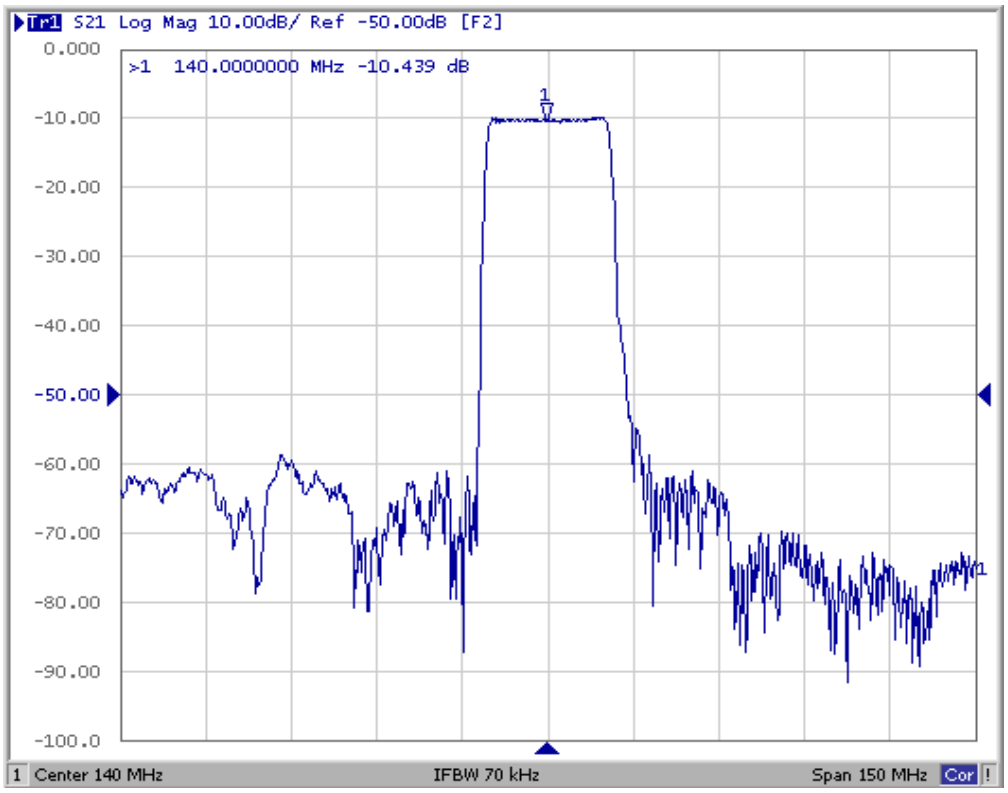
CAUTION: Electrostatic Sensitive Device. Observe precautions for handling.

NOTES:

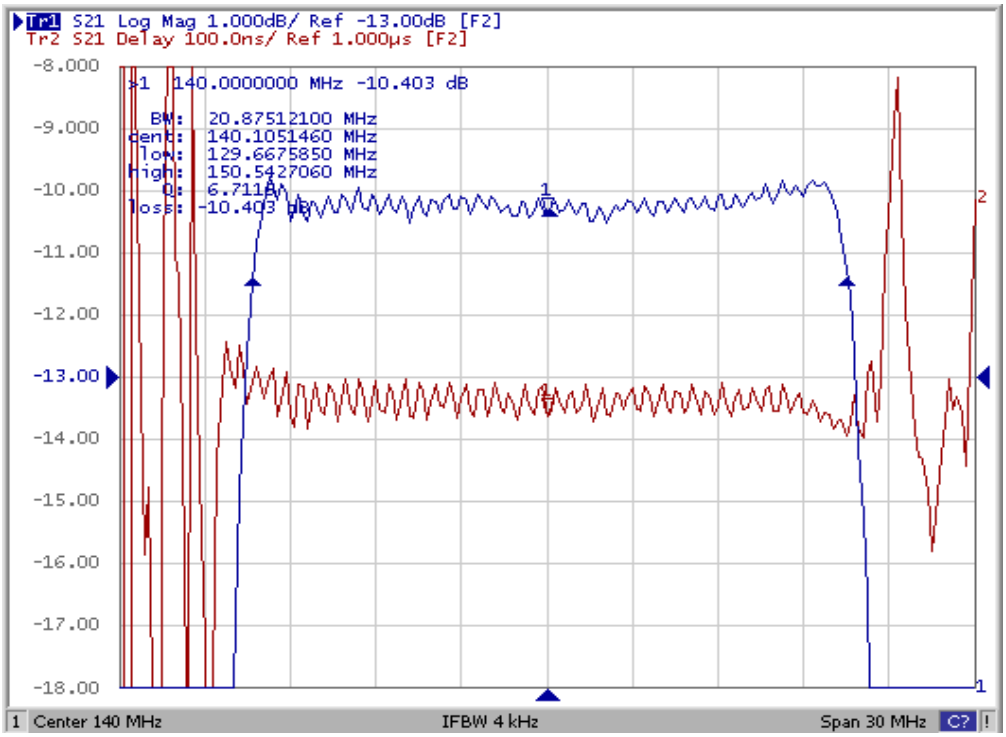
1. The design, manufacturing process, and specifications of this device are subject to change.
2. US or International patents may apply.
3. RoHS compliant from the first date of manufacture.

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SF2140A-1 S_{21} Amplitude Response

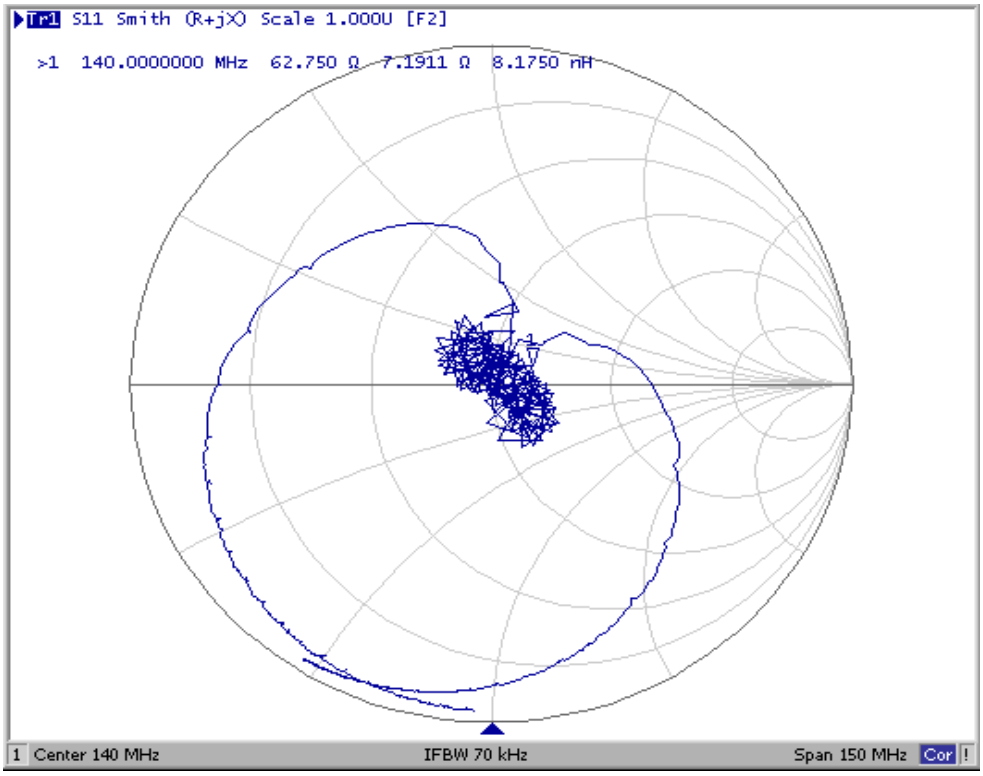


SF2140A-1 Pass-band Amplitude and Group Delay Ripple

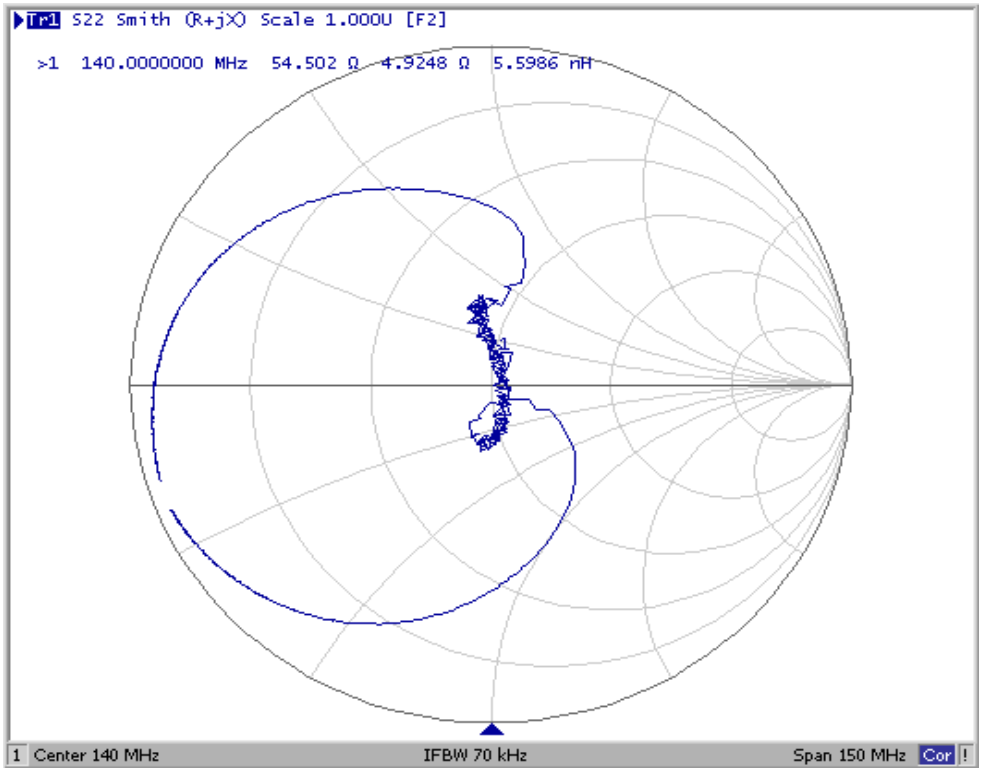


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SF2140A-1 S_{11} Impedance Plot through Matching Network

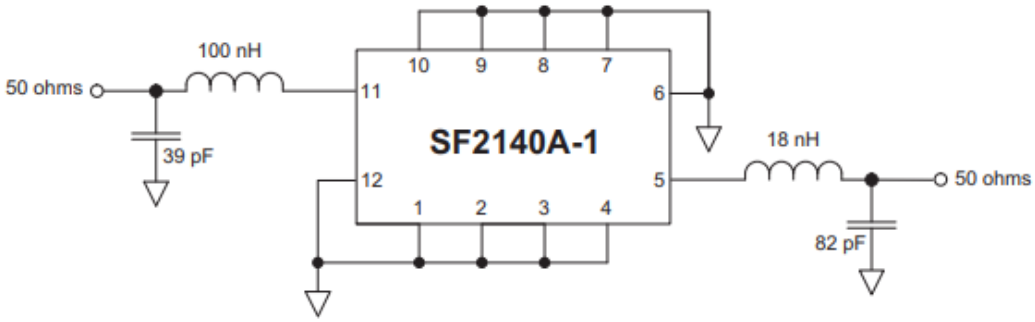


SF2140A-1 S_{22} Impedance Plot through Matching Network

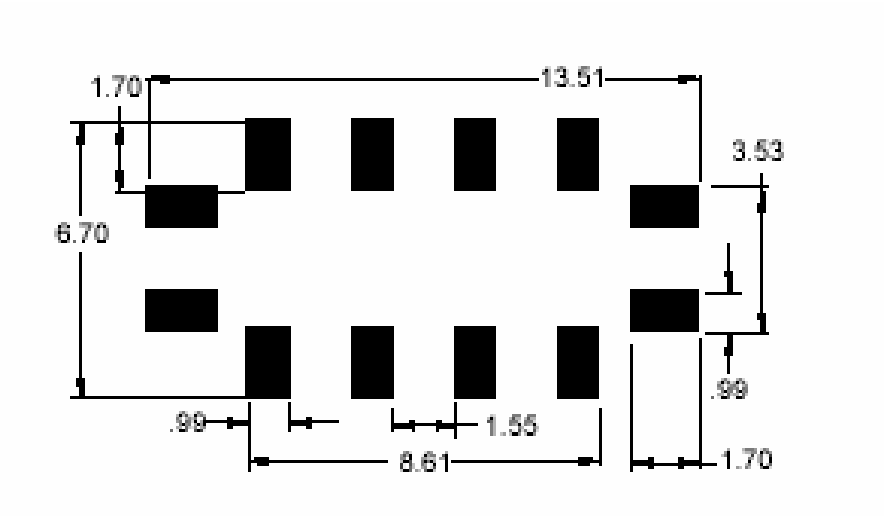


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SF2140A-1 50 ohm Matching Network

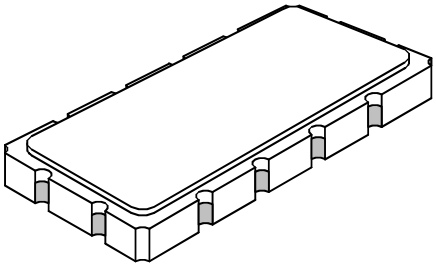


SF2140A-1 Circuit Board Pad Layout



SMP-53 Case

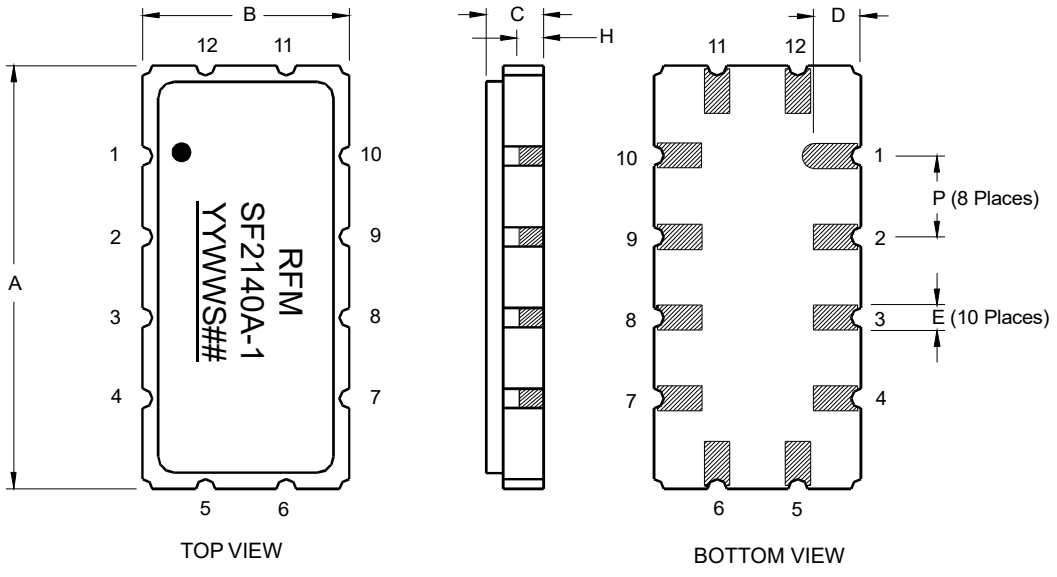
12-Terminal Ceramic Surface-Mount Case
13.3 x 6.5 mm Nominal Footprint



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

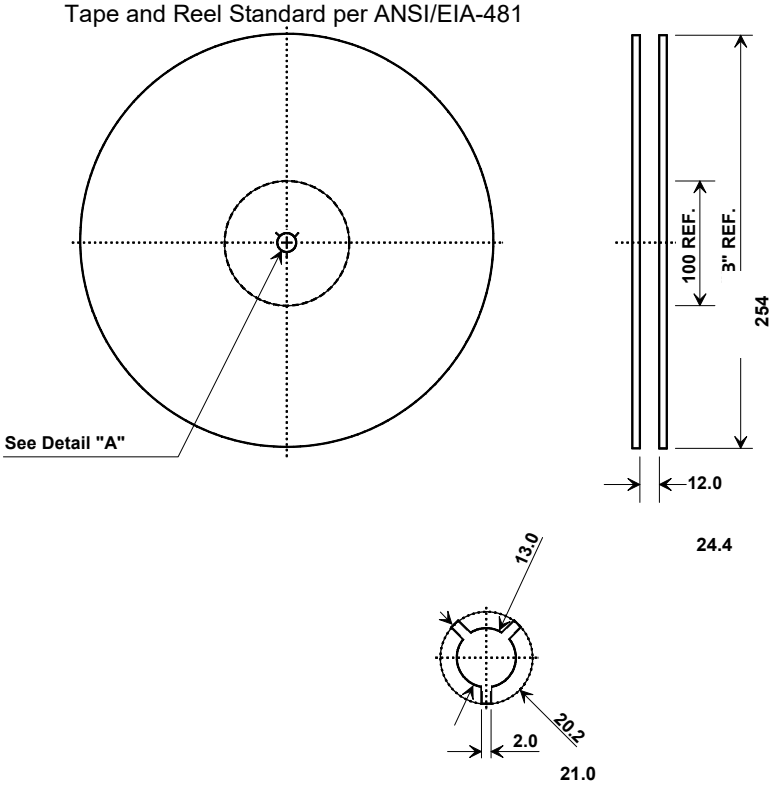


TOP VIEW

BOTTOM VIEW

Tape and Reel Specifications

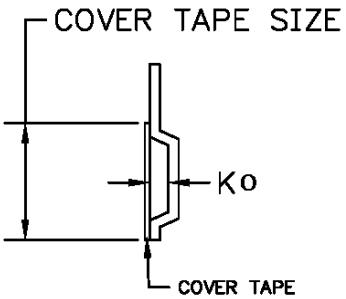
Tape and Reel Standard per ANSI/EIA-481

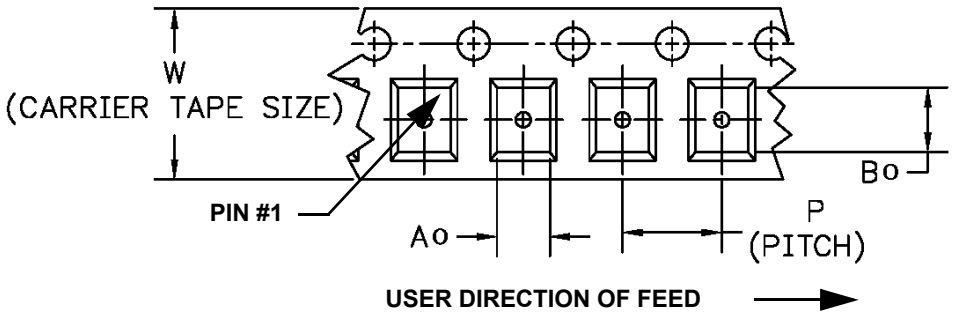


Quantity Per Reel
500 Min
1000 Max

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

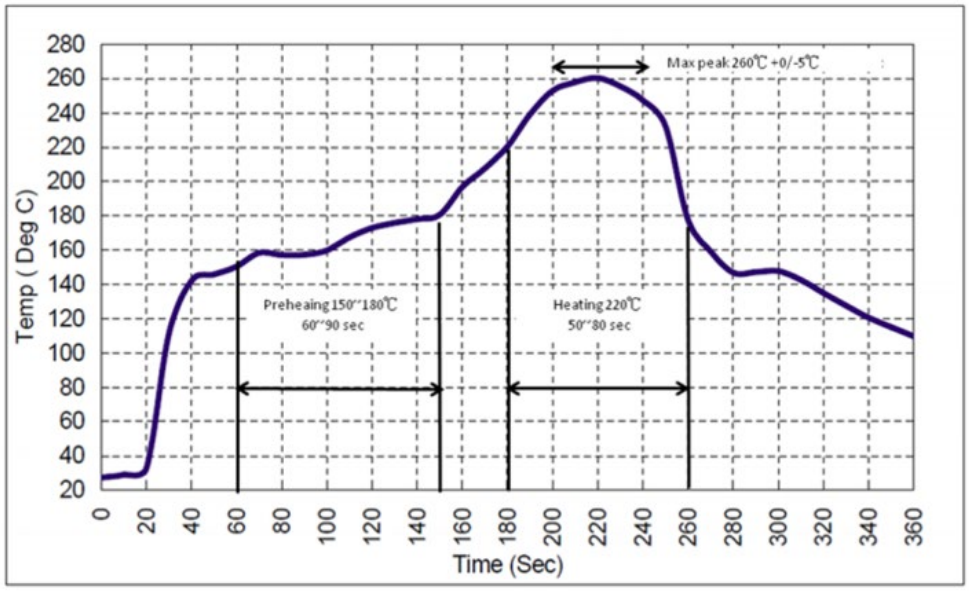




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Recommended Reflow Profile

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



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