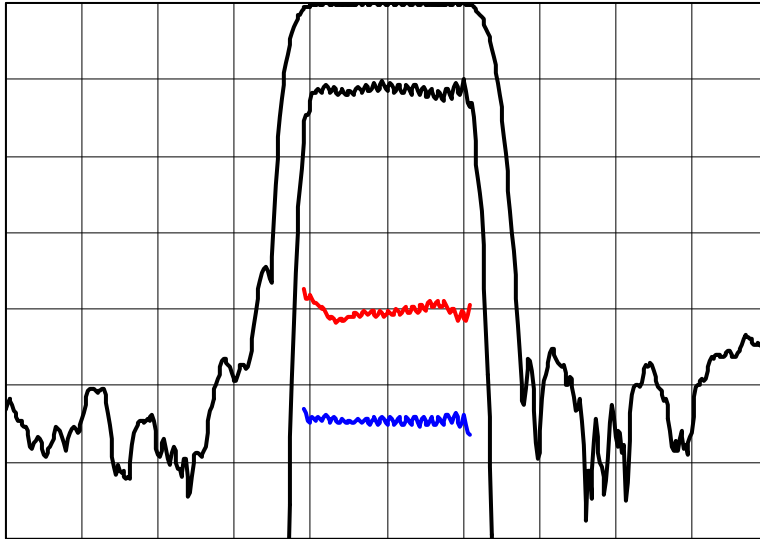


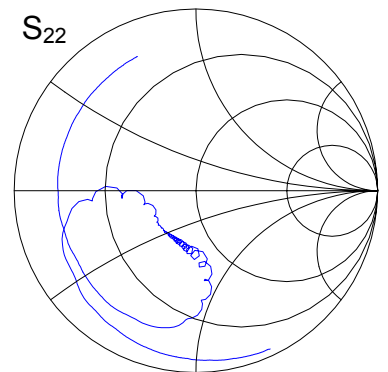
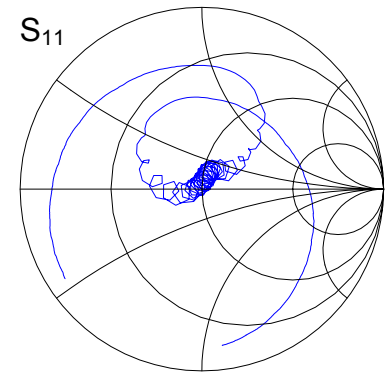
**DESCRIPTION**

- 140 MHz SAW bandpass filter with 12 MHz bandwidth in 13.3 x 6.5 mm SMP.
- RoHS compliant.

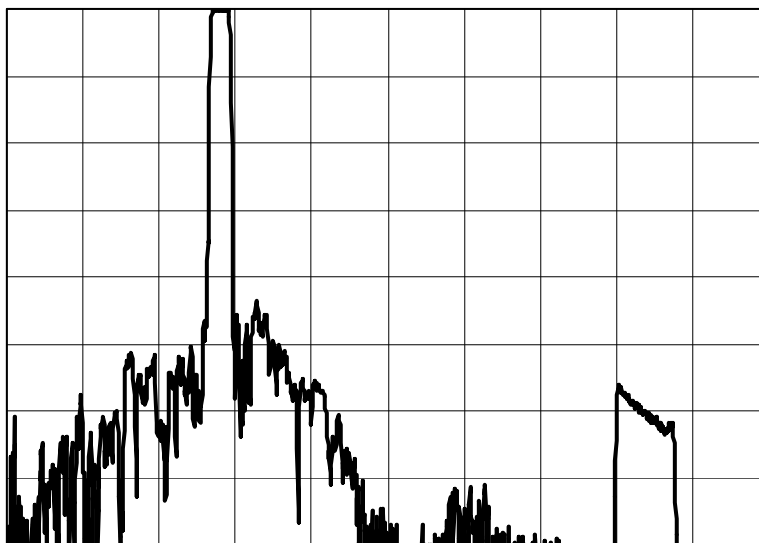
**TYPICAL PERFORMANCE**



Horizontal :	Frequency	5	MHz / div
Vertical (from top)	Magnitude	10	dB/div
	Magnitude	1	dB/div
	Phase Deviation	10	deg/div
	Group Delay Deviation	200	ns/div



Input and Output Impedances  
Frequency Span : 100-180 MHz



Wide Band Response  
Frequency Span : 0-500 MHz  
Vertical Scale : 10 dB/div

## SPECIFICATION

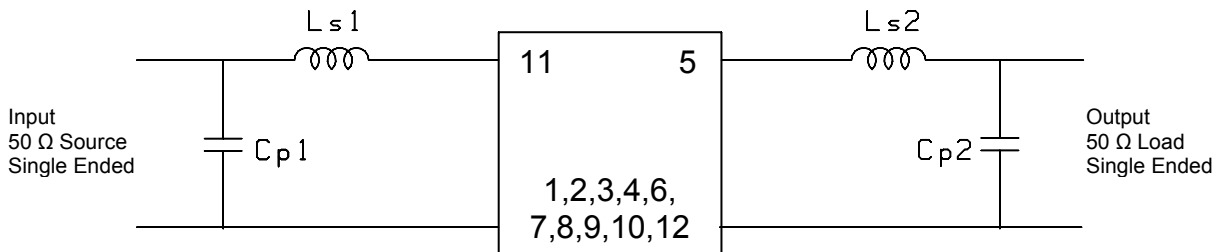
Parameter	Min	Typ	Max	Units
Center Frequency (Fc) <sup>1</sup>	139.6	140	140.4	MHz
Insertion Loss <sup>2</sup>	-	7.3	9	dB
1 dB Bandwidth	11	11.5	-	MHz
3 dB Bandwidth	12	12.5	-	MHz
35 dB Bandwidth	-	16.5	18	MHz
Passband Ripple <sup>3</sup>	-	0.3	1	dB p-p
Phase Deviation from Linear <sup>3</sup>	-	3.4	15	deg p-p
Group Delay Variation <sup>3</sup>	-	40	120	ns p-p
Absolute Delay	-	0.94	-	µs
Ultimate Rejection <sup>4</sup>	40	44	-	dB
Substrate	Lithium Niobate			
Temperature Coefficient of Frequency	-	-90	-	ppm/°C
Ambient Temperature	-	25	-	°C
System Source and Load Impedance	-	50	-	Ω

- Notes:
1. Average of the lower and upper 3 dB frequencies.
  2. Average level in the passband.
  3. Evaluated over 90% of the 3dB bandwidth (i.e.  $F_c \pm 5.4$  MHz).
  4. Evaluated over the intervals 20 – 128 MHz and 152 – 280 MHz.

## MAXIMUM RATINGS

Parameter	Min	Max	Units
Storage Temperature Range	-40	+85	°C
Input Power Level	-	+17	dBm
DC Voltage Between Each Terminal	-	15	V

## MATCHING CIRCUIT



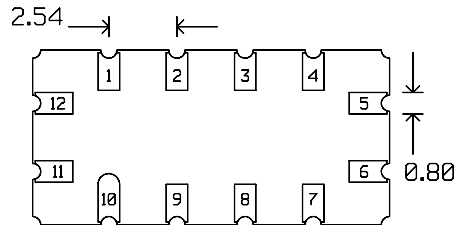
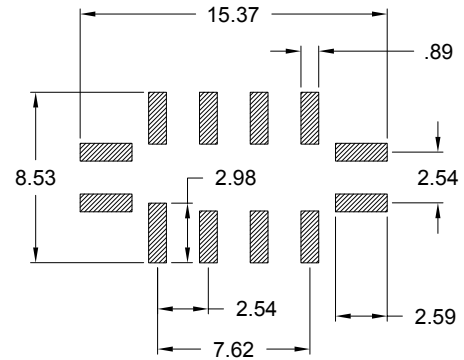
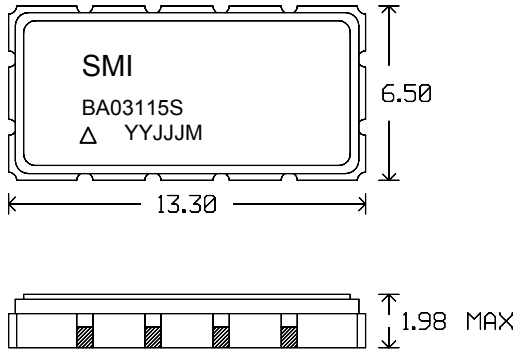
Component values (minimum inductor Q = 45):

$$Ls1 = 100 \text{ nH} \quad Cp1 = 22 \text{ pF} \quad Ls2 = 100 \text{ nH} \quad Cp2 = 0 \text{ pF (not used)}$$

Notes:

1. The component values shown above are those used in the Spectrum Microwave test fixture. Optimum values may change depending on board layout. Cp2 may be either a capacitor or an inductor.
2. 5% tolerance components or better are recommended.

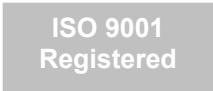
**PACKAGE OUTLINE AND RECOMMENDED PCB LAYOUT**



Pin Configuration:	
11	Input
12	Input Return
5	Output
6	Output Return
All Others	Ground

Package Material:  
Body:  $Al_2O_3$  ceramic  
Lid: Kovar, Ni plated  
Terminations: Au plating 1  $\mu$ m min,  
over a 1.3-8.9  $\mu$ m Ni plating

NOTES:  
DIMENSIONS SHOWN ARE ALL  
NOMINAL IN MILLIMETRES. ALL  
TOLERANCES ARE  $\pm 0.15$ MM EXCEPT  
OVERALL LENGTH AND WIDTH



All specifications are believed to be accurate and reliable. However, Spectrum Microwave reserves the right to make changes without notice.  
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