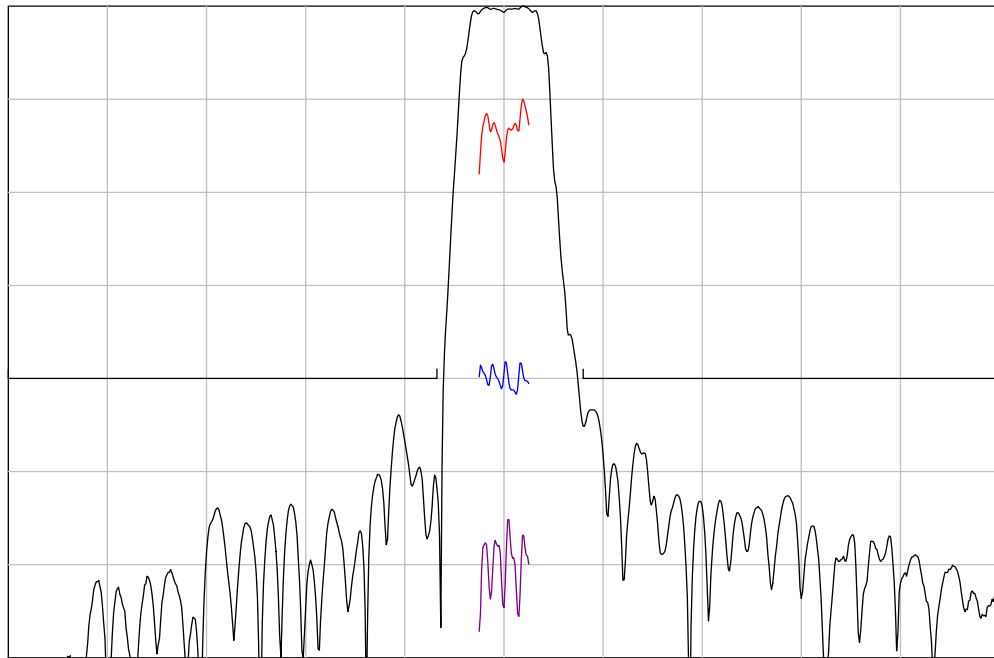




## DESCRIPTION

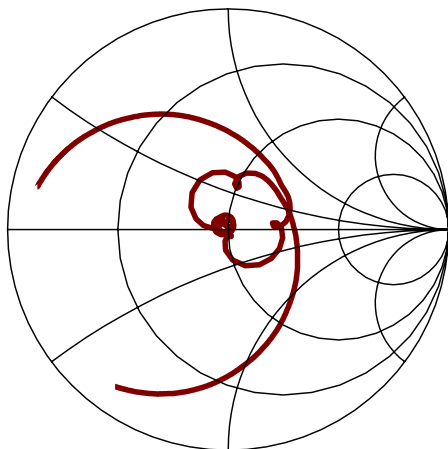
- 140 MHz SAW bandpass filter with 1 MHz bandwidth.
- 13.3 x 6.5 mm SMP.
- RoHS compliant.

## TYPICAL PERFORMANCE

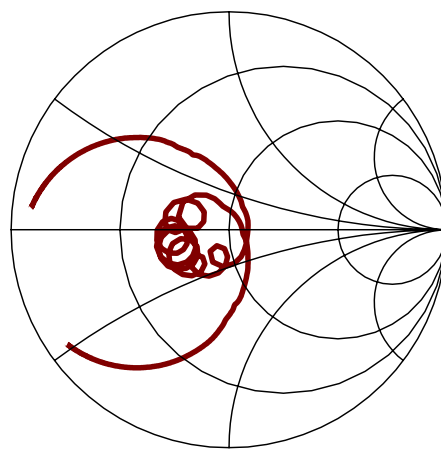


Horizontal: Frequency : 10 MHz/div  
Vertical from top: Relative Magnitude : 10 dB/div  
Relative magnitude : 1 dB/div  
Phase Linearity : 6 deg/div  
Group Delay Deviation : 100 ns/div

**S11 (130 to 150 MHz)**



**S22 (130 to 150 MHz)**





## SPECIFICATION

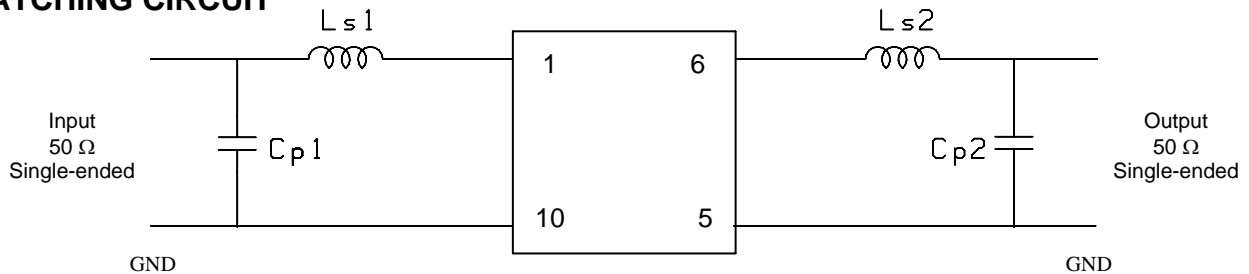
Parameter	Min	Typ	Max	Units
Center Frequency, $F_c$ <sup>1</sup>	139.90	140.00	140.10	MHz
Minimum Insertion Loss	-	9.8	12.0	dB
1 dB Bandwidth <sup>2</sup>	1.00	1.33	-	MHz
3 dB Bandwidth <sup>2</sup>	1.20	1.45	-	MHz
40 dB Bandwidth <sup>2</sup>		2.71	2.80	MHz
Rejection (70 to 138.65 MHz) <sup>2</sup>	40	44	-	dB
(141.6 to 210 MHz) <sup>2</sup>	40	44	-	dB
Passband Amplitude Ripple <sup>3</sup>	-	0.5	1.0	dB p-p
Passband Phase Ripple <sup>3</sup>	-	3.2	6	deg p-p
Passband Group Delay Ripple <sup>3</sup>	-	130	300	ns p-p
Absolute Delay		1.76	-	us
Input Return Loss at $F_c$	8	15	-	dB
Output Return Loss at $F_c$	8	15	-	dB
Temperature coefficient of Frequency	-	-0.032	-	ppm/°C <sup>2</sup>
Source/Load Impedance	50			ohms
Ambient Temperature	20	25	30	°C

- Notes:
1. Defined as the average of the lower and upper 3 dB frequencies.
  2. All dB levels are defined relative to the insertion loss.
  3. Measured over  $F_c \pm 0.5$  MHz.

## MAXIMUM RATINGS

Parameter	Min	Max	Units
Storage Temperature Range	-40	85	°C
Operating Temperature Range	-40	85	°C
Input Power Level	-	10	dBm

## MATCHING CIRCUIT



Typical component values:  
(Minimum inductor Q = 40)

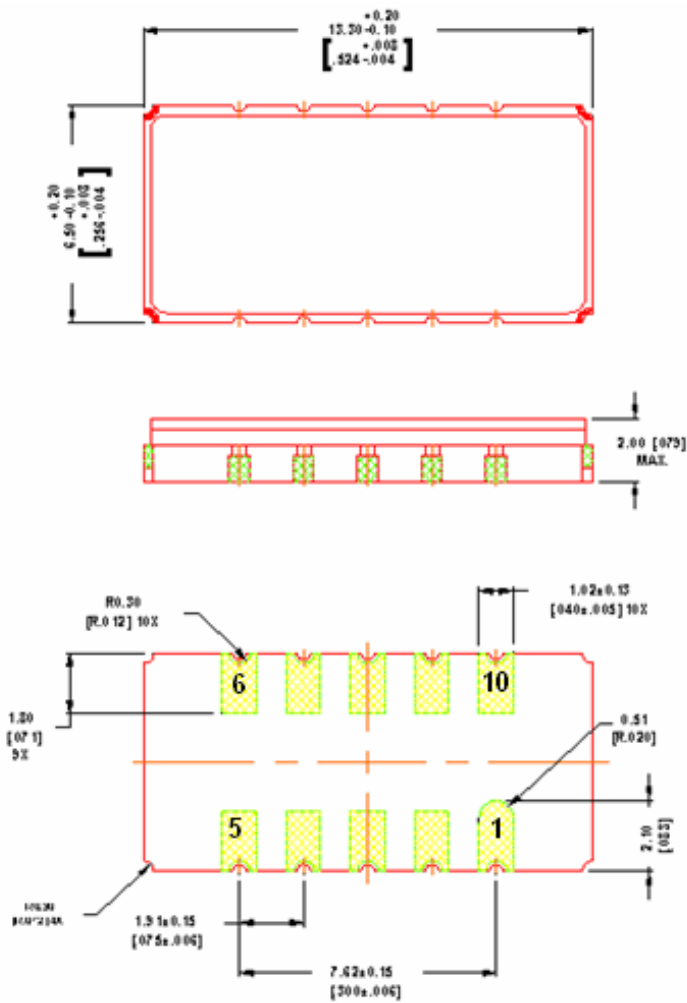
$$\begin{aligned} L_{s1} &= 192 \text{ nH} \\ C_{p1} &= 47 \text{ pF} \end{aligned}$$

$$\begin{aligned} L_{s2} &= 213 \text{ nH} \\ C_{p2} &= 56 \text{ pF} \end{aligned}$$

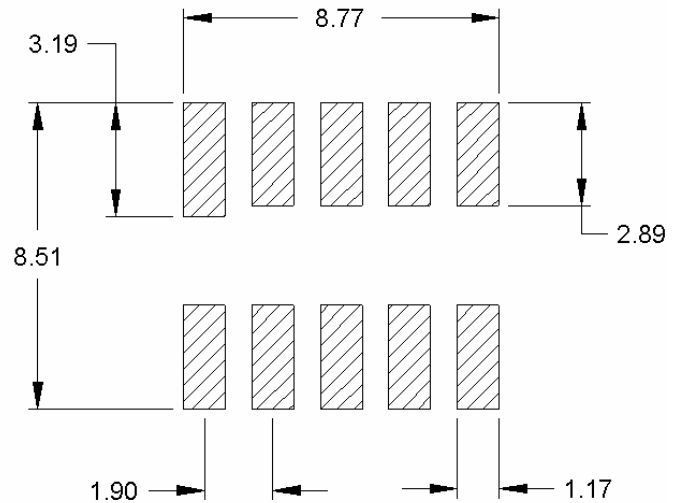
Notes:

1. Recommend use of 2% tolerance matching components.
2. Component values shown are for guidance only and may change depending on board layout.

**PACKAGE OUTLINE**



**SUGGESTED FOOTPRINT**



Units: mm

Tolerances are ±0.15 mm except for the overall length and width, which are nominal values.

**Pad Configuration:**

- Input: 1
- Output: 6
- Ground: 2,3,4,5,6,7,8,9

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



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