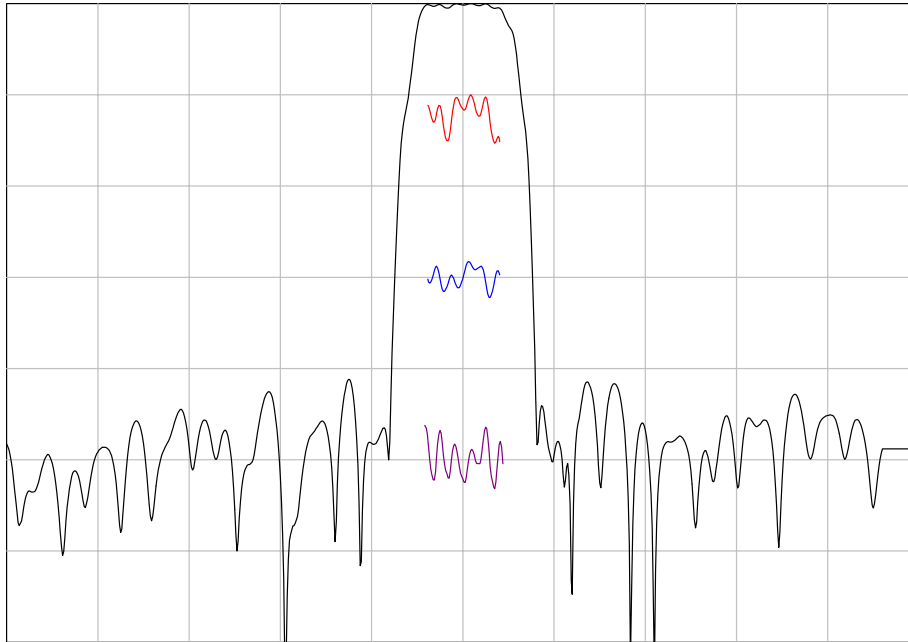


## DESCRIPTION

- 456 MHz, 2.5 MHz bandwidth high performance IF SAW filter in 7x 5 mm surface mount package.
- For WiMAX applications.
- RoHS compliant.

## TYPICAL PERFORMANCE



Horizontal: 3 MHz/div

Vertical from top:

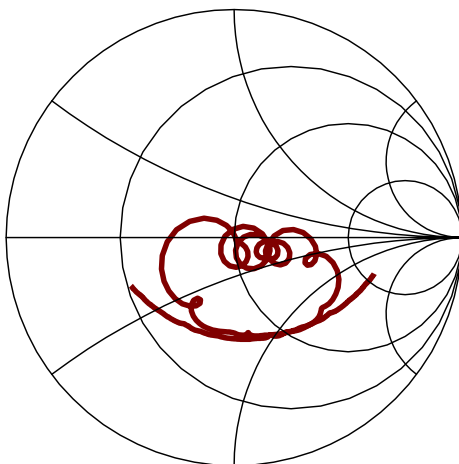
Relative Magnitude : 10 dB/div

Relative magnitude : 1 dB/div

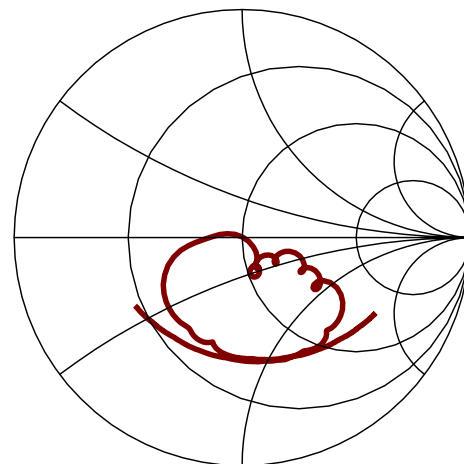
Phase Linearity : 10 deg/div

Group Delay Deviation : 100 ns/div

**S11 (441 to 471MHz)**



**S22 (441 to 471 MHz)**



## SPECIFICATION

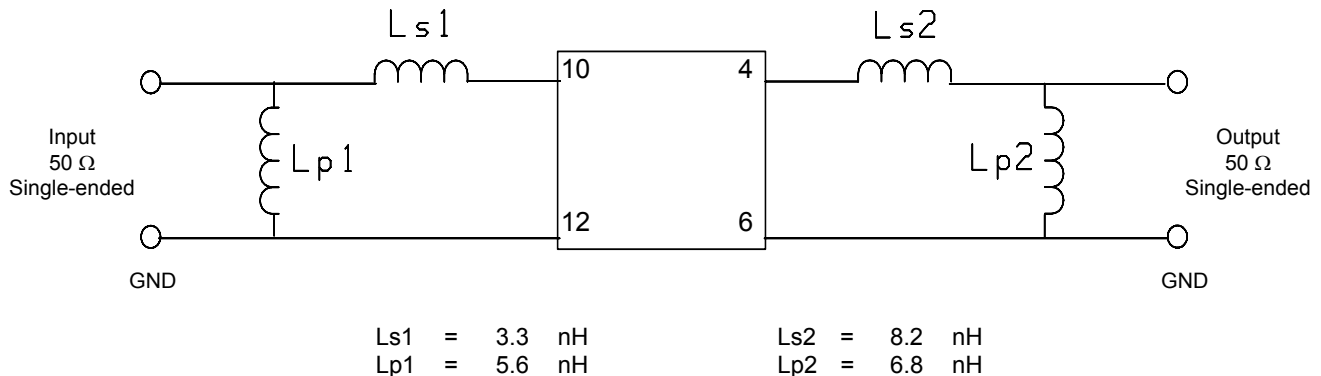
Parameter	Min	Typ	Max	Units
Center Frequency (Fc) <sup>1</sup>	455.9	456.0	460.1	MHz
Insertion Loss	-	10	13	dB
Passband Ripple (456+/-1.15 MHz)	-	0.7	1	dB p-p
Group Delay Ripple (456+/-1.25 MHz)	-	100	150	ns p-p
Absolute Group Delay	-	0.77	3	μs
1 dB Bandwidth <sup>2</sup>	2.50	2.70	-	MHz
3 dB Bandwidth <sup>2</sup>	-	3.15	-	MHz
30 dB Bandwidth <sup>2</sup>	-	4.53	4.90	MHz
40 dB Bandwidth <sup>2</sup>	-	4.80	5.20	MHz
Rejection at 456+/-3 MHz <sup>2</sup>	40	45	-	dB
Rejection at 456+/-40 MHz <sup>2</sup>	45	50	-	dB
Rejection (580 to 870 MHz) <sup>2</sup>	30	60	-	dB
Input and Output Return Loss at 456 MHz	8	12	-	dB
Substrate Material	-	Quartz	-	
Ambient Temperature	-	25	-	°C
Temperature Coefficient of Frequency (Tc)	-	-0.036	-	ppm/°C <sup>2</sup>
System Source and Load Impedance	-	50	-	Ω

Notes: 1. Average of lower & upper 30 dB frequencies.  
2. Rejection relative to insertion loss.

## MAXIMUM RATINGS

Parameter	Min	Max	Units
Storage Temperature Range	-40	+85	°C
Operating Temperature Range	-40	+85	°C
Input Power Level	-	+17	dBm

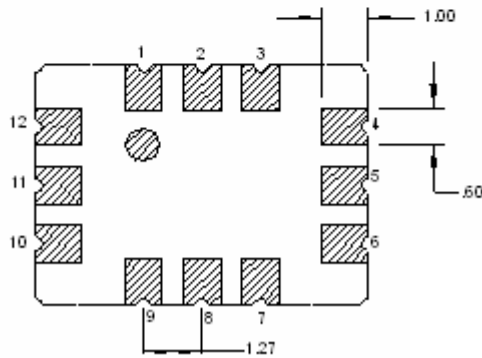
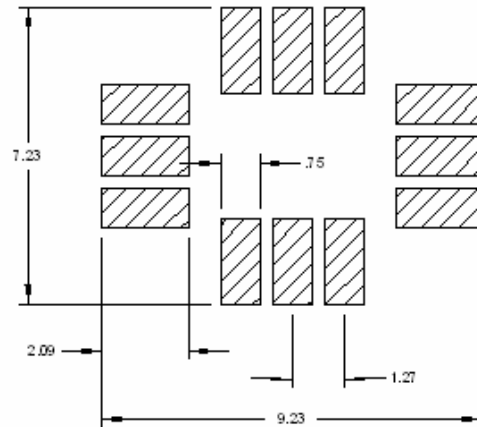
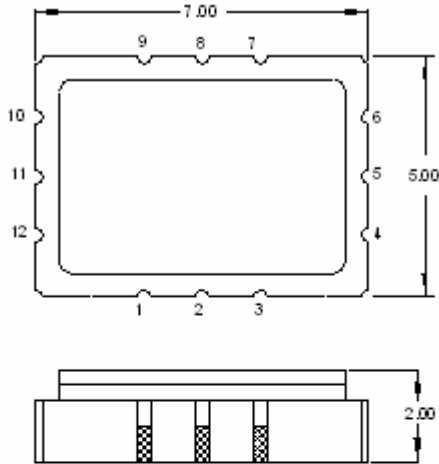
## MATCHING CIRCUIT



Notes:

1. Recommended component tolerances for inductors is  $\pm 1\%$  with minimum  $Q=40$ .
2. Values shown are for reference only. Actual values are dependent upon board layout.

**PACKAGE OUTLINE AND RECOMMENDED PCB LAYOUT**



Pin Configuration:	
10	Input
12	Input Return
4	Output
6	Output Return
All Others	Ground

NOTES:  
DIMENSIONS SHOWN ARE ALL  
NOMINAL IN MILLIMETRES. ALL  
TOLERANCES ARE ±0.15MM

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

ISO 9001  
Registered

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