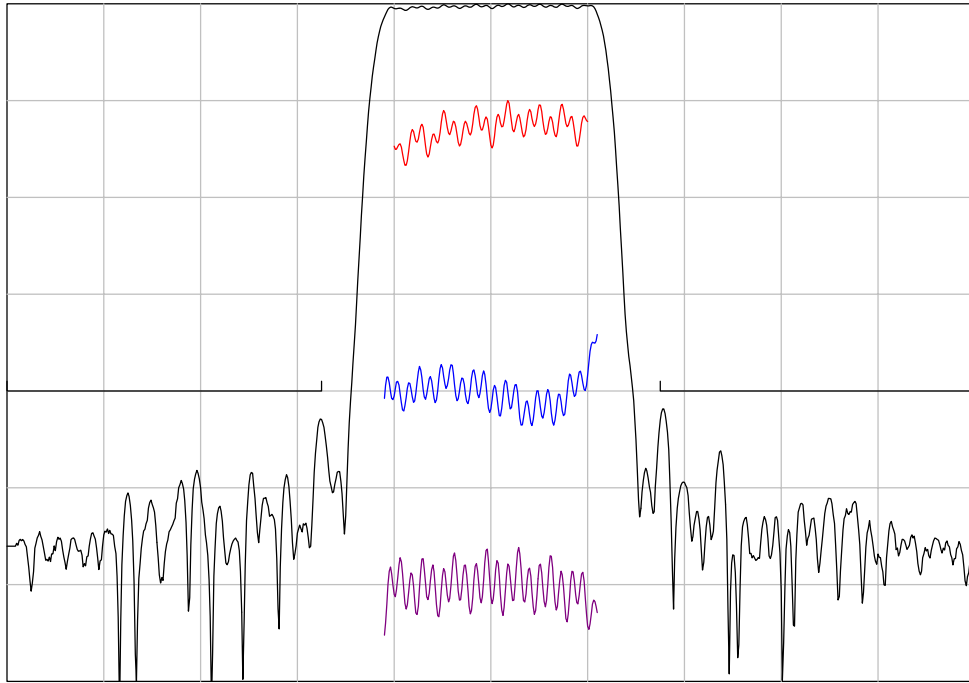


## DESCRIPTION

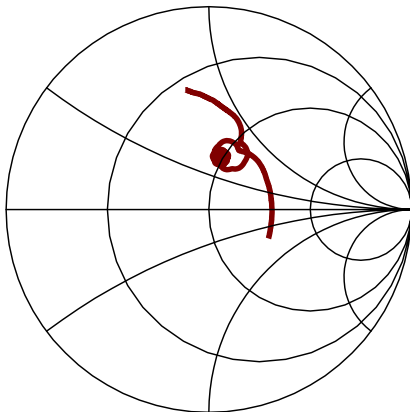
- 140 MHz SAW bandpass filter with 4.4 MHz bandwidth.
- 27.2 x 12.7 mm DIP package.
- RoHS compliant.

## TYPICAL PERFORMANCE

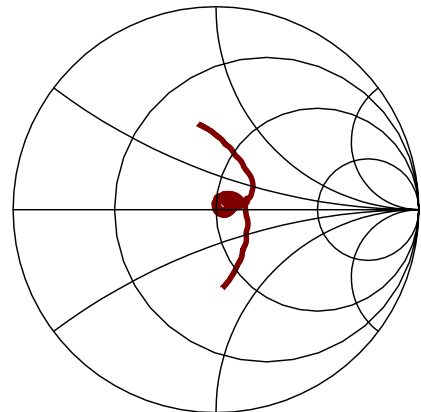


Horizontal: Frequency : 2 MHz/div  
 Vertical from Top: Relative Magnitude : 10 dB/div  
 Relative magnitude : 1 dB/div  
 Phase Linearity : 5 deg/div  
 Group Delay : 100 ns/div

**S11**



**S22**



## SPECIFICATION

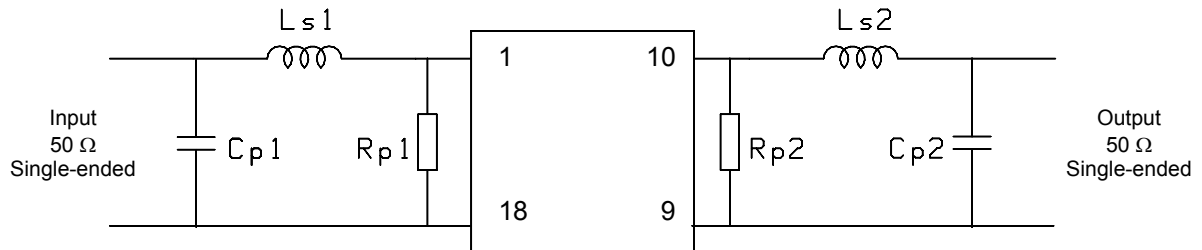
Parameter	Min	Typ	Max	Units
Center Frequency ( $F_C$ ) <sup>1</sup>	139.92	140.00	140.08	MHz
Minimum Insertion Loss	-	19.9	21.5	dB
1.5 dB Bandwidth <sup>2</sup>	4.40	4.42	-	MHz
25 dB Bandwidth <sup>2</sup>	-	5.39	5.44	MHz
30 dB Bandwidth <sup>2</sup>	-	5.49	5.70	MHz
40 dB Bandwidth <sup>2</sup>	-	5.86	6.10	MHz
Passband Variation ( $F_C \pm 2.0$ MHz)	-	0.6	1.0	dB p-p
Phase Linearity ( $F_C \pm 2.2$ MHz)	-	3	6	deg p-p
Group Delay Variation ( $F_C \pm 2.2$ MHz) <sup>3</sup>	-	80	100	ns p-p
Absolute Delay	-	2.26	2.30	us
Input VSWR ( $F_C \pm 2.2$ MHz)	-	2.0	2.3	:1
Output VSWR ( $F_C \pm 2.2$ MHz)	-	2.0	2.3	:1
Ultimate Rejection ( $F_C \pm 3.5$ to $F_C \pm 60$ MHz)	40	45	-	dB
Substrate Material	112 LiTaO <sub>3</sub>			
Ambient Temperature ( $T_{ref}$ )	-	25	-	°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. A smoothing aperture of 0.125 MHz may be used for this measurement.
  4. Typical change of filter response with temperature is:  $\Delta f = (T - T_{ref}) \cdot T_c \cdot F_C$  in ppm.

## MAXIMUM RATINGS

Parameter	Min	Typ	Max	Units
Storage Temperature Range	-40	25	85	°C
Material Coefficient of Frequency ( $T_c$ ) <sup>4</sup>	-	-23	-	ppm/°C
Input Power Level	-	0	10	dBm

## MATCHING CIRCUIT



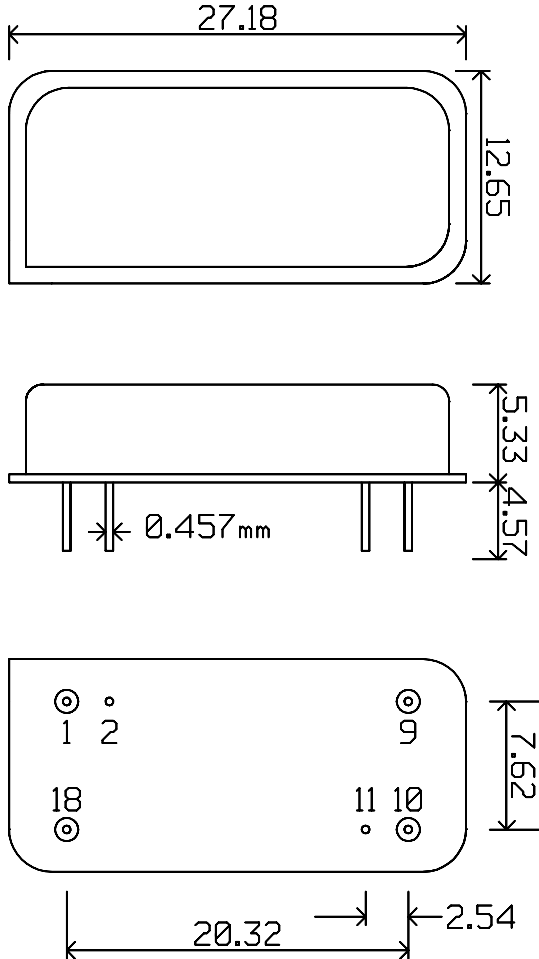
Typical component values:  
(Minimum inductor Q = 45)

$L_{s1}$	=	15	nH	$L_{s2}$	=	18	nH
$C_{p1}$	=	68	pF	$C_{p2}$	=	68	pF
$R_{p1}$	=	22	$\Omega$	$R_{p2}$	=	22	$\Omega$

Notes:

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

**PACKAGE OUTLINE**



**Units:** mm

Dimensions are nominal in mm. All tolerances are  $\pm 0.15$  mm except overall length and width and lead thicknesses.

**Pin Configuration:**

Input:	1
Input Return:	18
Output:	10
Output Return:	9
Ground:	2, 11

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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