



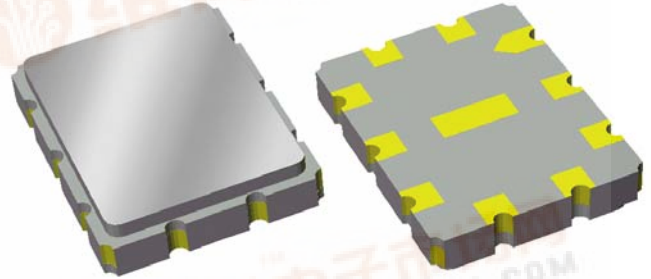
# Part Number 856314

## 140 MHz SAW Filter

### Preliminary Data Sheet

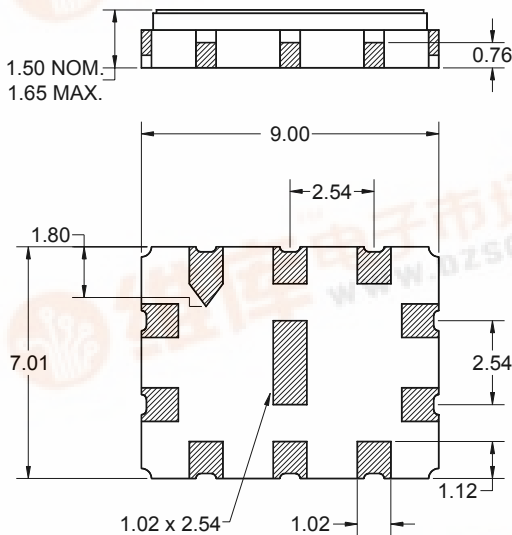
#### Features

- For broadband applications
- 3 dB bandwidth 72 MHz
- High-attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Replaces Sawtek P/N 851949



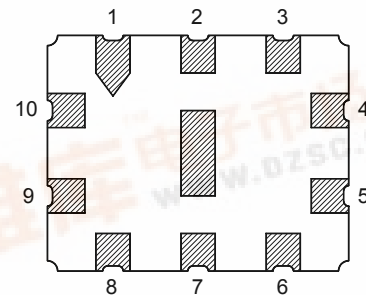
#### Package

Surface Mount 9.00 x 7.01 x 1.50 mm



#### Pin Configuration

Bottom View



Pin No.	Description
4	Output
5	Output return
9	Input
10	Input return
1,2,3,6,7,8	Case ground

Dimensions shown are nominal in millimeters  
 All tolerances are  $\pm 0.15\text{mm}$  except overall length and width  $+0.10\text{mm}/-0.10\text{mm}$

Body:  $\text{Al}_2\text{O}_3$  ceramic  
 Lid: Kovar, Ni plated

Terminations: Au plating 0.5 - 1.0 $\mu\text{m}$ ,  
 over a 2 - 6 $\mu\text{m}$  Ni plating



# Preliminary Data Sheet

## Electrical Specifications <sup>(1)</sup>

Operating Temperature Range: <sup>(2)</sup> 0 to +70 °C

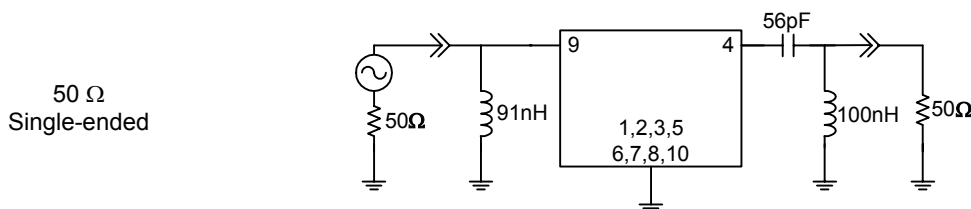
Parameter <sup>(3)</sup>	Minimum	Typical <sup>(4)</sup>	Maximum	Unit
Center Frequency	-	140	-	MHz
Maximum Insertion Loss at 140 MHz	-	21	22.5	dB
Lower 1.5 dB Bandedge	-	103	109	MHz
Upper 1.5 dB Bandedge	171	177	-	MHz
Lower 3 dB Bandedge	-	102	104	MHz
Upper 3 dB Bandedge	176	178	-	MHz
Lower 40 dB Bandedge	89	97	-	MHz
Upper 40 dB Bandedge	-	186	191	MHz
Amplitude Variation 109 - 171 MHz	-	0.7	1.5	dB p-p
Phase Linearity 109 - 171 MHz	-	4.0	10	deg p-p
Group Delay Variation 109 - 171 MHz	-	30	100	ns p-p
Relative Attenuation 15 - 75 MHz	45	50	-	dB
75 - 89 MHz	40	43	-	dB
191 - 215 MHz	40	44	-	dB
215 - 298 MHz	42	46	-	dB
Source Impedance <sup>(5)</sup>	-	50	-	Ω
Load Impedance <sup>(5)</sup>	-	50	-	Ω
Substrate Material	-	128-LiNbO <sub>3</sub>	-	-
Temperature Coefficient of Frequency	-	-74	-	ppm/°C

### Notes:

1. All specifications are based on the test circuit shown below
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
4. All typical values given at 23 °C
5. This is the optimum impedance in order to achieve the performance shown

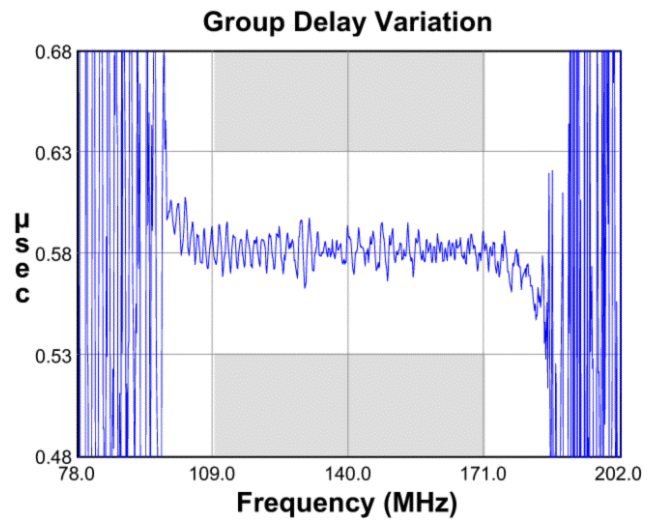
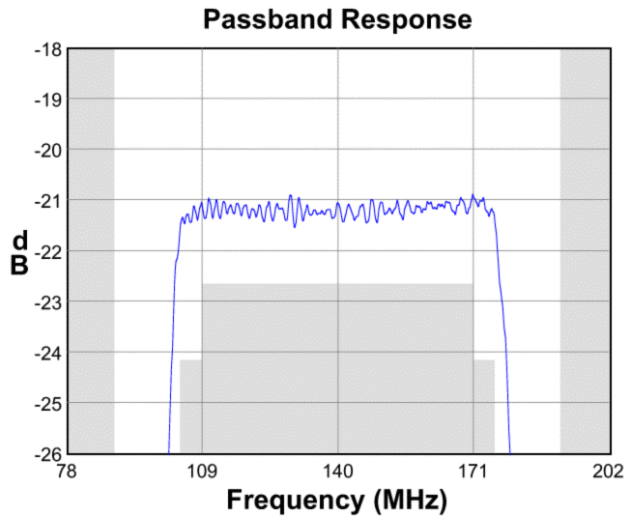
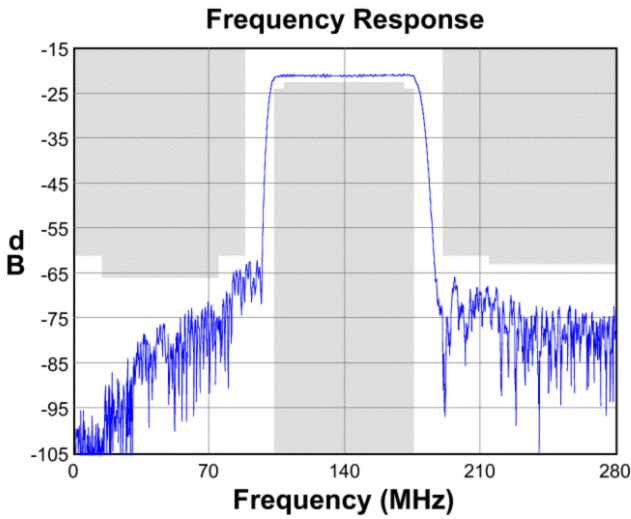
### Test Circuit:

Actual matching values may vary due to PCB layout and parasitics

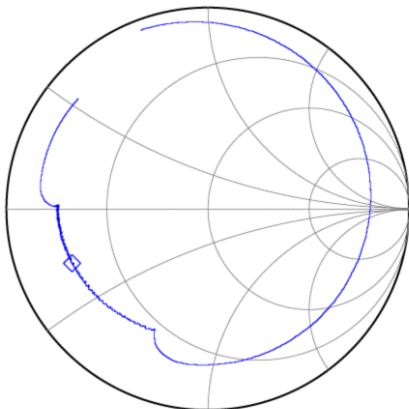


**Preliminary Data Sheet**

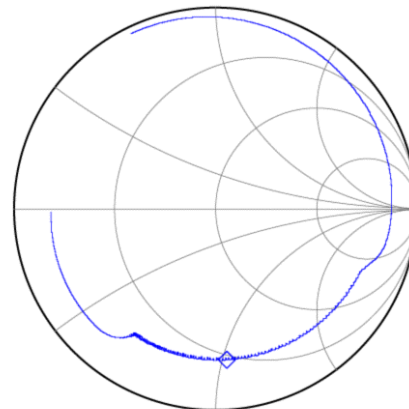
**Typical Performance (at +25°C)**



**Input Smith Chart**



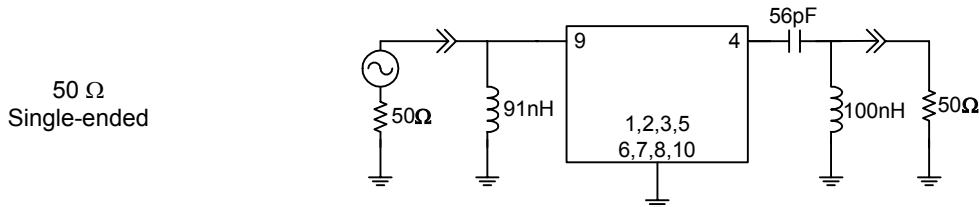
**Output Smith Chart**



**Preliminary Data Sheet**

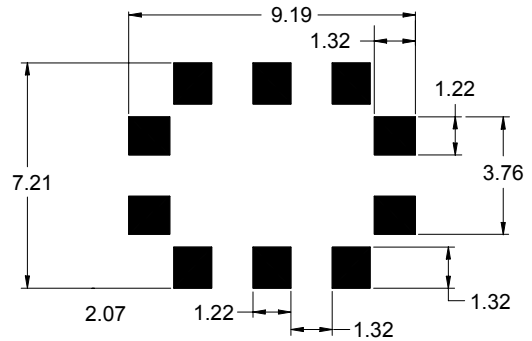
**Matching Schematics**

Actual matching values may vary due to PCB layout and parasitics



**Marking**

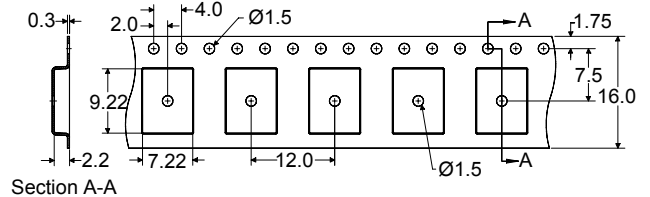
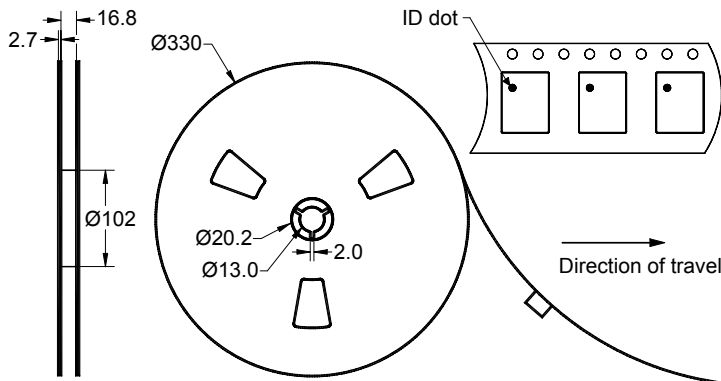
**PCB Footprint**



The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

This footprint represents a recommendation only  
Dimensions shown are nominal in millimeters

**Tape and Reel**




Dimensions shown are nominal in millimeters  
Packaging quantity: 2000 units/reel

# Preliminary Data Sheet

## Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-10	+70	°C
Storage Temperature Range	T <sub>stg</sub>	-40	+85	°C

### Warnings

- Electrostatic Sensitive Device (ESD) 
- Avoid ultrasonic exposure

## Links to Additional Technical Information

[PCB Layout Tips](#)

[Qualification Flowchart](#)

[Soldering Profile](#)

[S-Parameters](#)

[Other Technical Information](#)

Sawtek's liability is limited only to the Surface Acoustic Wave (SAW) component(s) described in this data sheet. Sawtek does not accept any liability for applications, processes, circuits or assemblies which are implemented using any Sawtek component described in this data sheet.

## Contact Information



PO Box 609501  
 Orlando, FL 32860-9501  
 USA

Phone: +1 (407) 886-8860  
 Fax: +1 (407) 886-7061  
 Email: [custservice@sawtek.com](mailto:custservice@sawtek.com)  
 Web: [www.sawtek.com](http://www.sawtek.com)

Or contact one of our worldwide  
 Network of [sales offices](#),  
[Representatives or distributors](#)