



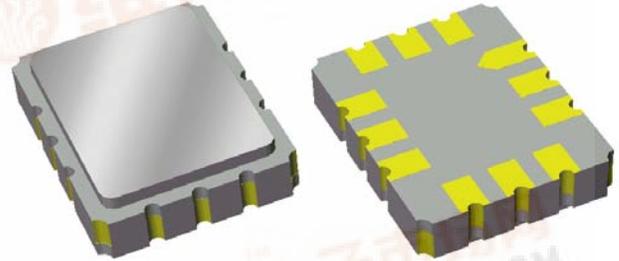
# Part Number 856097

## 398.0 MHz SAW Filter

### Data Sheet

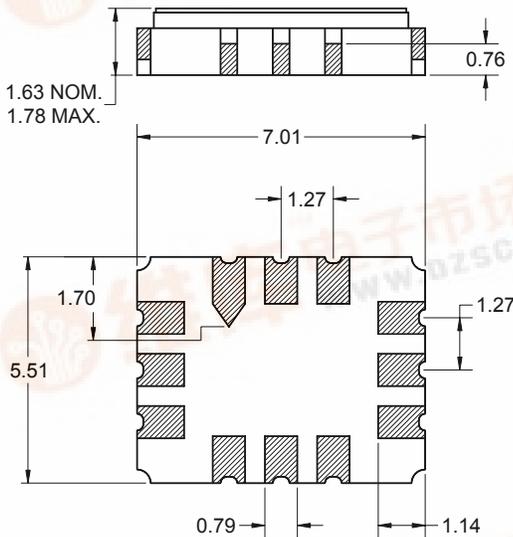
#### Features

- For WCDMA Multicarrier applications
- Usable bandwidth of 35.0 MHz
- High attenuation
- Single-ended operation at 200Ω
- Ceramic Surface Mount Package (SMP)
- Small size



#### Package

Surface Mount 7.01 x 5.51 x 1.63 mm



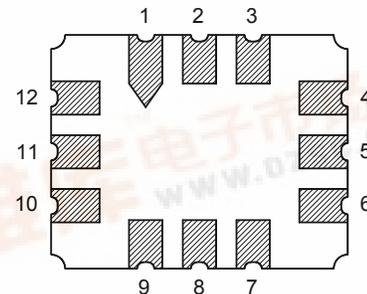
Dimensions shown are nominal in millimeters  
 All tolerances are  $\pm 0.15$ mm except overall  
 length and width  $\pm 0.13$ mm

Body:  $Al_2O_3$  ceramic  
 Lid: Kovar, Ni plated

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

#### Pin Configuration

Bottom View



Pin No.	Description
4	Output
10	Input
1,2,3,5,6	Case Ground
7,8,9,11,12	Case Ground



# Data Sheet

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

Temperature Range: <sup>(2)</sup> -40 to +85 °C

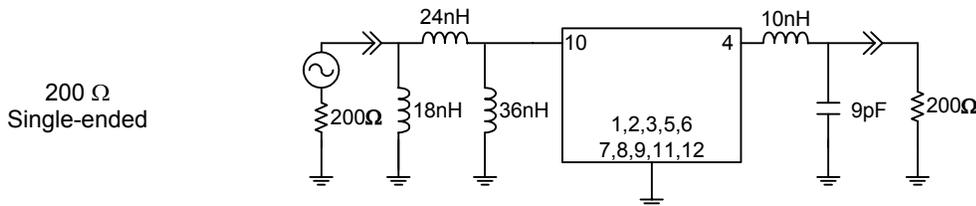
Parameter <sup>(3)</sup>	Minimum	Typical	Maximum	Unit
<b>Center Frequency (Fo)</b>	-	398	-	MHz
<b>Insertion Loss at Fo</b>	-	12	15	dB
<b>Lower 1 dB Bandedge <sup>(4)</sup></b>	-	378.5	381	MHz
<b>Upper 1 dB Bandedge</b>	415	418.5	-	MHz
<b>Amplitude Variation</b> 382 - 414 MHz	-	0.7	1.1	dB p-p
<b>Group Delay Ripple</b> 382 - 414 MHz	-	40	80	ns p-p
<b>Phase Ripple</b> 382 - 414 MHz	-	0.8	1.5	deg RMS
<b>Stopband Attenuation <sup>(4)</sup></b>				
100 - 310 MHz	35	53	-	dB
310 - 340 MHz	40	56	-	dB
365 - 368 MHz	50	57	-	dB
470 - 1000 MHz	30	46	-	dB
1000 - 2000 MHz	30	48	-	dB
<b>Source Impedance <sup>(5)</sup></b>	-	200	-	Ω
<b>Load Impedance <sup>(5)</sup></b>	-	200	-	Ω

### 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. Relative to insertion loss at 398.0 MHz
5. This is the optimum impedance in order to achieve the performance shown

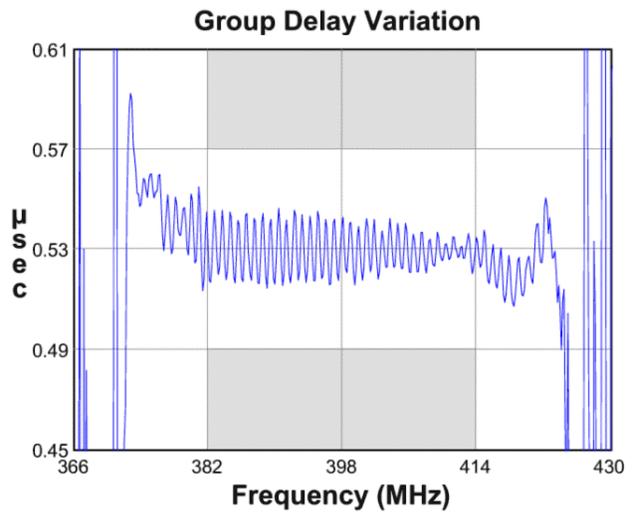
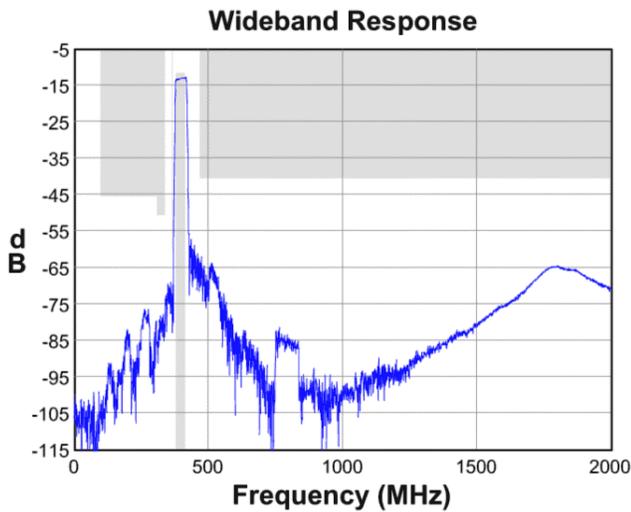
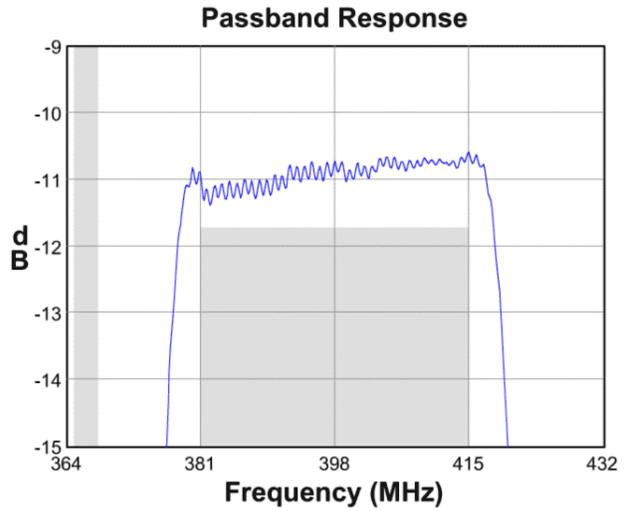
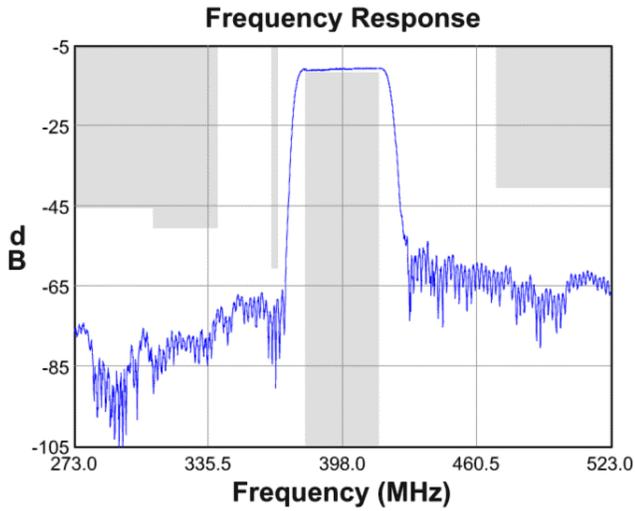
### Test Circuit:

Actual matching values may vary due to PCB layout and parasitics

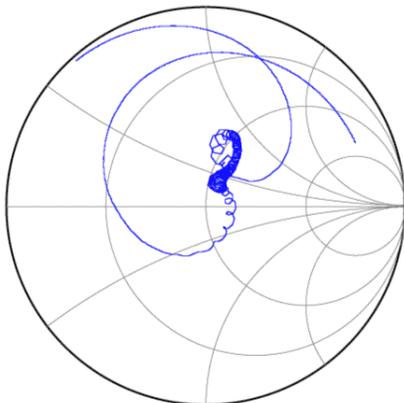


**Data Sheet**

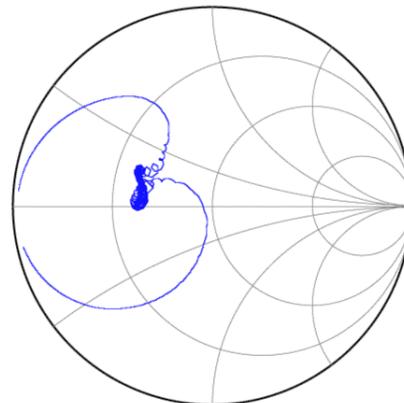
**Typical Performance (at +25°C)**



**Input Smith Chart**



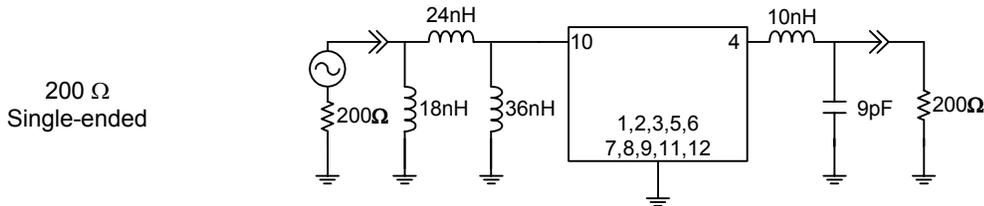
**Output Smith Chart**



**Data Sheet**

**Matching Schematics**

Actual matching values may vary due to PCB layout and parasitics

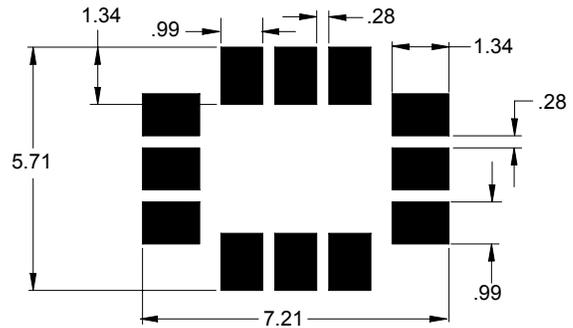


**Marking**



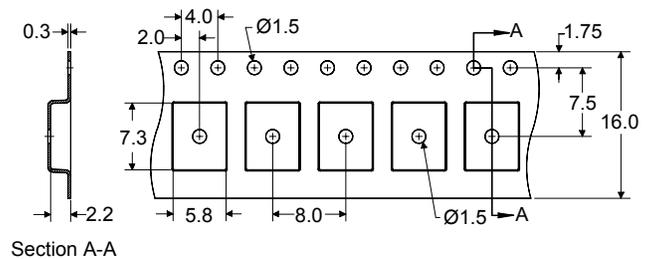
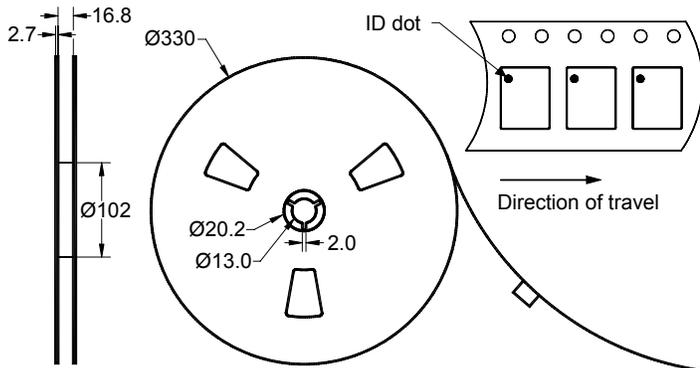
The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

**PCB Footprint**



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

**Tape and Reel**



Dimensions shown are nominal in millimeters  
Packaging quantity: 3000 units/reel

# Data Sheet

## Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-40	+85	°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](#)

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## 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)

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