



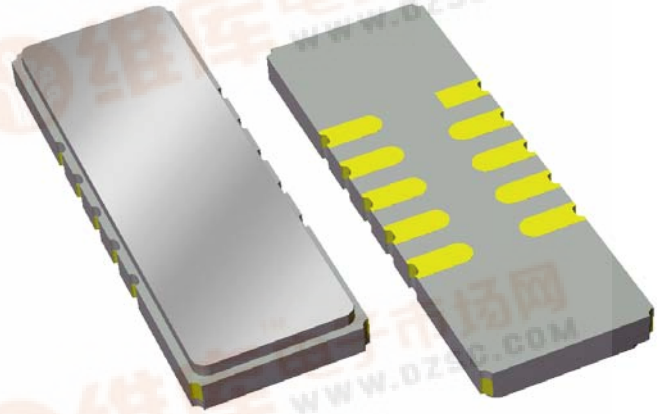
# Part Number 856151

## 240 MHz SAW Filter

### Preliminary Data Sheet

#### Features

- For CDMA applications
- Usable 1dB bandwidth of 1.1 MHz
- Low loss
- High attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)

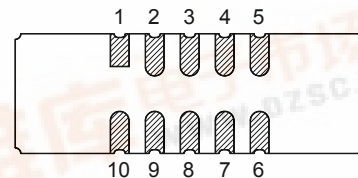
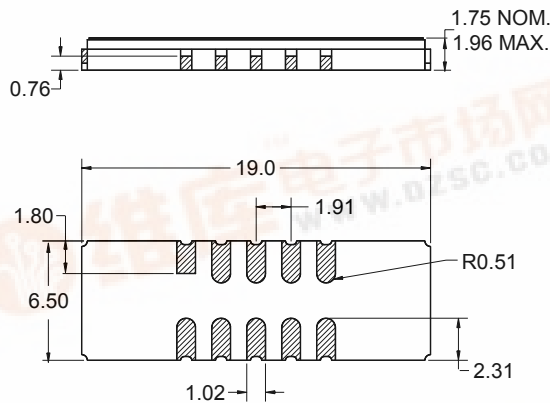


#### Package

Surface Mount 19.00 x 6.50 x 1.75 mm

#### Pin Configuration

Bottom View



Pin No.	Description
5	RF output
10	RF input
1,6	Ground
2,3,4	Case ground
7,8,9	Case ground

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



# Preliminary Data Sheet

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

Operating Temperature Range: <sup>(2)</sup> -10 to +85 °C

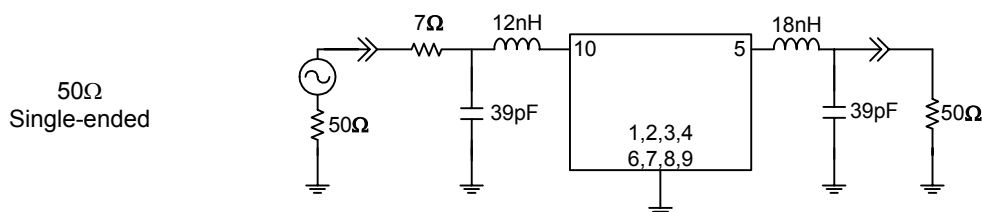
Parameter <sup>(3)</sup>	Minimum	Typical	Maximum	Unit
Center Frequency, $f_0$	-	240	-	MHz
Insertion Loss 239.45 - 240.55 MHz	-	13	16	dB
Lower 1 dB Bandedge <sup>(4)</sup>	-	239.39	239.45	MHz
Upper 1 dB Bandedge	240.55	240.68	-	MHz
Lower 10 dB Bandedge <sup>(4)</sup>	239.1	239.19	-	MHz
Upper 10 dB Bandedge	-	240.83	240.9	MHz
Attenuation				
237.5 - 238.3 MHz	35	50	-	dB
238.3 - 238.75 MHz	25	39	-	dB
241.25 - 241.7 MHz	25	38	-	dB
241.7 - 242.5 MHz	35	50	-	dB
Amplitude Variation 239.45 - 240.55 MHz	-	0.6	1.0	dB p-p
Phase Variation 239.45 - 240.55 MHz	-	2	6	degree
Absolute Group Delay	-	2.5	3.5	μsec
Group Delay Variation 239.45 - 240.55 MHz	-	90	200	nsec
Rejection				
170 - 237.5 MHz	40	46	-	dB
242.5 - 310 MHz	40	45	-	dB
Input/Output Return Loss 239.45 - 240.55 MHz	10	14	-	dB
Source Impedance <sup>(5)</sup>	-	50	-	Ω
Load Impedance <sup>(5)</sup>	-	50	-	Ω
Substrate Material	-	Quartz	-	-

### 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 attenuation measurements are measured relative to minimum insertion loss
5. This is the optimum impedance in order to achieve the performance shown

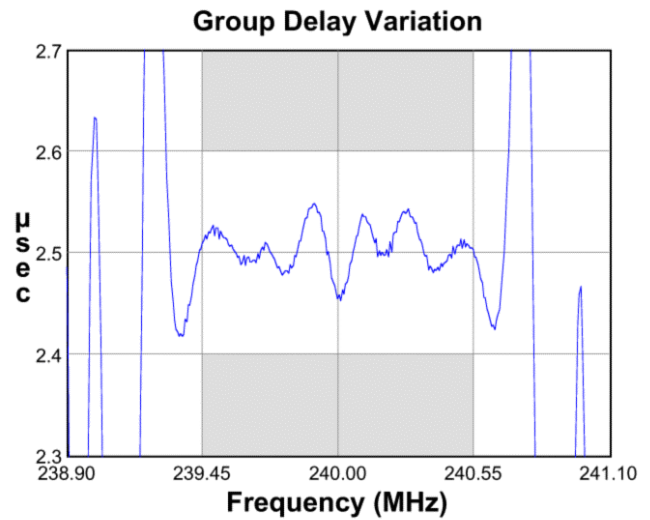
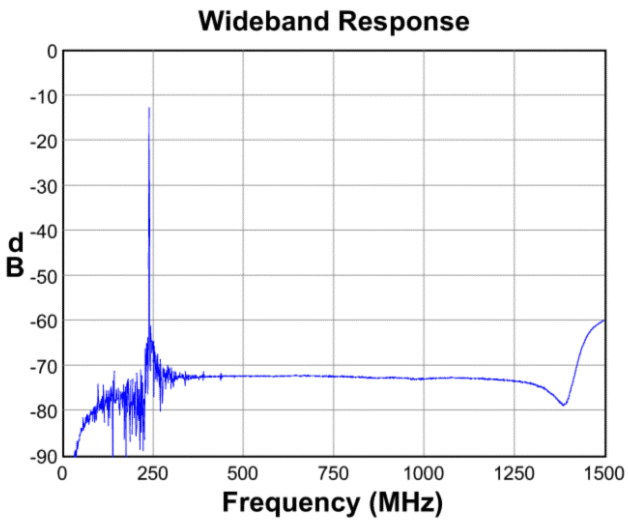
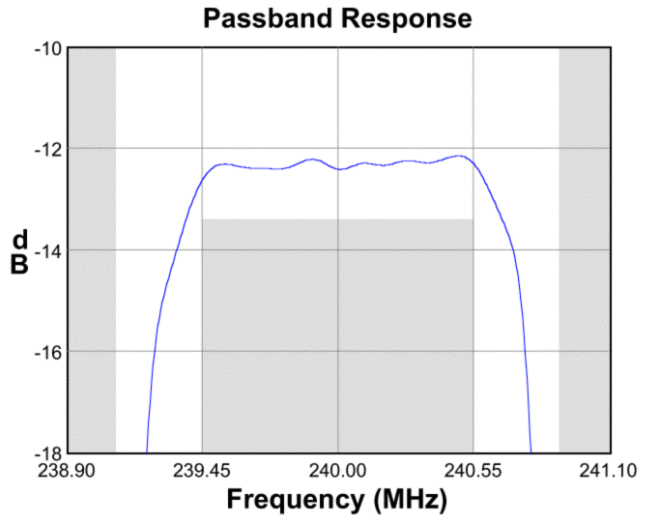
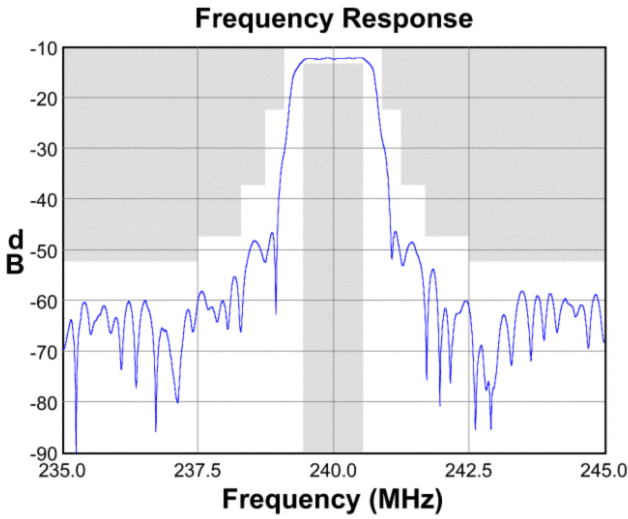
### Manual Test Circuit:

Actual matching values may vary due to PCB layout and parasitics

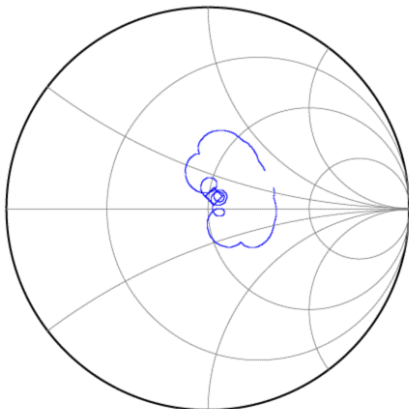


**Preliminary Data Sheet**

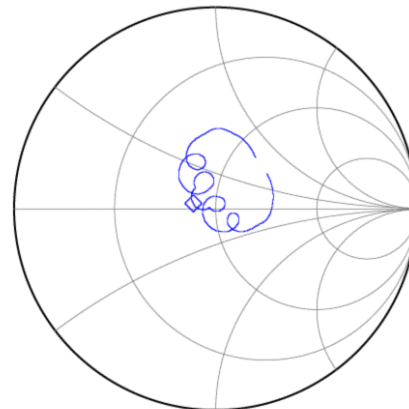
**Typical Performance (at +25°C)**



**Input Smith Chart**



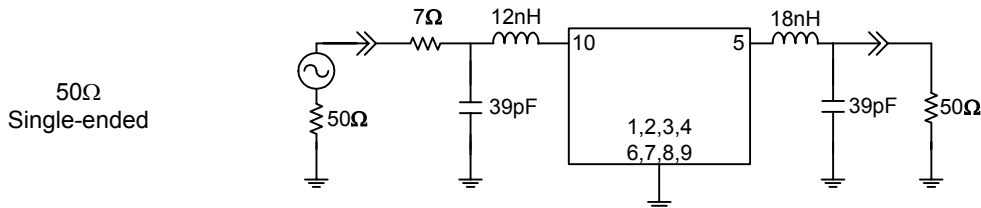
**Output Smith Chart**



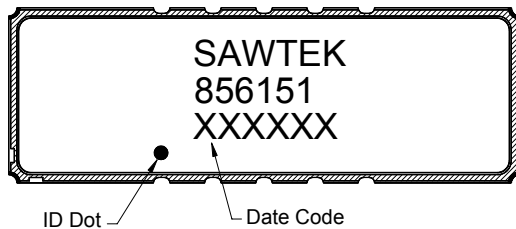
**Preliminary Data Sheet**

**Matching Schematics**

Actual matching values may vary due to PCB layout and parasitics

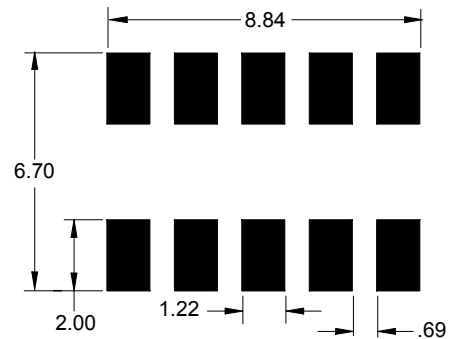


**Marking**



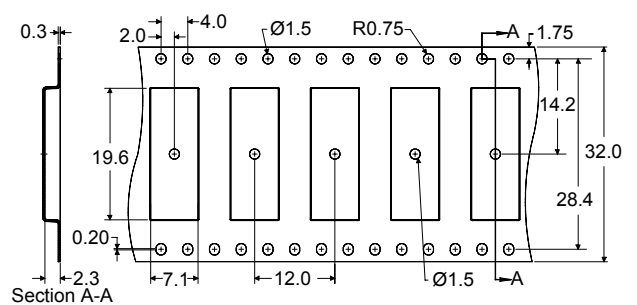
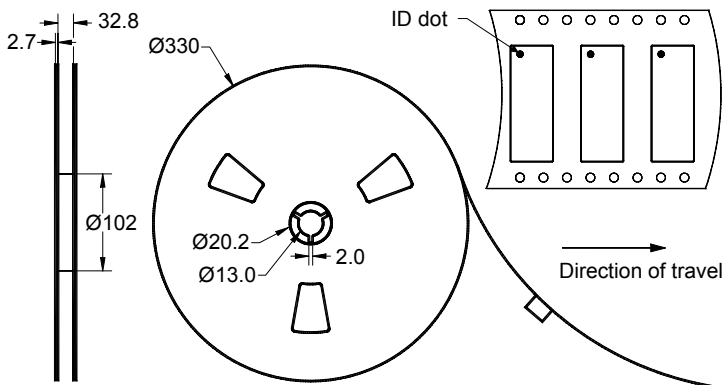
The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

**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: 2000 units/reel

# Preliminary Data Sheet

## Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-10	+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](#)

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](#)