
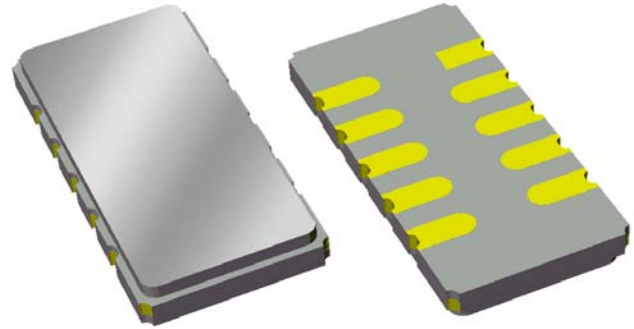


# Preliminary Data Sheet

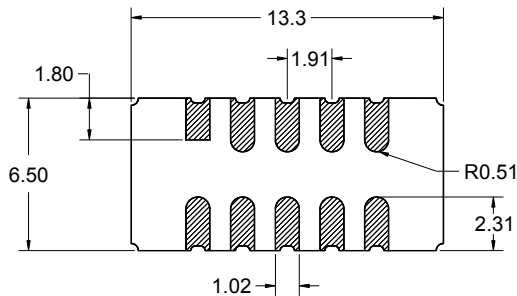
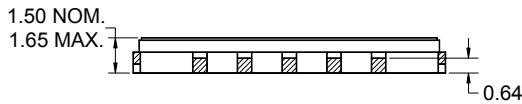
## Features

- For broadband applications
- Typical 3 dB bandwidth of 14.1 MHz
- High attenuation
- No impedance matching required for operation at 50 Ω
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Replaces Sawtek P/N 851925 (BW 3dB=14 MHz)
- Hermetic
- RoHS compliant (2002/95/EC), Pb-free 



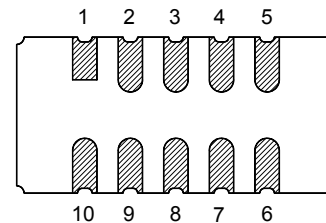
## Package

Surface Mount 13.30 x 6.50 x 1.50 mm



## Pin Configuration

Bottom View



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

Dimensions shown are nominal in millimeters  
 All tolerances are ±0.15mm except overall  
 length and width ±0.10mm

Body:  $Al_2O_3$  ceramic  
 Lid: Kovar, Ni plated  
 Terminations: Au plating 0.5 - 1.0µm,  
 over a 2 - 6µm Ni plating

# Preliminary Data Sheet

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

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

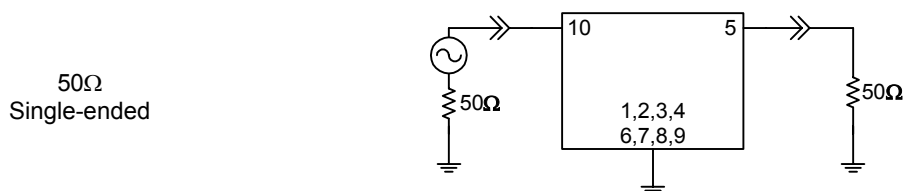
Parameter <sup>(3)</sup>	Minimum	Typical	Maximum	Unit
<b>Center Frequency</b>	-	140	-	MHz
<b>Minimum Insertion Loss</b>	-	23.3	24.5	dB
<b>Lower 1 dB Bandedge</b> <sup>(4)</sup>	-	133.26	134.11	MHz
<b>Upper 1 dB Bandedge</b>	145.89	146.67	-	MHz
<b>Lower 3 dB Bandedge</b> <sup>(4)</sup>	-	132.93	133.77	MHz
<b>Upper 3 dB Bandedge</b>	146.23	147.00	-	MHz
<b>Lower 40 dB Bandedge</b> <sup>(4)</sup>	130.87	131.58	-	MHz
<b>Upper 40 dB Bandedge</b>	-	148.33	149.13	MHz
<b>Amplitude Variation</b> 134.11 - 145.89 MHz	-	0.31	0.70	dB
<b>Phase Linearity</b> 134.11 - 145.89 MHz	-	2.06	6.00	deg
<b>Group Delay Variation</b> 134.11 - 145.89 MHz	-	27	55	nsec
<b>Absolute Delay</b>	-	1.50	-	μsec
<b>Relative Attenuation</b> <sup>(4)</sup>				
15 - 50 MHz	42	49	-	dB
50 - 127 MHz	48	55	-	dB
156 - 240 MHz	48	53	-	dB
240 - 290 MHz	43	49	-	dB
290 - 310 MHz	42	48	-	dB
310 - 350 MHz	44	48	-	dB
<b>Source Impedance</b> <sup>(5)</sup>	-	50	-	Ω
<b>Load Impedance</b> <sup>(5)</sup>	-	50	-	Ω
<b>Substrate Material</b>	-	YZ LiNbO <sub>3</sub>	-	-
<b>Temperature Coefficient of Frequency</b>	-	-94	-	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 attenuation measurements are measured relative to minimum insertion loss
5. This is the optimum impedance in order to achieve the performance shown

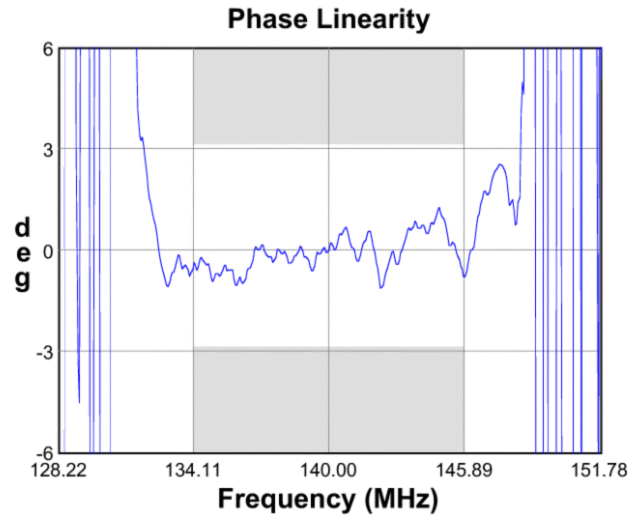
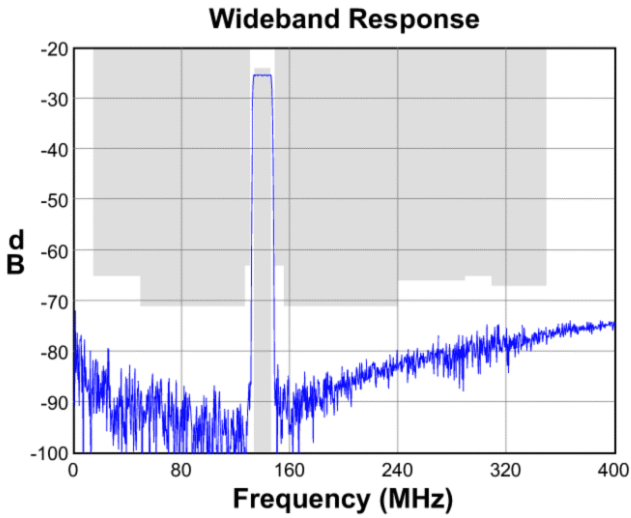
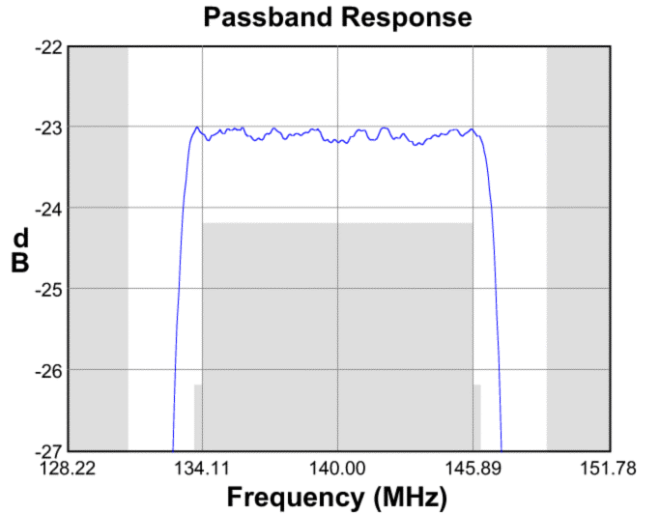
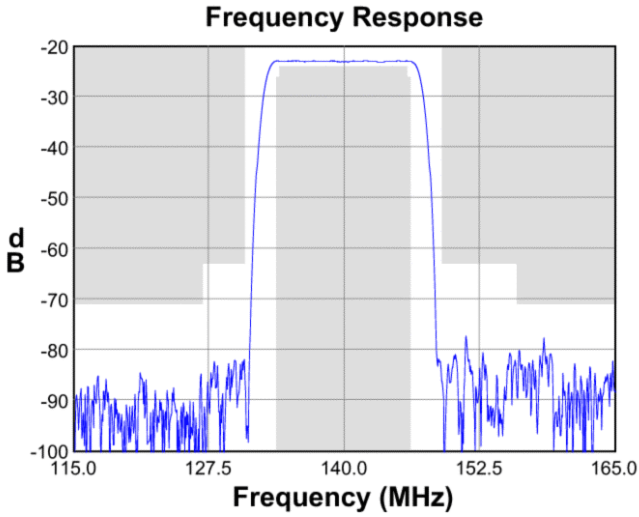
### Test Circuit:

Actual matching values may vary due to PCB layout and parasitics

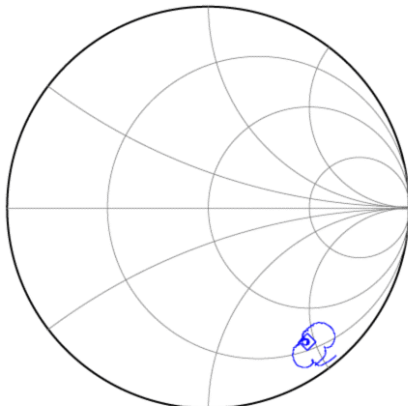


**Preliminary Data Sheet**

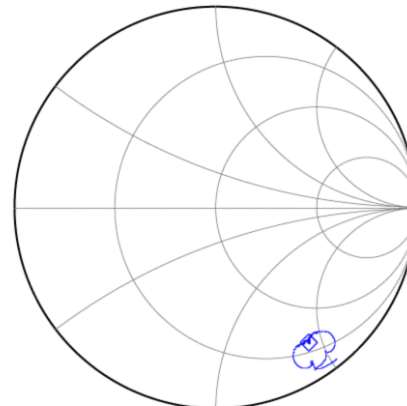
**Typical Performance (at +25°C)**



**Input Smith Chart**



**Output Smith Chart**

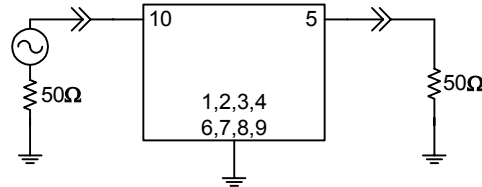


**Preliminary Data Sheet**

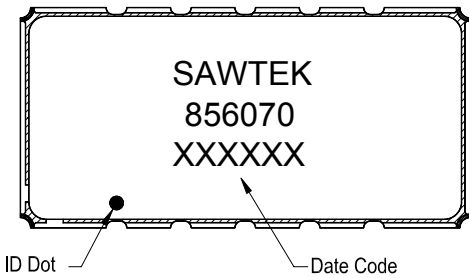
**Matching Schematics**

Actual matching values may vary due to PCB layout and parasitics

50Ω  
Single-ended

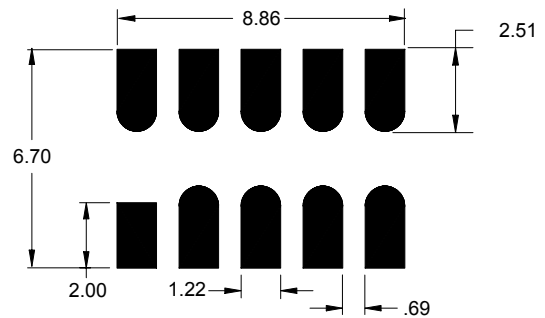


**Marking**



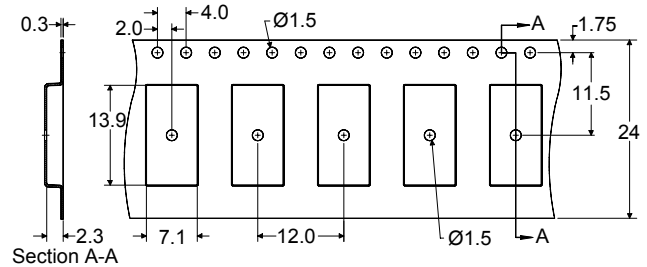
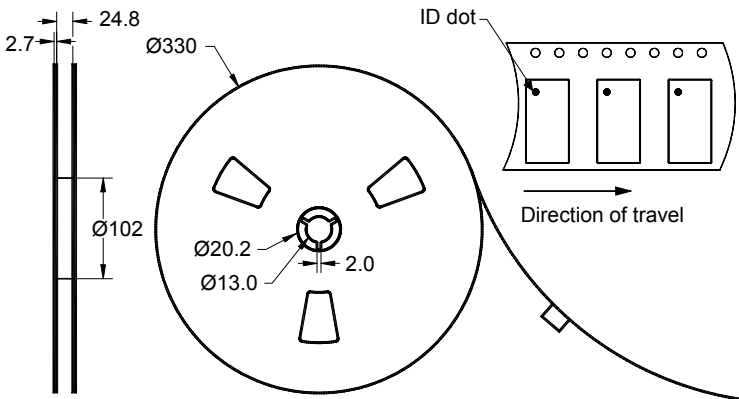
The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

**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	Typical	Maximum	Unit
Operating Temperature Range	T	0	+25	+70	°C
Storage Temperature Range	T <sub>stg</sub>	-40	-	+85	°C

## Important Notes

### Warnings

- Electrostatic Sensitive Device (ESD) 
- Avoid ultrasonic exposure

### RoHS Compliance

- This product complies with EU directive 2002/95/EC (RoHS) 

### Solderability

- Compatible with JEDEC J-STD-020C **Pb**-free process, **260°C** peak reflow temperature ([see soldering profile](#))

## Links to Additional Technical Information

[PCB Layout Tips](#)

[Qualification Flowchart](#)

[Soldering Profile](#)

[S-Parameters](#)

[RoHS Information](#)

[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)

Or contact one of our worldwide  
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[representatives or distributors](#)