



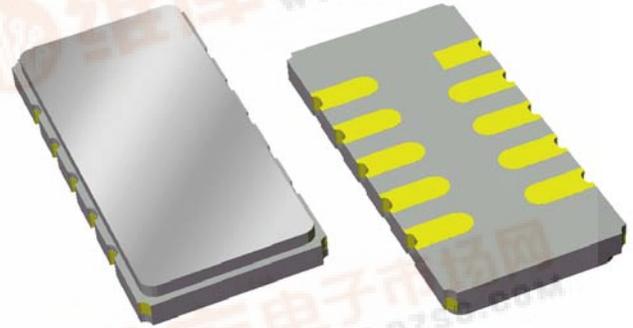
Part Number 856071

140 MHz SAW Filter

Data Sheet

Features

- For broadband applications
- Typical 3 dB bandwidth of 16.2 MHz
- High attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Small size
- Replaces Sawtek P/N 851927 (BW 3dB=16 MHz)

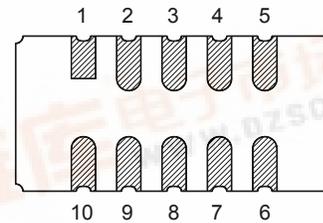
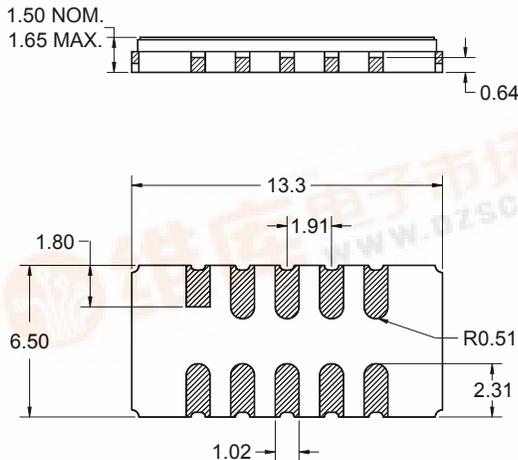


Package

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 $\pm 0.15\text{mm}$ except overall
 length and width $\pm 0.10\text{mm}$

Body: Al_2O_3 ceramic

Lid: Kovar, Ni plated

Terminations: Au plating 0.5 - 1.0 μm ,
 over a 2 - 6 μm Ni plating



Data Sheet

Electrical Specifications ⁽¹⁾

Operating Temperature Range: ⁽²⁾ 0 to +70 °C

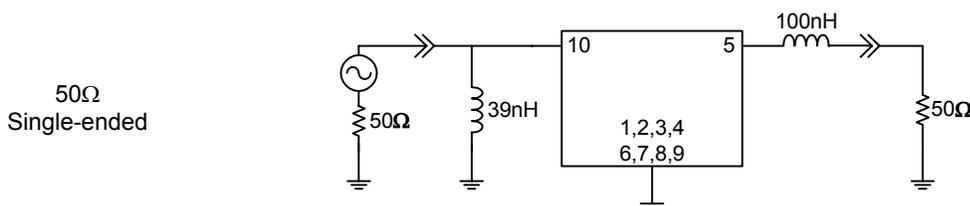
Parameter ⁽³⁾	Minimum	Typical	Maximum	Unit
Center Frequency	-	140	-	MHz
Minimum Insertion Loss	-	21.7	22.5	dB
Lower 1 dB Bandedge ⁽⁴⁾	-	132.32	133.01	MHz
Upper 1 dB Bandedge	146.99	147.77	-	MHz
Lower 3 dB Bandedge ⁽⁴⁾	-	131.93	132.6	MHz
Upper 3 dB Bandedge	147.4	148.14	-	MHz
Lower 40 dB Bandedge ⁽⁴⁾	129.656	130.33	-	MHz
Upper 40 dB Bandedge	-	149.67	150.344	MHz
Amplitude Variation 133.01 - 146.99 MHz	-	0.44	0.87	dB
Phase Linearity 133.01 - 146.99 MHz	-	2.99	5.67	deg
Group Delay Variation 133.01 - 146.99 MHz	-	30	52	nsec
Absolute Delay	-	1.09	-	μsec
Relative Attenuation ⁽⁴⁾				
15 - 100 MHz	53	58	-	dB
100 - 125 MHz	49.5	53	-	dB
155 - 175 MHz	46	50	-	dB
175 - 270 MHz	47.5	55	-	dB
270 - 280 MHz	38	46	-	dB
280 - 350 MHz	49	57	-	dB
Source Impedance ⁽⁵⁾	-	50	-	Ω
Load Impedance ⁽⁵⁾	-	50	-	Ω
Substrate Material	-	YZ LiNbO ₃	-	-
Temperature Coefficient of Frequency	-	-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

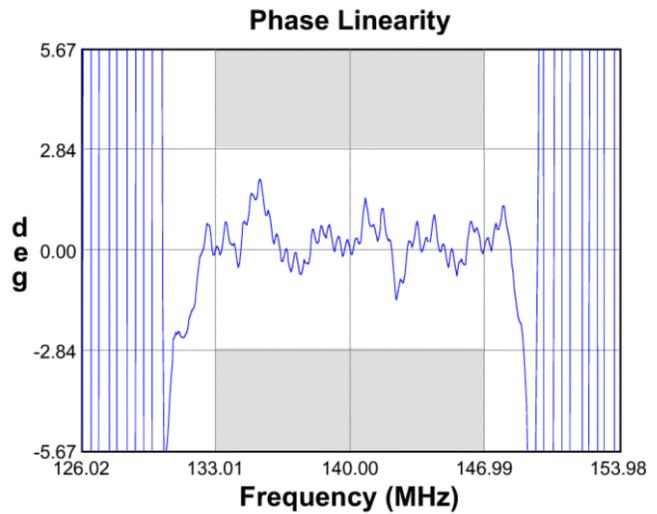
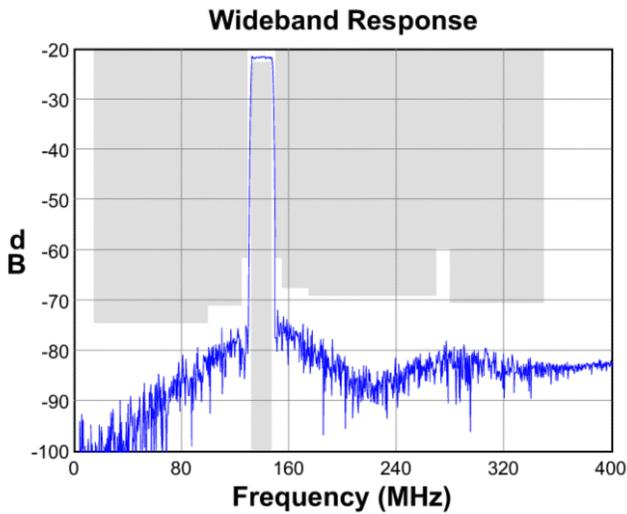
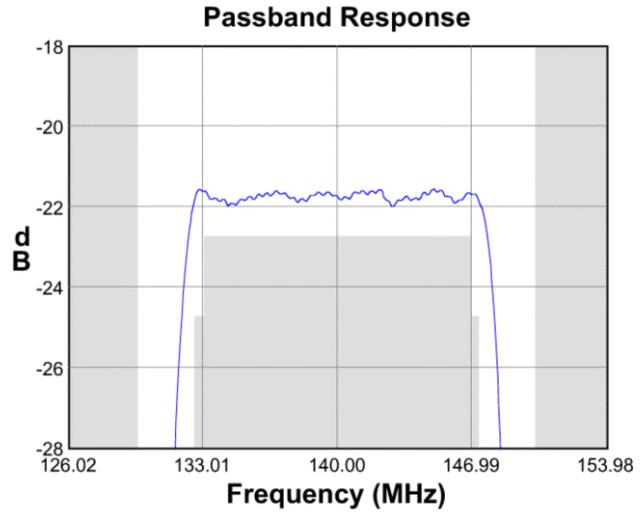
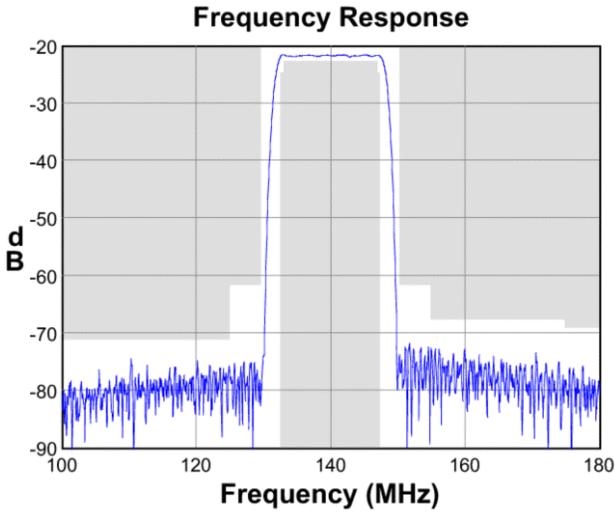
Test Circuit:

Actual matching values may vary due to PCB layout and parasitics

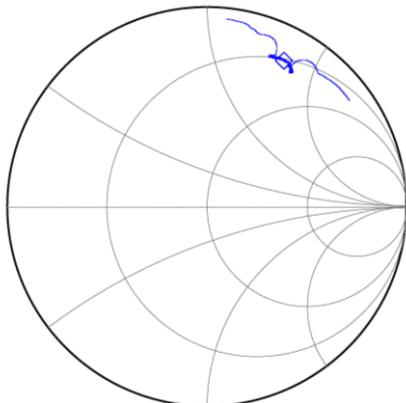


Data Sheet

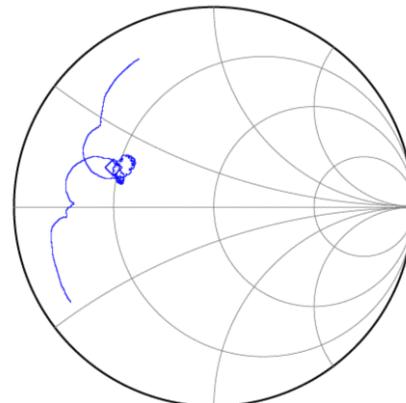
Typical Performance (at +25°C)



Input Smith Chart



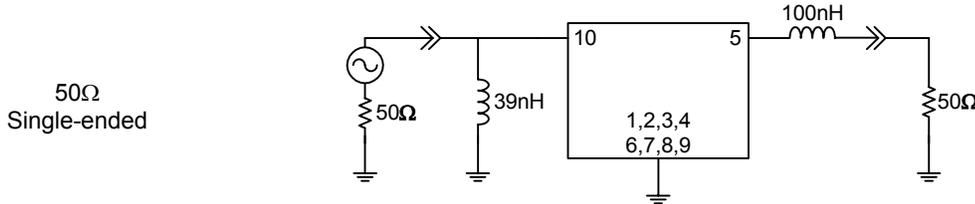
Output Smith Chart



Data Sheet

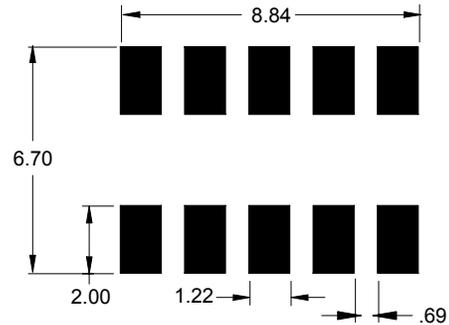
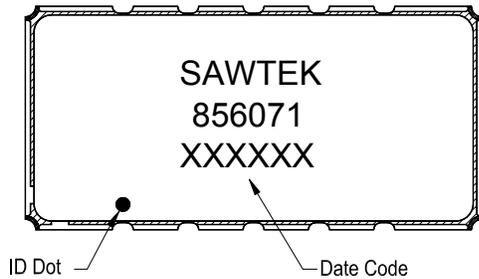
Matching Schematics

Actual matching values may vary due to PCB layout and parasitics



Marking

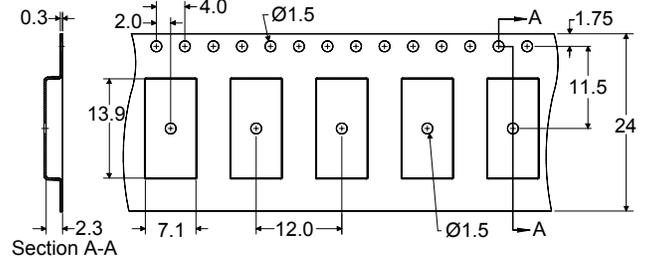
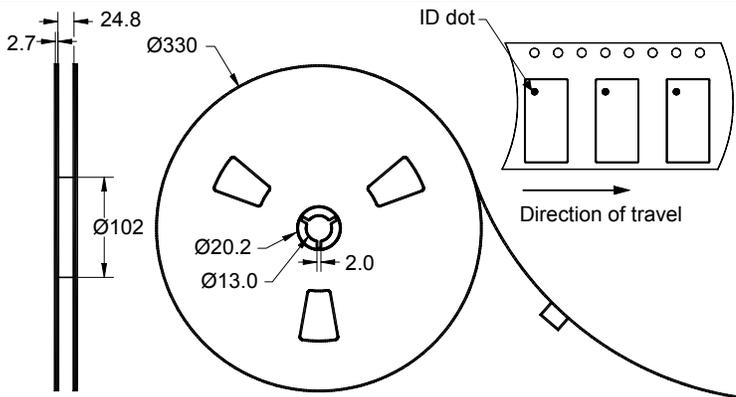
PCB Footprint



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

Data Sheet

Maximum Ratings

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Operating Temperature Range	T	0	+25	+70	°C
Storage Temperature Range	T _{stg}	-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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