

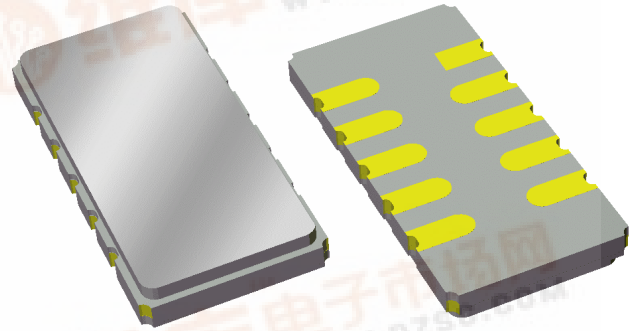


Part Number 856068
140 MHz SAW Filter

Preliminary Data Sheet

Features

- For broadband applications
- Typical 3 dB bandwidth of 8.2 MHz
- High attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Small size
- Replaces Sawtek P/N 851917 (BW 3dB=8 MHz)

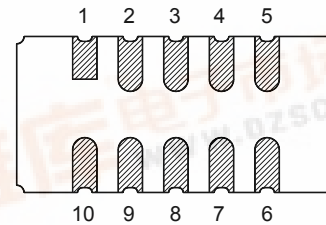
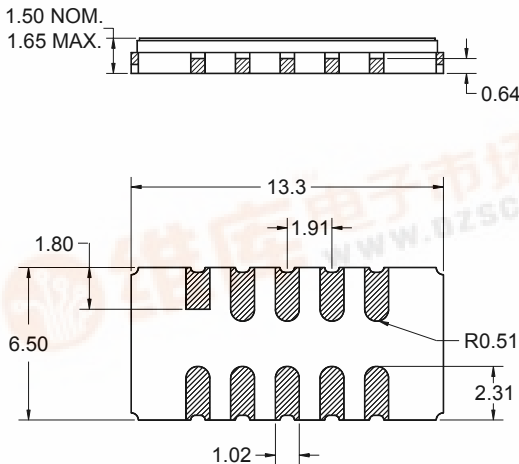


Package

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



Preliminary Data Sheet

Electrical Specifications ⁽¹⁾

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

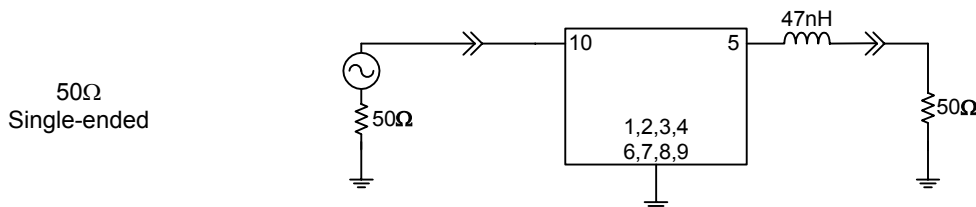
Parameter ⁽³⁾	Minimum	Typical	Maximum	Unit
Center Frequency	-	140	-	MHz
Minimum Insertion Loss	-	23.4	24.6	dB
Lower 1 dB Bandedge ⁽⁴⁾	-	136.14	136.855	MHz
Upper 1 dB Bandedge	143.145	143.89	-	MHz
Lower 3 dB Bandedge ⁽⁴⁾	-	135.92	136.595	MHz
Upper 3 dB Bandedge	143.405	144.13	-	MHz
Lower 40 dB Bandedge ⁽⁴⁾	134.362	135.05	-	MHz
Upper 40 dB Bandedge	-	145.01	145.638	MHz
Amplitude Variation 136.855 - 143.145 MHz	-	0.44	0.83	dB
Phase Linearity 136.855 - 143.145 MHz	-	4	7.12	deg
Group Delay Variation 136.855 - 143.145 MHz	-	54	105	nsec
Absolute Delay	-	1.63	-	μsec
Relative Attenuation ⁽⁴⁾				
30 - 75 MHz	36.5	47	-	dB
75 - 130 MHz	43.5	50	-	dB
150 - 175 MHz	41.5	49	-	dB
175 - 275 MHz	49	55	-	dB
275 - 315 MHz	46.5	54	-	dB
315 - 350 MHz	48.5	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:

- All specifications are based on the test circuit shown below
- In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
- Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
- All attenuation measurements are measured relative to minimum insertion loss
- This is the optimum impedance in order to achieve the performance shown

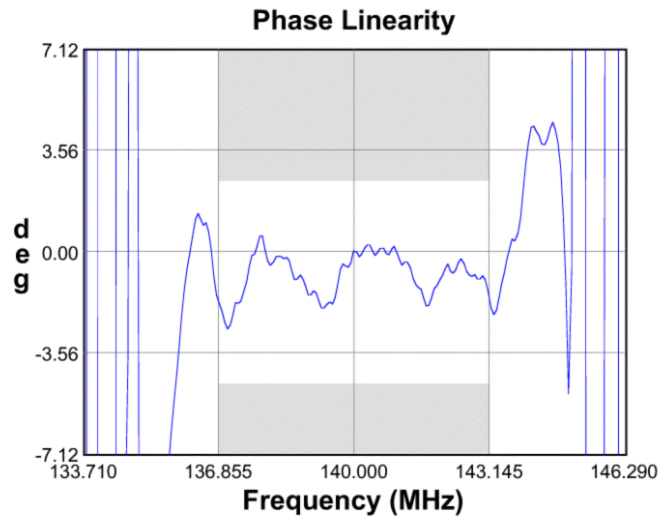
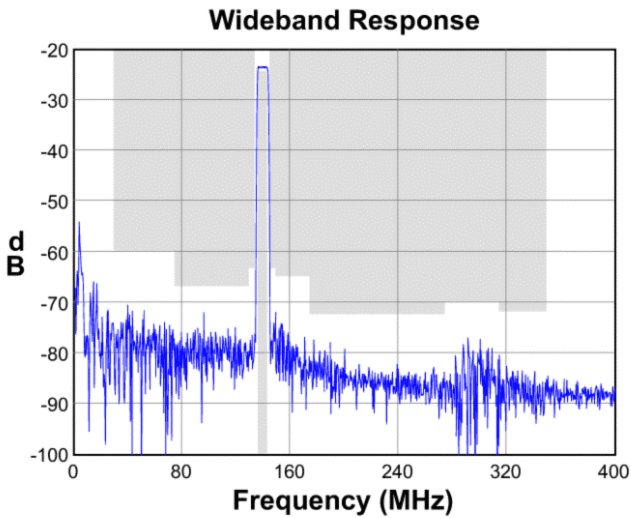
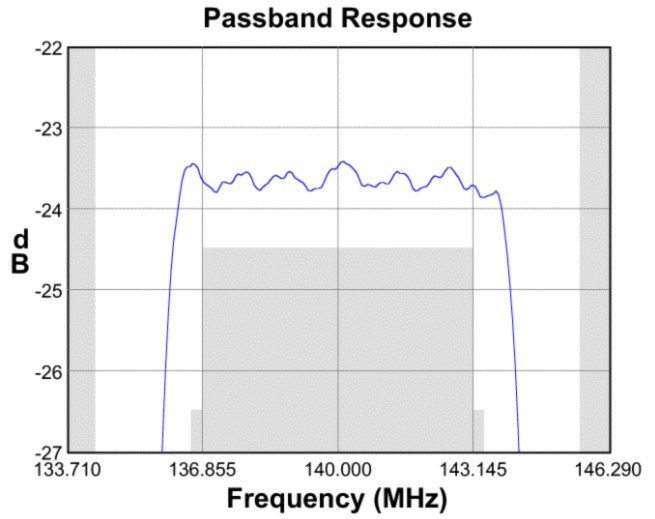
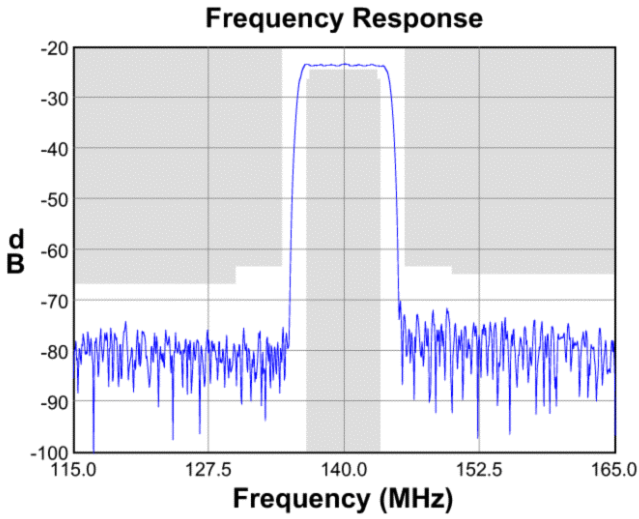
Test Circuit:

Actual matching values may vary due to PCB layout and parasitics

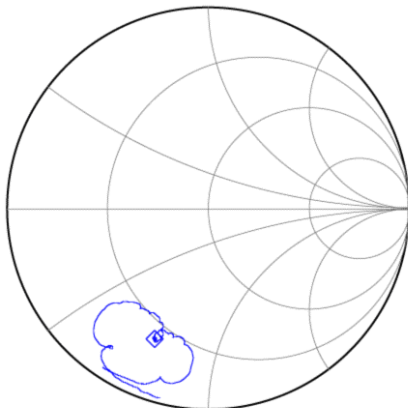


Preliminary Data Sheet

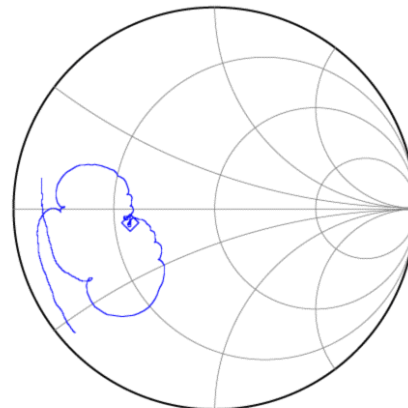
Typical Performance (at +25°C)



Input Smith Chart



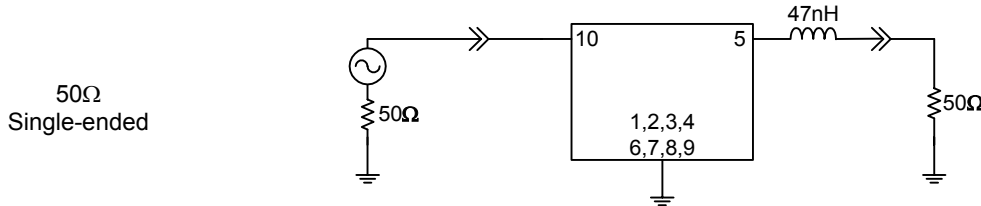
Output Smith Chart



Preliminary Data Sheet

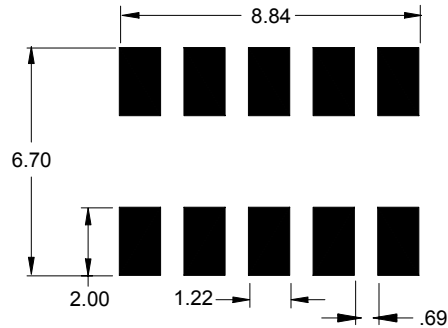
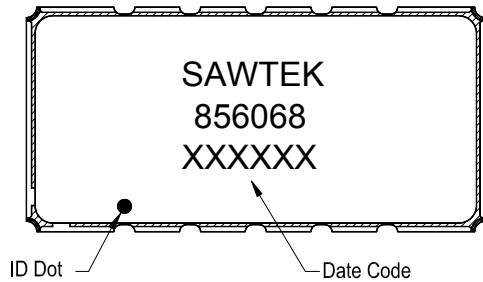
Matching Schematics

Actual matching values may vary due to PCB layout and parasitics



Marking

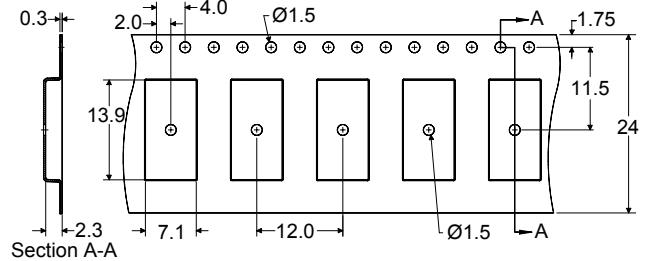
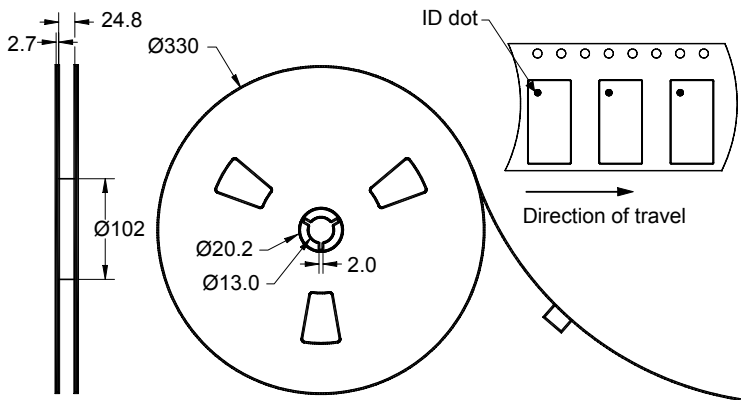
PCB Footprint



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	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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