



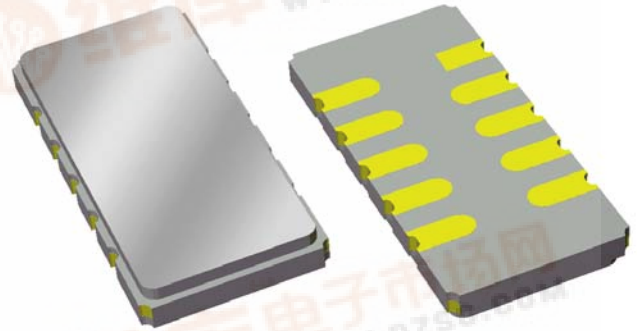
Part Number 856069

140 MHz SAW Filter

Data Sheet

Features

- For broadband applications
- Typical 3 dB bandwidth of 10 MHz
- High attenuation
- No impedance matching required for operation at 50 Ω
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Small size
- Replaces Sawtek P/N 851921 (BW 3dB=10 MHz)

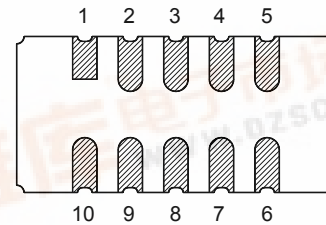
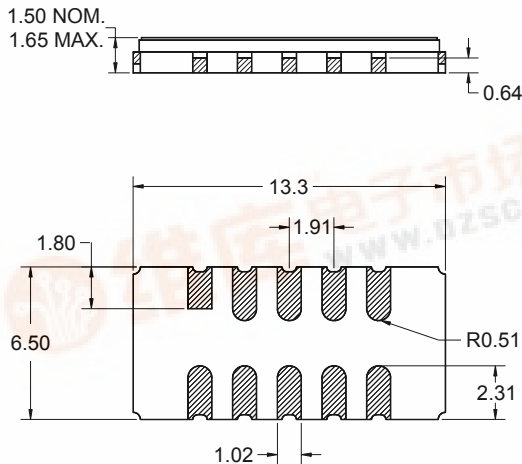


Package

Surface Mount 13.3 x 6.50 x 1.50 mm

Pin Configuration

Bottom View



Pin No.	Description
1	Input return
5	Output
6	Output return
10	Input
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



Data Sheet

Electrical Specifications ⁽¹⁾

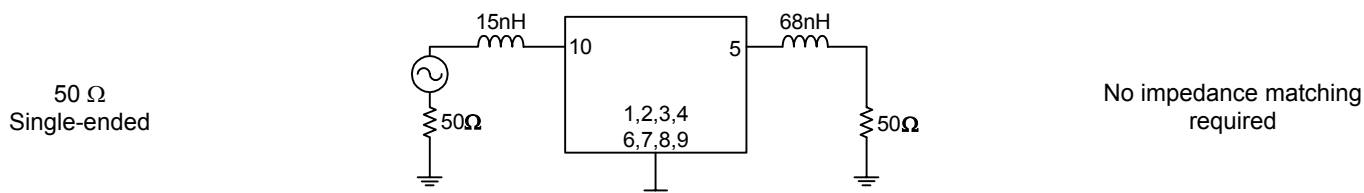
Operating Temperature Range: ⁽²⁾ -30 to +85 °C

Parameter ⁽³⁾	Minimum	Typical	Maximum	Unit
Center Frequency	-	140	-	MHz
Minimum Insertion Loss	-	20.87	21.7	dB
Lower 1 dB Bandedge ⁽⁴⁾	-	135.38	135.524	MHz
Upper 1 dB Bandedge	144.508	144.79	-	MHz
Lower 3 dB Bandedge ⁽⁴⁾	-	135.00	135	MHz
Upper 3 dB Bandedge	145	145.24	-	MHz
Lower 40 dB Bandedge ⁽⁴⁾	133.379	133.85	-	MHz
Upper 40 dB Bandedge	-	146.72	146.551	MHz
Amplitude Variation 135.524 - 144.508 MHz	-	0.7	0.94	dB
Phase Linearity 135.524 - 144.508 MHz	-	5	6.31	deg
Group Delay Variation 135.524 - 144.508 MHz	-	45	57.3	nsec
Absolute Delay	-	1.52	-	µsec
Relative Attenuation ⁽⁴⁾				
15 - 130 MHz	47.8	50	-	dB
130 - 133 MHz	52	57	-	dB
147 - 150 MHz	50.6	53	-	dB
150 - 350 MHz	51.3	53	-	dB
Source Impedance ⁽⁵⁾	-	50	-	Ω
Load Impedance ⁽⁵⁾	-	50	-	Ω
Substrate Material	-	LINbO ₃	-	-
Temperature Coefficient of Frequency	-	-94	-	ppm/°C

Notes:

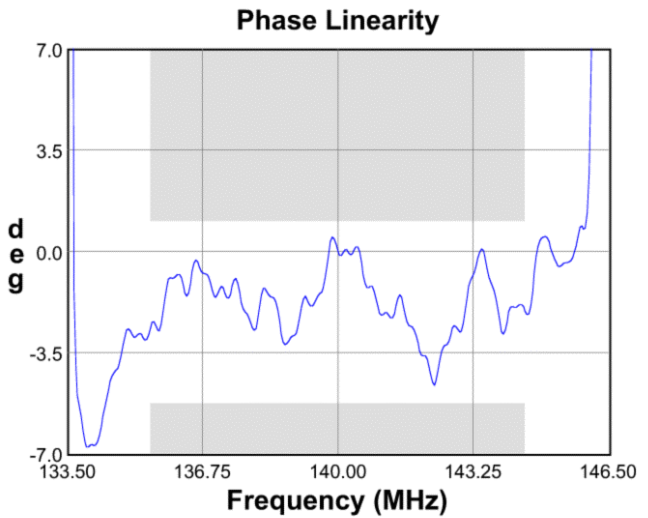
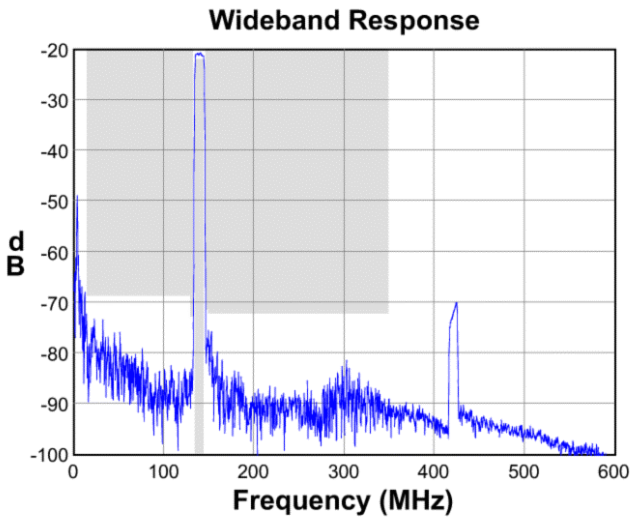
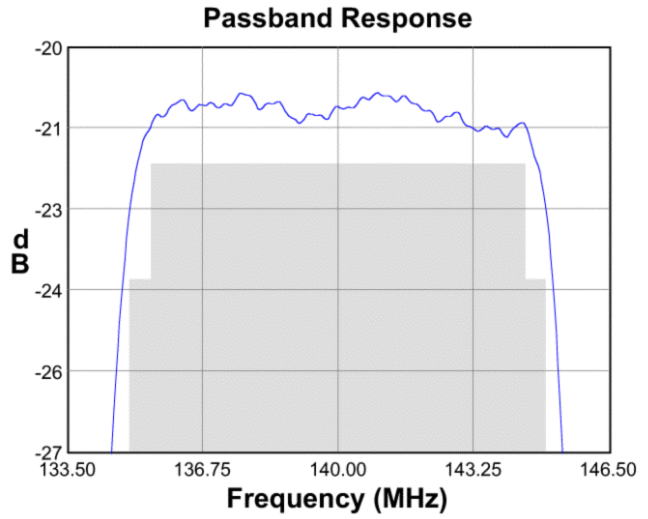
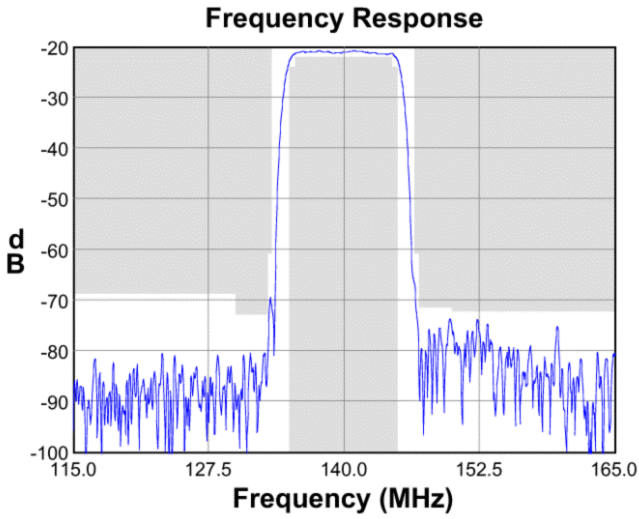
1. All specifications are based on the test circuit shown below
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to temperature 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:

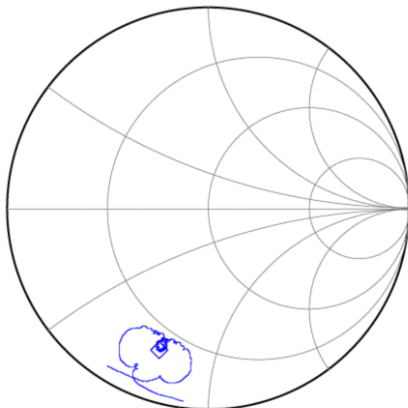


Data Sheet

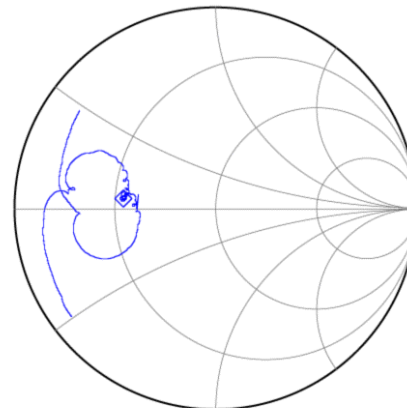
Typical Performance (at +25°C)



Input Smith Chart



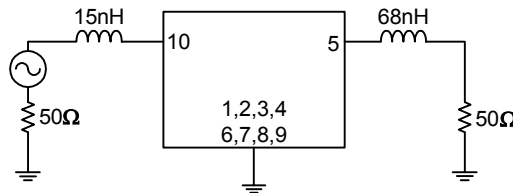
Output Smith Chart



Data Sheet

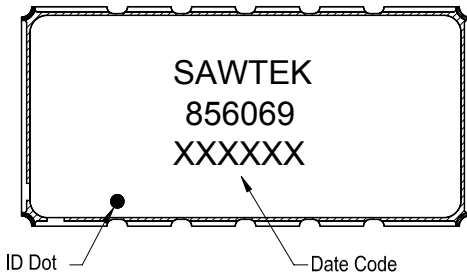
Matching Schematics

50 Ω
Single-ended

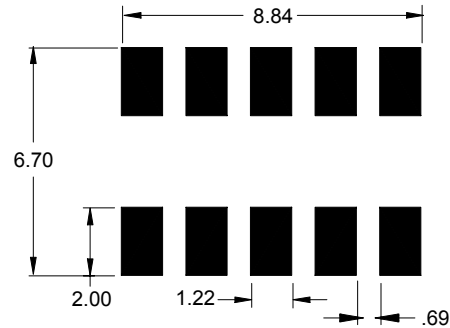


No impedance matching required

Marking **PCB Footprint**

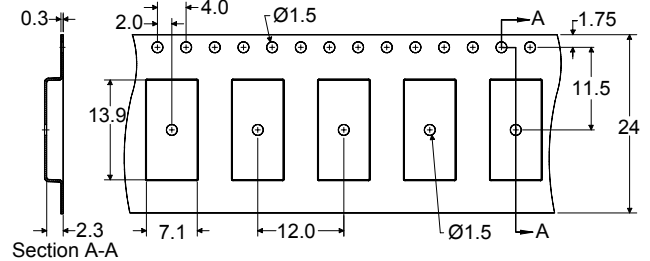
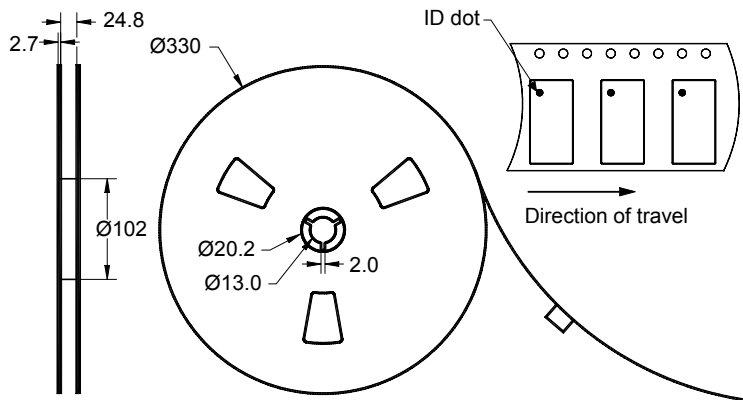


The date code consists of: JJJ = Julian day,
Y = last digit of year, M = manufacturing site code



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	Maximum	Unit
Operating Temperature Range	T	-30	+85	°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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