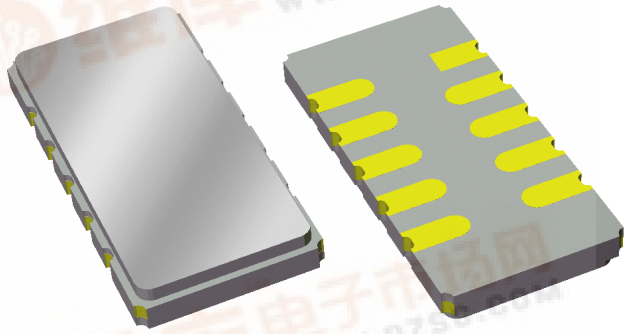
SAWTEK a TriQuint company

Preliminary Data Sheet

Part Number 856066
140 MHz SAW Filter

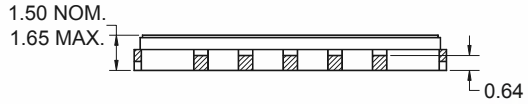
Features

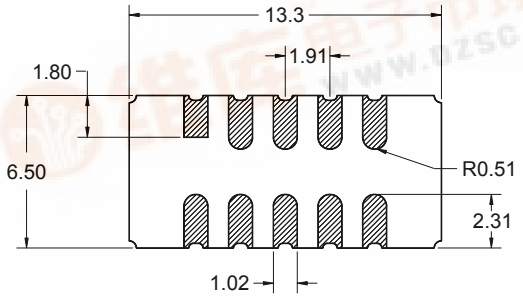
- For broadband applications
- Typical 3 dB bandwidth of 6.2 MHz
- High attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Small size
- Replaces Sawtek P/N 851913 (BW 3dB=6.0 MHz)



Package

Surface Mount 13.30 x 6.50 x 1.50 mm



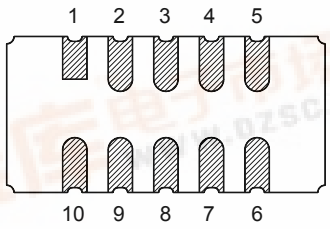


Dimensions shown are nominal in millimeters
All tolerances are ±0.15mm except overall length and width ±0.10mm

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

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

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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	24.5	dB
Lower 1 dB Bandedge [4]	-	137.1	137.28	MHz
Upper 1 dB Bandedge	142.72	142.9	-	MHz
Lower 3 dB Bandedge [4]	-	136.9	137	MHz
Upper 3 dB Bandedge	143	143.1	-	MHz
Lower 40 dB Bandedge [4]	135.83	136	-	MHz
Upper 40 dB Bandedge	-	144	144.17	MHz
Amplitude Variation 137.28 - 142.72 MHz	-	0.5	0.9	dB
Phase Linearity 137.28 - 142.72 MHz	-	2.0	3.0	deg
Group Delay Variation 137.28 - 142.72 MHz	-	45	70	nsec
Absolute Delay	-	1.6	-	µsec
Relative Attenuation [4]				
15 - 135 MHz	50	60	-	dB
145 - 350 MHz	50	60	-	dB
Source Impedance [5]	-	50	-	Ω
Load Impedance [5]	-	50	-	Ω
Substrate Material	-	$LiTaO_3$	-	-
Temperature Coefficient of Frequency	-	-23	-	ppm/°C

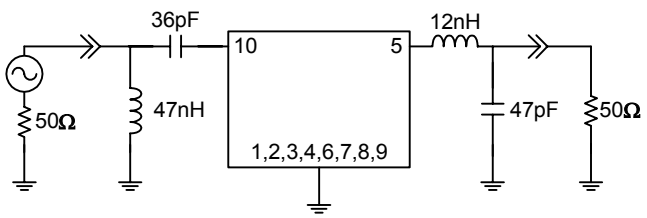
Notes:

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

50Ω
Single-ended



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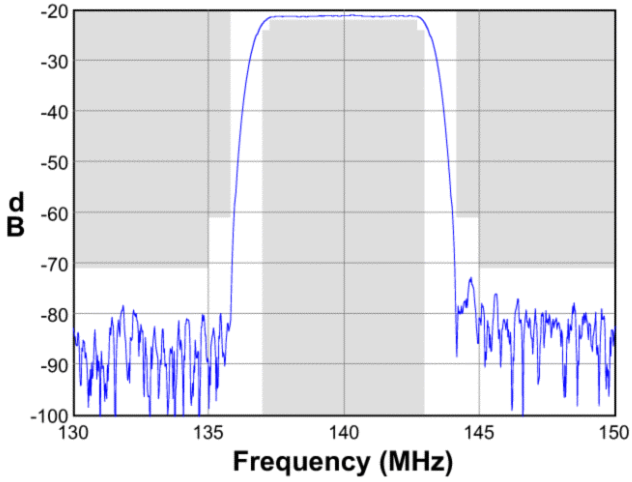
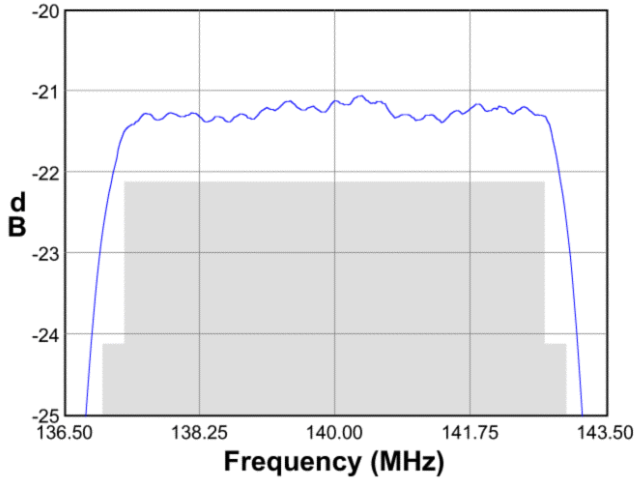
140 MHz SAW Filter

Typical Performance (at +25°C)

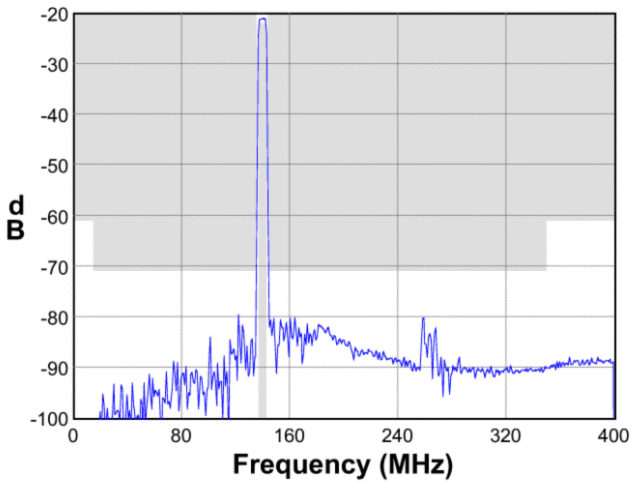
Frequency Response



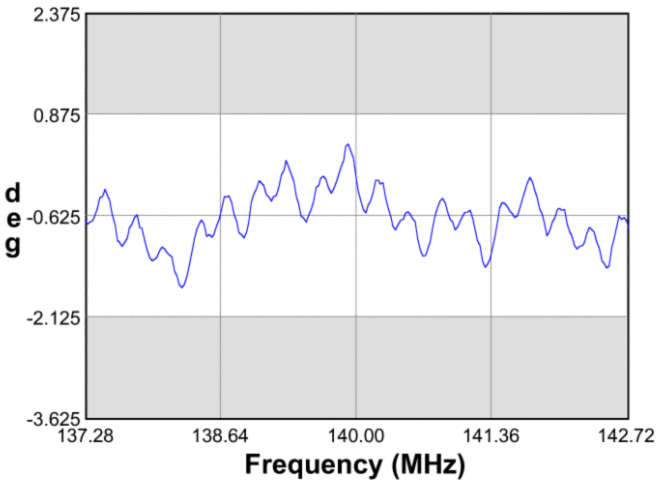
Passband Response



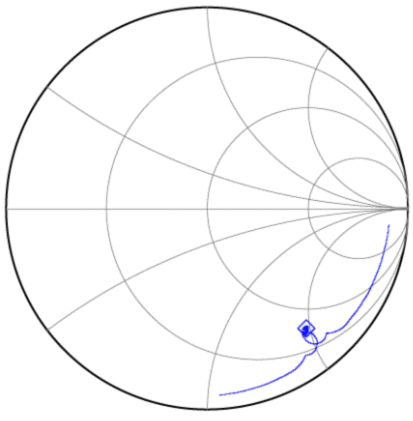
Wideband Response



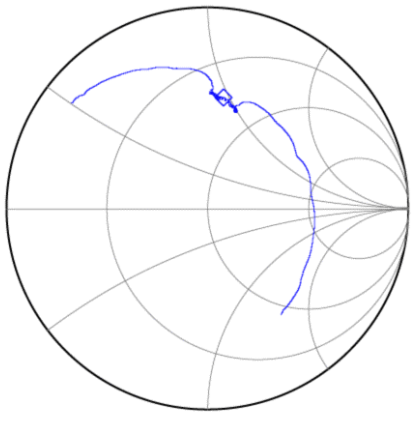
Phase Linearity



Input Smith Chart



Output Smith Chart



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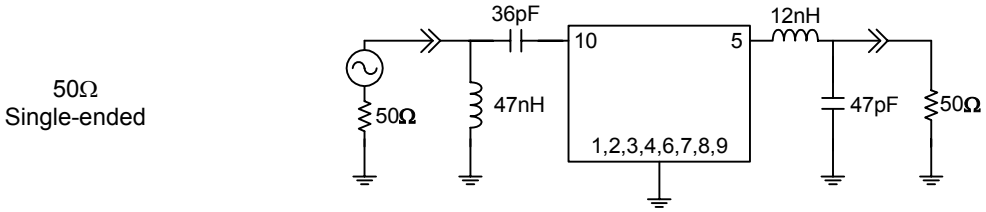
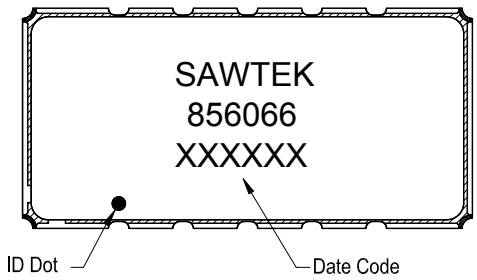
Matching Schematics

Actual matching values may vary due to PCB layout and parasitics

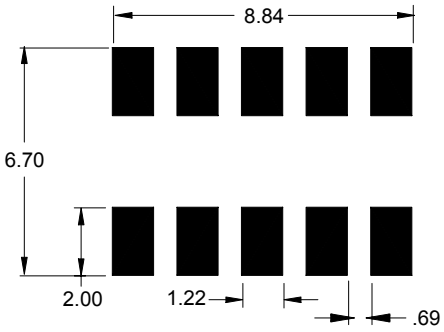


Marking



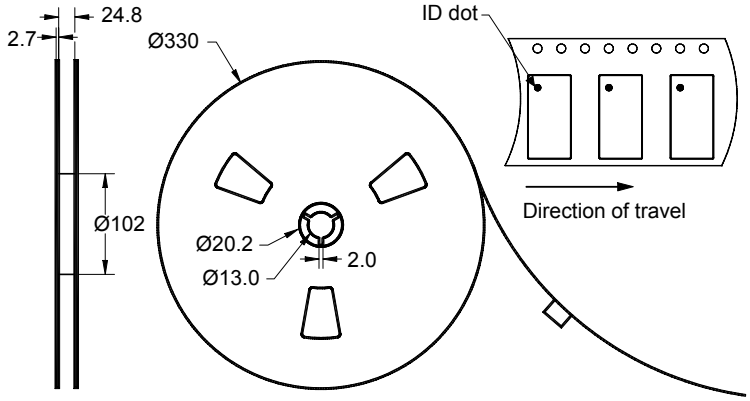
The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

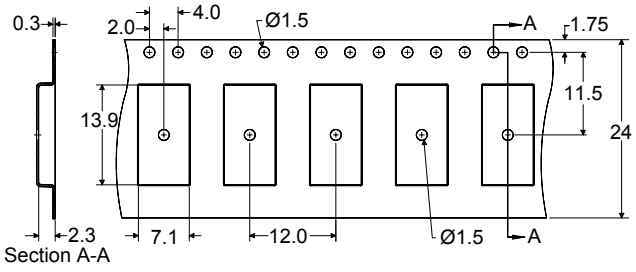
PCB Footprint



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

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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

Contact Information

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Or contact one of our worldwide network of sales offices, representatives or distributors