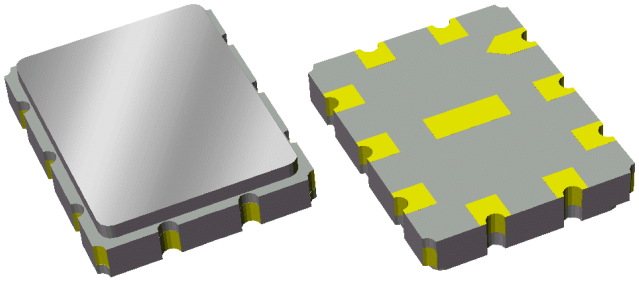
SAWTEK a TriQuint company

Preliminary Data Sheet

Part Number 856019
140 MHz SAW Filter

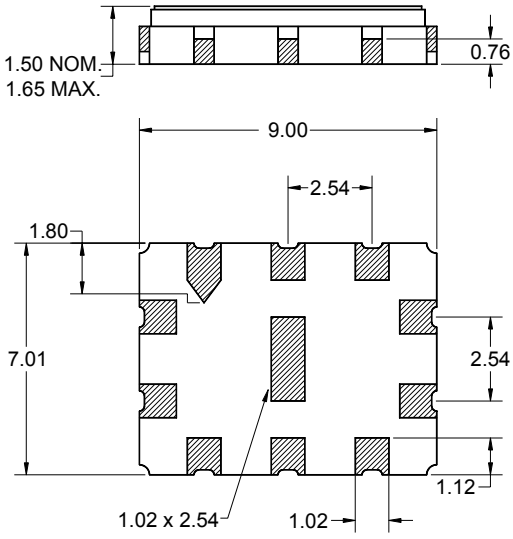
Features

- For broadband applications
- Typical 3 dB bandwidth of 28.5 MHz
- High attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Small size
- Replaces Sawtek P/N 851935



Package

Surface Mount 9.00 x 7.01 x 1.50 mm

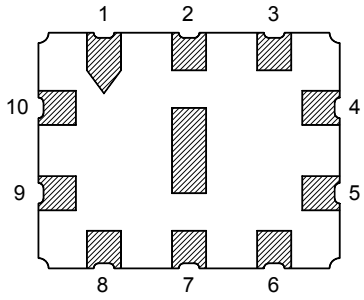


Dimensions shown are nominal in millimeters
All tolerances are ±0.15mm except overall length and width +0.10mm/-0.15mm

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
4	Output
5	Output return
9	Input
10	Input return
1,2,3,6,7,8	Case ground

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Electrical Specifications [1]

Operating Temperature Range: [2] 0 to +70 °C

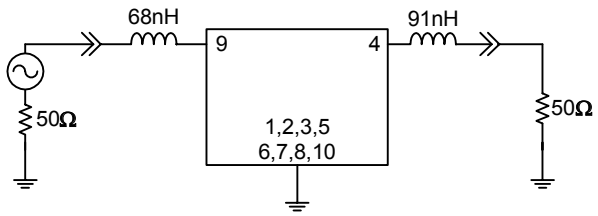
Parameter [3]	Minimum	Typical	Maximum	Unit
Center Frequency	-	140	-	MHz
Maximum Insertion Loss	-	20	21	dB
Lower 1 dB Bandedge [4]	-	126.45	127.2	MHz
Upper 1 dB Bandedge	152.8	153.75	-	
Lower 3 dB Bandedge [4]	-	125.53	126.3	MHz
Upper 3 dB Bandedge	153.7	154.46	-	
Lower 40 dB Bandedge [4]	121.5	122.45	-	MHz
Upper 40 dB Bandedge	-	157.41	158.5	
Amplitude Variation				
127.2 - 152.8 MHz	-	0.7	1.0	dB p-p
Phase Linearity				
127.2 - 152.8 MHz	-	4.3	7	deg p-p
Group Delay Variation				
127.2 - 152.8 MHz	-	22	50	ns p-p
Absolute Delay	-	0.66	-	µsec
Relative Attenuation [4]				
15 - 90 MHz	45	50	-	dB
90 - 121.5 MHz	40	45	-	dB
158.5 - 190 MHz	37	43	-	dB
190 - 350 MHz	42	51	-	dB
Terminating Source Impedance [5]	-	50	-	Ω
Terminating Load Impedance [5]	-	50	-	Ω
Substrate Material	-	128 $LiNbO_3$	-	-
Temperature Coefficient of Frequency	-	-74	-	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 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

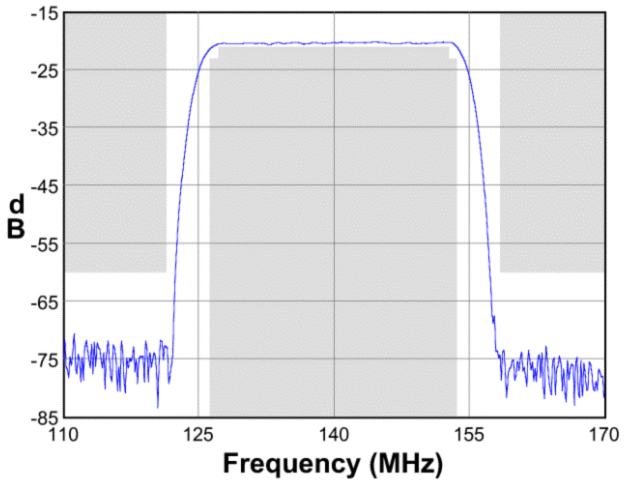
Test Circuit:

50 Ω
Single-ended

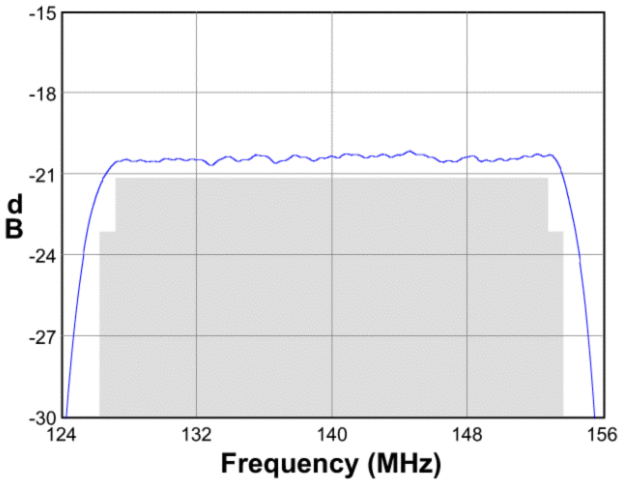


Typical Performance (at +25°C)

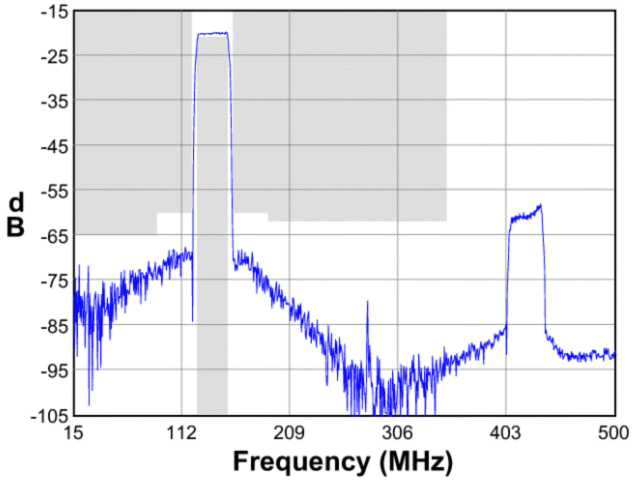
Frequency Response



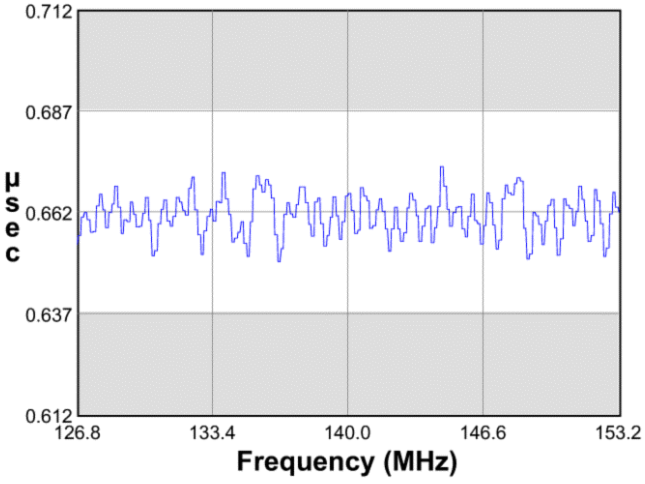
Passband Response



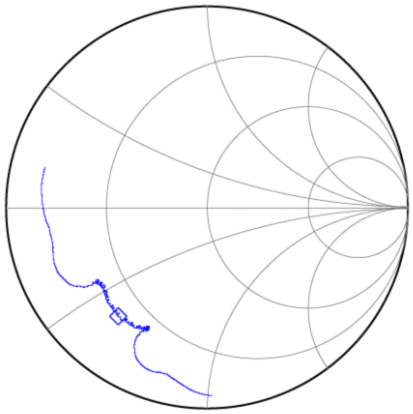
Phase Response



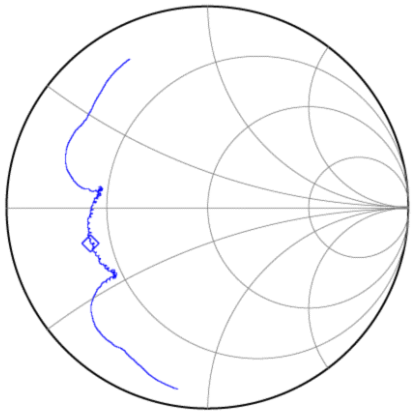
Group Delay Variation



Input Smith Chart

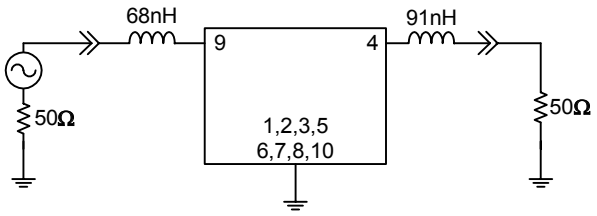


Output Smith Chart

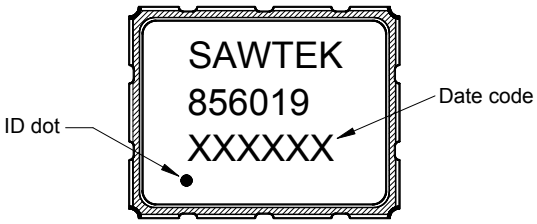


Matching Schematics

50 Ω
Single-ended

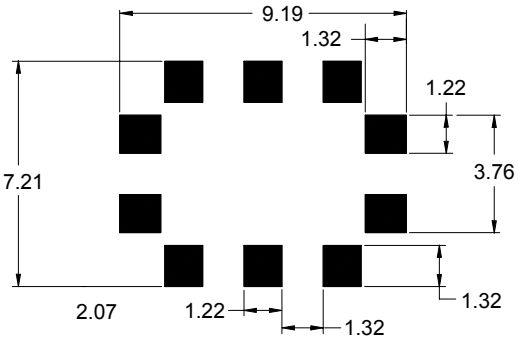


Marking



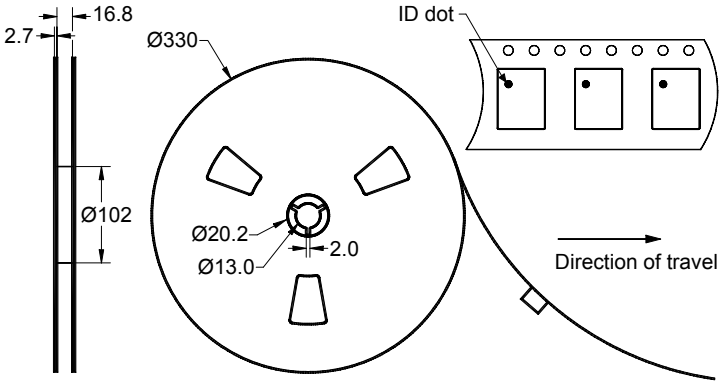
The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

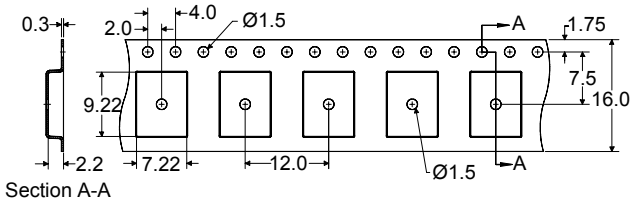
PCB Footprint



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

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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 | Reel and Packaging Label | Other Technical Information

Contact Information

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Or contact one of our worldwide Network of sales offices, Representatives or distributors