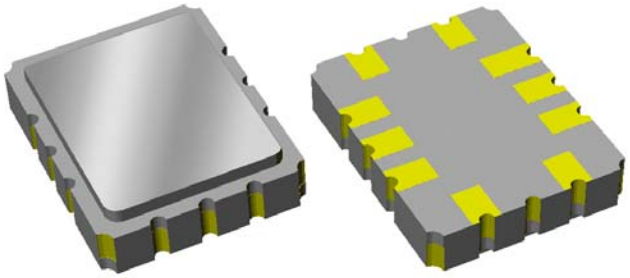
TriQuint SEMICONDUCTOR

Data Sheet

Part Number 856672
456 MHz SAW Filter

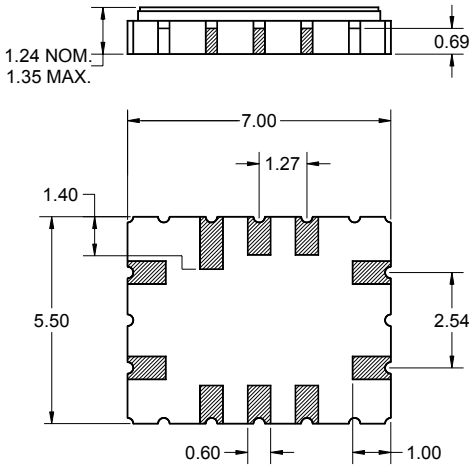
Features

- For WiBro and WiMAX applications
- Usable bandwidth 10 MHz
- High attenuation
- Balanced operation 200 Ω
- Ceramic Surface Mount Package (SMP)
- Hermetic
- RoHS compliant (2002/95/EC), Pb-free



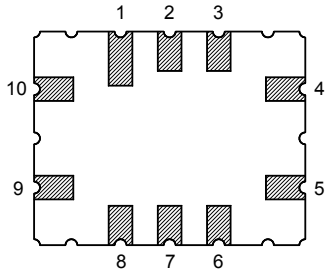
Package

Surface Mount 7.00 x 5.50 x 1.24 mm



Pin Configuration

Bottom View



Pin No.	Description
9	Input
10	Input return
4	Output
5	Output return
1,2,3	Case ground
6,7,8	Case ground

Dimensions shown are nominal in millimeters
All tolerances are ±0.15mm except overall length and width ±0.13mm

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

TriQuint SEMICONDUCTOR

Data Sheet

Part Number 856672
456 MHz SAW Filter

Electrical Specifications [1]

Operating Temperature Range: [2] -20 to +60 °C

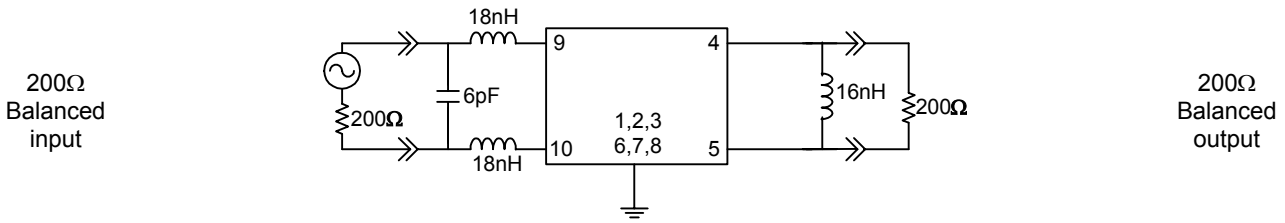
Parameter [3]	Minimum	Typical	Maximum	Unit
Center Frequency, f_0	-	456	-	MHz
Minimum Insertion Loss				
451 - 461 MHz	-	8.30	9.50	dB
Amplitude Variation				
451 - 461 MHz	-	0.45	1.00	dB
30 dB Bandwidth [3]	-	20.00	20.35	MHz
Relative Attenuation [3]				
10 - 256 MHz	45	70	-	dB
256 - 360 MHz	40	65	-	dB
360 - 421 MHz	45	50	-	dB
421 - 440 MHz	37	40	-	dB
472.4 - 491 MHz	39	42	-	dB
491 - 552 MHz	45	50	-	dB
552 - 656 MHz	40	55	-	dB
656 - 946 MHz	45	60	-	dB
Absolute Group Delay at Fo	-	0.49	0.51	µsec
Group Delay Variation				
451 - 461 MHz	-	30	65	ns
Input/Output Return Loss				
451 - 461 MHz	9	14	-	dB
Source Impedance (Balanced) [4]	-	200	-	Ω
Load Impedance (Balanced) [4]	-	200	-	Ω

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. Referenced to minimum insertion loss
4. This is the optimum impedance in order to achieve performance shown

Test Circuit:

Actual matching values may vary due to PCB layout and parasitics



TriQuint SEMICONDUCTOR

Data Sheet

Part Number 856672
456 MHz SAW Filter

Electrical Specifications [1]

Operating Temperature Range: [2] -40 to +85 °C

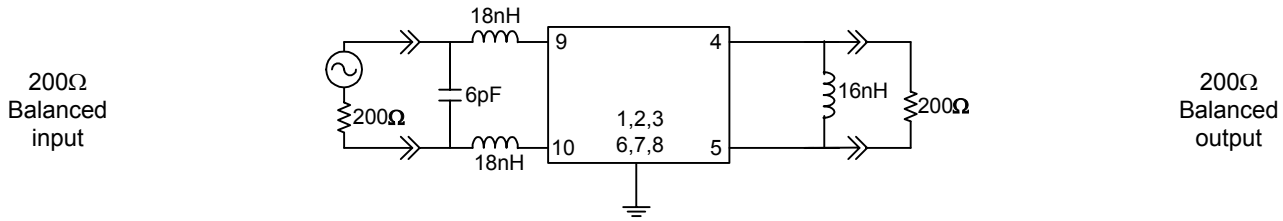
Parameter [3]	Minimum	Typical	Maximum	Unit
Center Frequency, f_0	-	456	-	MHz
Minimum Insertion Loss				
451 - 461 MHz	-	8.30	9.75	dB
Amplitude Variation				
451 - 461 MHz	-	0.45	1.25	dB
30 dB Bandwidth [3]	-	20.00	20.38	MHz
Relative Attenuation [3]				
10 - 256 MHz	45	70	-	dB
256 - 360 MHz	40	65	-	dB
360 - 421 MHz	45	50	-	dB
421 - 440 MHz	37	40	-	dB
472.4 - 491 MHz	39	42	-	dB
491 - 552 MHz	45	50	-	dB
552 - 656 MHz	40	55	-	dB
656 - 946 MHz	45	60	-	dB
Absolute Group Delay at Fo	-	0.49	0.51	µsec
Group Delay Variation				
451 - 461 MHz	-	30	75	ns
Input/Output Return Loss				
451 - 461 MHz	8	14	-	dB
Source Impedance (Balanced) [4]	-	200	-	Ω
Load Impedance (Balanced) [4]	-	200	-	Ω

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. Referenced to minimum insertion loss
4. This is the optimum impedance in order to achieve performance shown

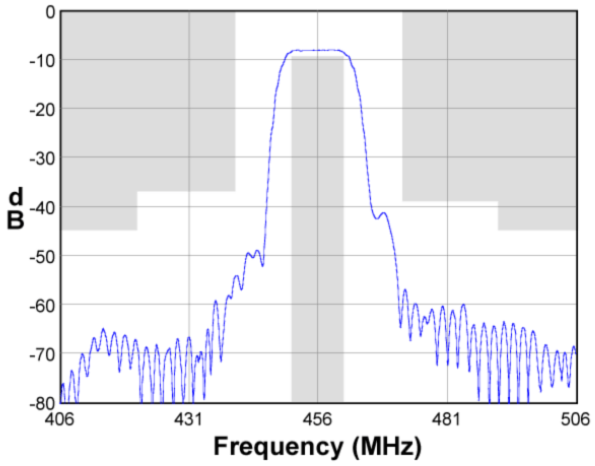
Test Circuit:

Actual matching values may vary due to PCB layout and parasitics

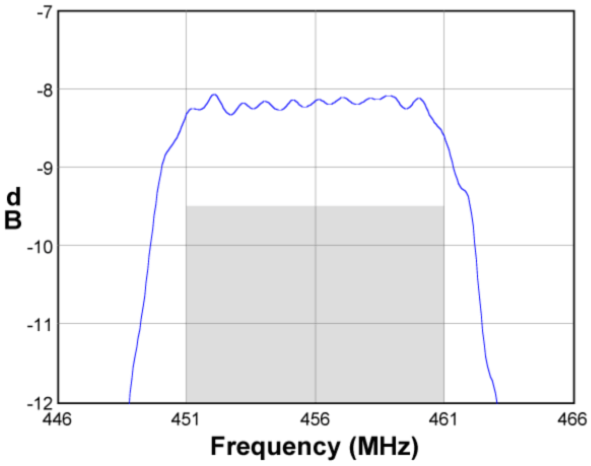


Typical Performance (at +25°C)

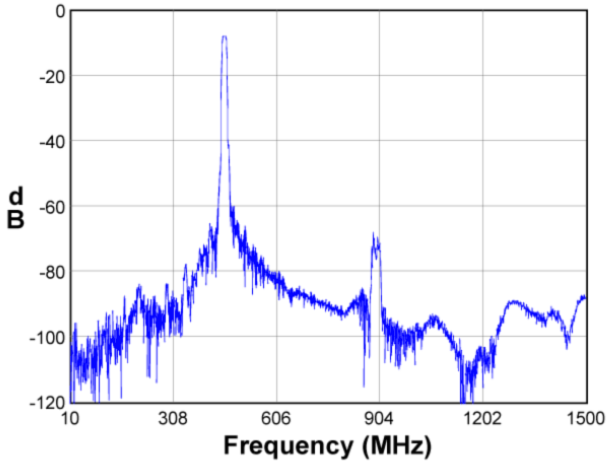
Frequency Response



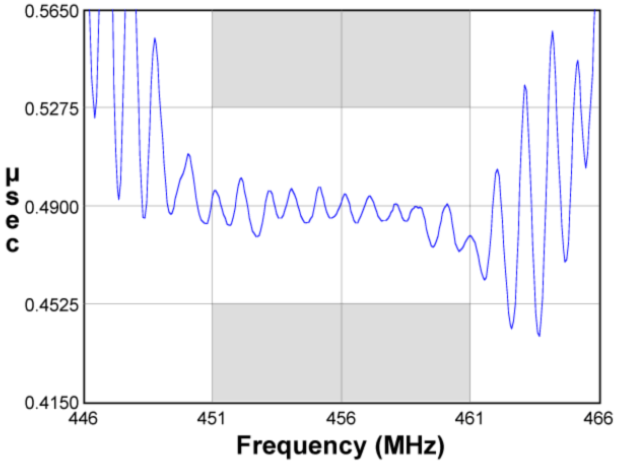
Passband Response



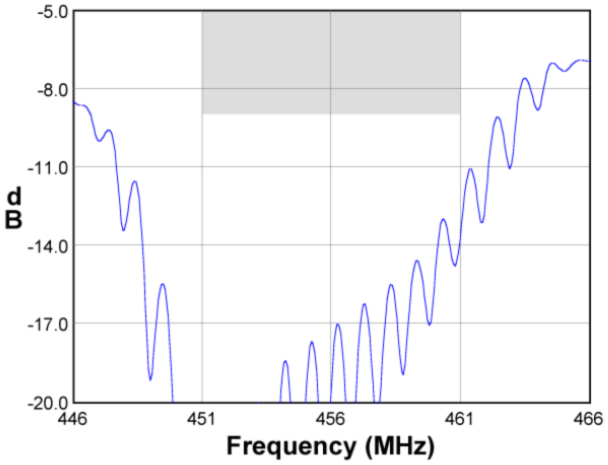
Wideband Response



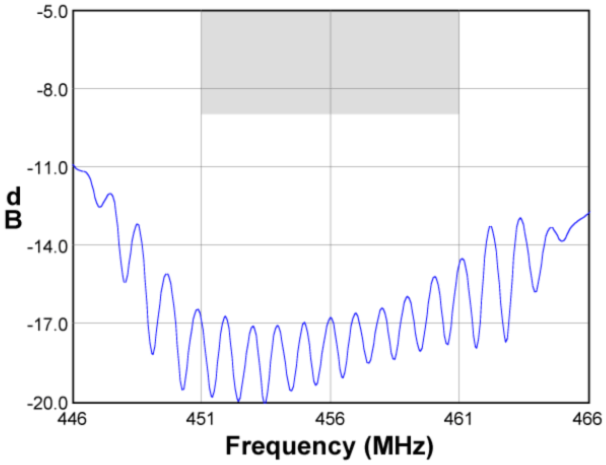
Group Delay Response



Return Loss Input



Return Loss Output



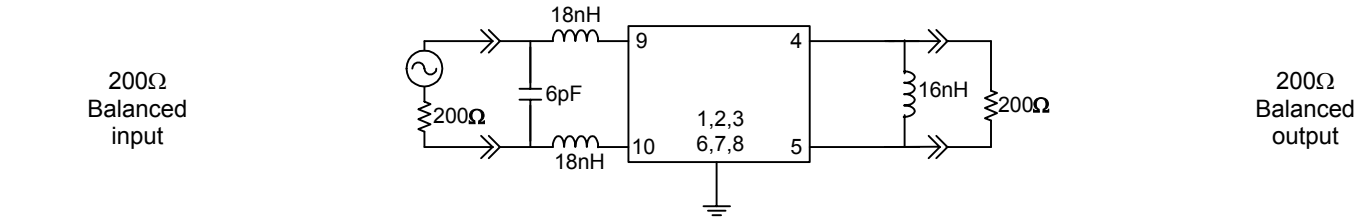
TriQuint SEMICONDUCTOR

Data Sheet

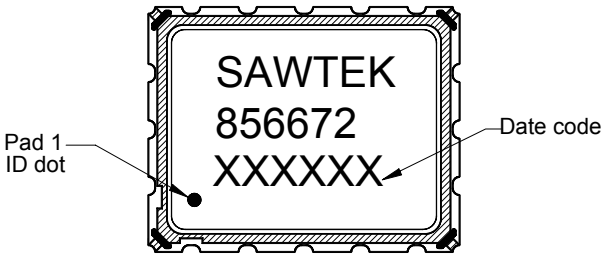
Part Number 856672
456 MHz SAW Filter

Matching Schematics

Actual matching values may vary due to PCB layout and parasitics

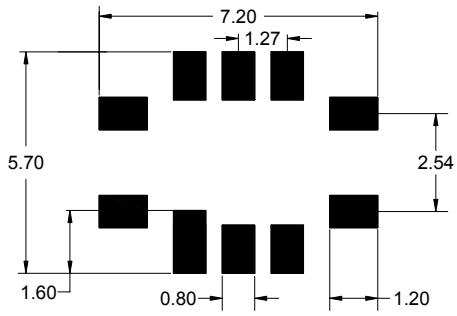


Marking



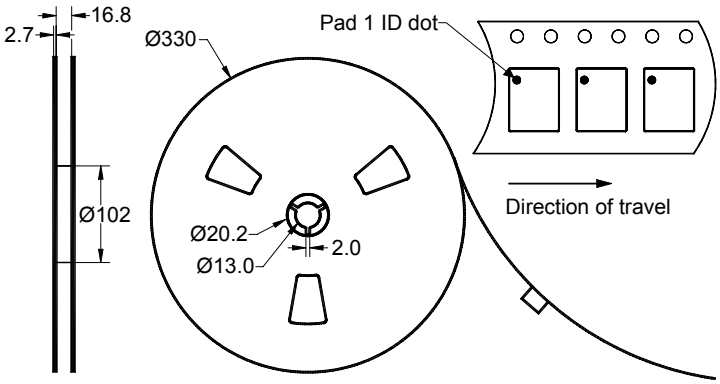
The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

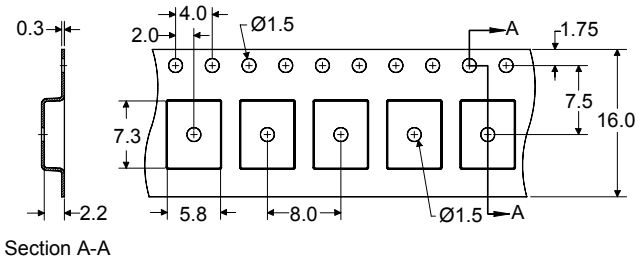
PCB Footprint



This footprint represents a recommendation only
Dimensions shown are nominal in millimeters

Tape and Reel





Dimensions shown are nominal in millimeters
Packaging quantity: 3000 units/reel

TriQuint SEMICONDUCTOR

Data Sheet

Part Number 856672
456 MHz SAW Filter

Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-40	+85	°C
Storage Temperature Range	T_{stg}	-40	+85	°C

Important Notes

Warnings

- Electrostatic Sensitive Device (ESD)
- Avoid ultrasonic exposure

RoHS Compliance

- This product complies with EU directive 2002/95/EC (RoHS)

Solderability

- Compatible with JEDEC J-STD-020C **Pb**-free process, **260°C** peak reflow temperature (see soldering profile)

Links to Additional Technical Information

PCB Layout Tips | Qualification Flowchart | Soldering Profile

S-Parameters | RoHS Information | Other Technical Information

Contact Information

TriQuint SEMICONDUCTOR
PO Box 609501
Orlando, FL 32860-9501
USA

Phone: +1 (407) 886-8860
Fax: +1 (407) 886-7061
Email: info-product@tqs.com
Web: www.triquint.com

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