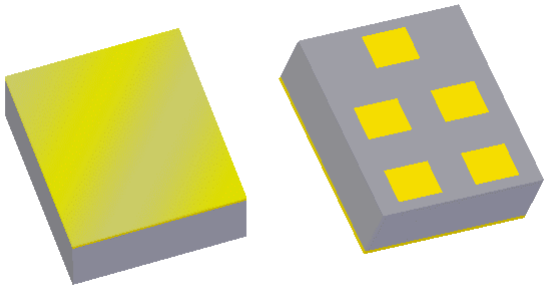
TriQuint SEMICONDUCTOR

Preliminary Data Sheet

Part Number 856575
1842.5 MHz SAW Filter

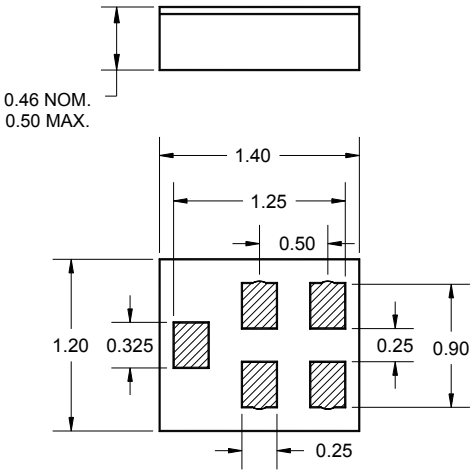
Features

- For DCS applications
- Usable bandwidth of 75 MHz
- Compatible with leading chipset suppliers
- Low loss
- Single-ended input, 50Ω
- Balanced output, 150Ω
- Ceramic Chip Scale Package (CSP)
- Hermetic
- RoHS compliant (2002/95/EC), Pb-free



Package

Surface Mount 1.40 x 1.20 x 0.46 mm

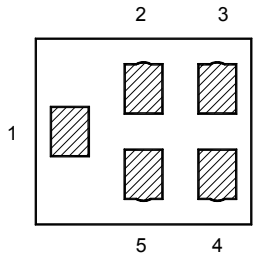


Dimensions shown are nominal in millimeters
All tolerances are ±0.10mm

Body: Al_2O_3 ceramic
Lid: *Kovar* or *Alloy 42*, *Au* over *Ni* plated
Terminations: *Au* plating 0.5 - 1.0μm,
over a 2 - 6μm *Ni* plating

Pin Configuration

Bottom View



Pin No.	Description
1	Input
3,4	Output
2,5	Case ground

Preliminary Data Sheet

Electrical Specifications [1]

Operating Temperature Range: [2] +25 °C

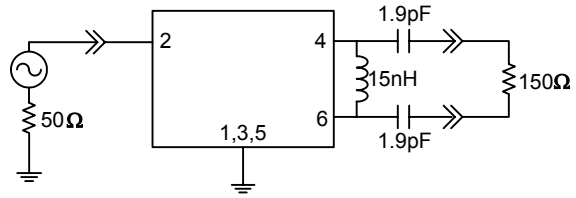
Parameter [3]	Minimum	Typical	Maximum	Unit
Center Frequency	-	1842.5	-	MHz
Maximum Insertion Loss				
1805 - 1880 MHz	-	1.6	2.0	dB
Absolute Attenuation				
100 - 1200 MHz	25	38	-	dB
1200 - 1705 MHz	25	33	-	dB
1705 - 1764 MHz	20	25	-	dB
1764 - 1785 MHz	9	12	-	dB
1920 - 1980 MHz	14	16	-	dB
1980 - 3000 MHz	20	24	-	dB
3000 - 5415 MHz	20	41	-	dB
5415 - 5640 MHz	38	48	-	dB
5640 - 6000 MHz	37	45	-	dB
Output Amplitude Balance ($\|S_{31}/S_{21}\|$)				
1805 - 1880 MHz	-1.5	1.3	1.5	dB
Output Phase Balance [$\Phi(S_{31})-\Phi S_{21}+180$]				
1805 - 1880 MHz	-10	5	10	degree
Input/Output VSWR				
1805 - 1880 MHz	-	2.0	2.5	-
Source Impedance [4]	-	50	-	Ω
Load Impedance (Balanced) [4]	-	150	-	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. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
4. 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



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Preliminary Data Sheet

Part Number 856575

1842.5 MHz SAW Filter

Electrical Specifications [1]

Operating Temperature Range: [2] -20 to +75 ºC

Parameter [3]	Minimum	Typical	Maximum	Unit
Center Frequency	-	1842.5	-	MHz
Maximum Insertion Loss				
1805 - 1880 MHz	-	1.6	2.3	dB
Absolute Attenuation				
100 - 1200 MHz	25	38	-	dB
1200 - 1705 MHz	25	33	-	dB
1705 - 1764 MHz	20	25	-	dB
1764 - 1785 MHz	6	12	-	dB
1920 - 1980 MHz	14	16	-	dB
1980 - 3000 MHz	20	24	-	dB
3000 - 5415 MHz	20	41	-	dB
5415 - 5640 MHz	38	48	-	dB
5640 - 6000 MHz	37	45	-	dB
Output Amplitude Balance ($\|S_{31}/S_{21}\|$)				
1805 - 1880 MHz	-1.5	1.3	1.5	dB
Output Phase Balance [$\Phi(S_{31})-\Phi S_{21}+180$]				
1805 - 1880 MHz	-10	5	10	degree
Input/Output VSWR				
1805 - 1880 MHz	-	2.0	2.5	-
Source Impedance [4]	-	50	-	Ω
Load Impedance (Balanced) [4]	-	150	-	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. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
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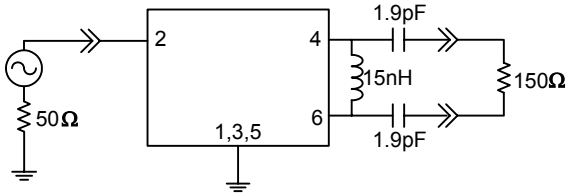
Test Circuit:

Actual matching values may vary due to PCB layout and parasitics

50 Ω Single-ended Input



150 Ω Balanced Output

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Preliminary Data Sheet

Part Number 856575

1842.5 MHz SAW Filter

Electrical Specifications [1]

Operating Temperature Range: [2] -25 to +80 ºC

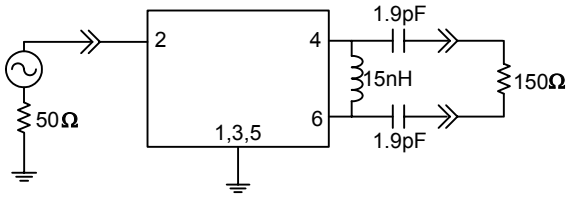
Parameter [3]	Minimum	Typical	Maximum	Unit
Center Frequency	-	1842.5	-	MHz
Maximum Insertion Loss				
1805 - 1880 MHz	-	1.6	2.4	dB
Absolute Attenuation				
100 - 1200 MHz	25	38	-	dB
1200 - 1705 MHz	25	33	-	dB
1705 - 1764 MHz	20	25	-	dB
1764 - 1785 MHz	6	12	-	dB
1920 - 1980 MHz	14	16	-	dB
1980 - 3000 MHz	20	24	-	dB
3000 - 5415 MHz	20	41	-	dB
5415 - 5640 MHz	38	48	-	dB
5640 - 6000 MHz	37	45	-	dB
Output Amplitude Balance ($\|S_{31}/S_{21}\|$)				
1805 - 1880 MHz	-1.5	1.3	1.5	dB
Output Phase Balance [$\Phi(S_{31})-\Phi S_{21}+180$]				
1805 - 1880 MHz	-10	5	10	degree
Input/Output VSWR				
1805 - 1880 MHz	-	2.0	2.5	-
Source Impedance [4]	-	50	-	Ω
Load Impedance (Balanced) [4]	-	150	-	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. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
4. This is the optimum impedance in order to achieve the performance shown

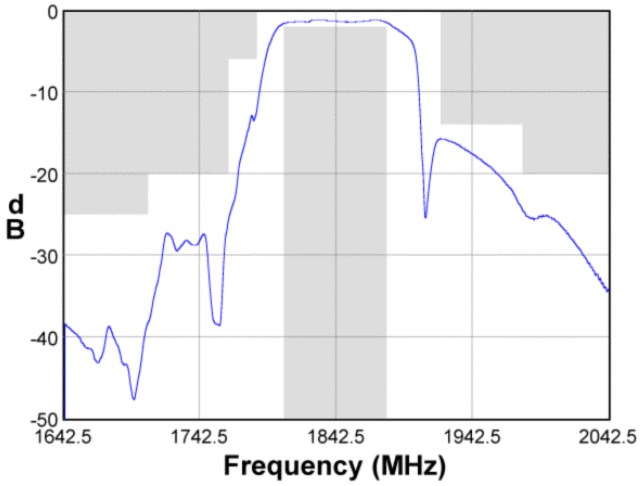
Test Circuit:

Actual matching values may vary due to PCB layout and parasitics

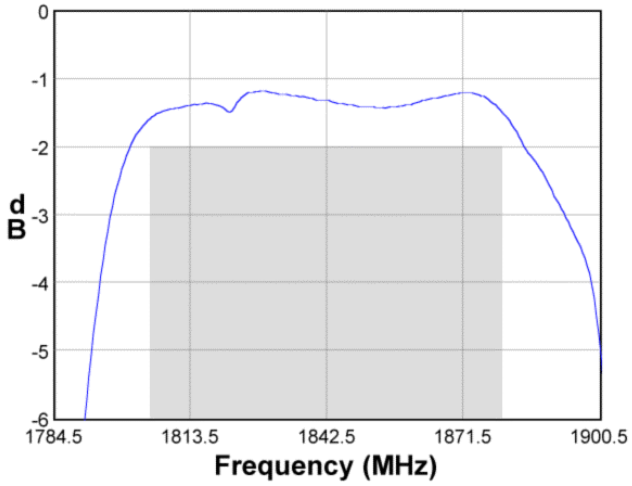


Typical Performance (at +25°C)

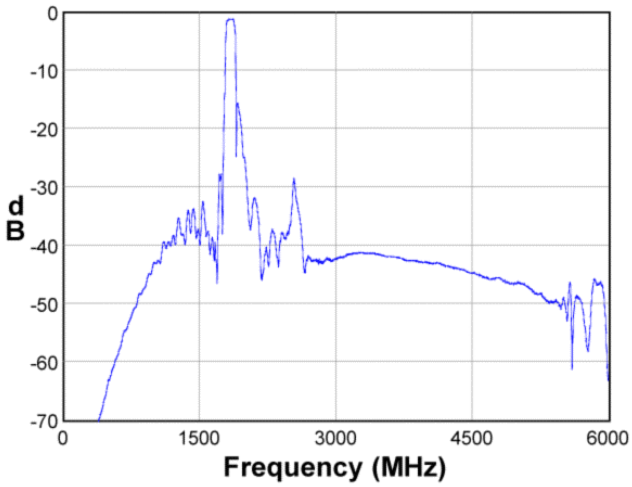
Frequency Response



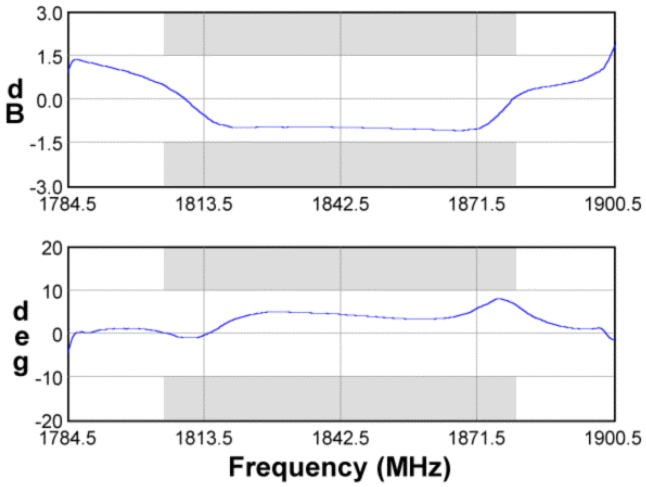
Passband Response



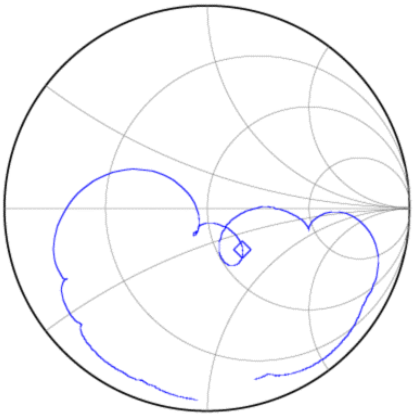
Wideband Response



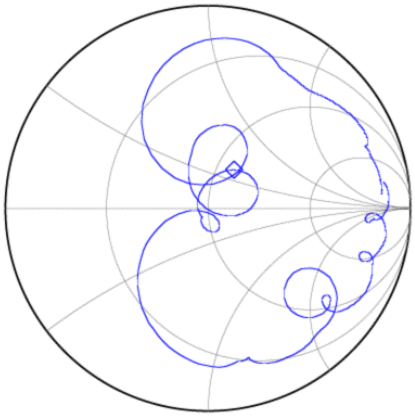
Amplitude/Phase Balance



Input Smith Chart



Output Smith Chart

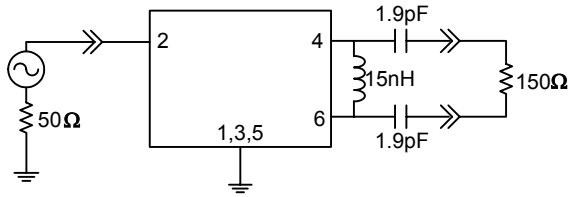


Preliminary Data Sheet

Matching Schematics

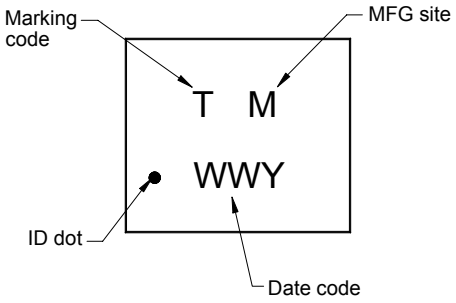
Actual matching values may vary due to PCB layout and parasitics

50 Ω
Single-ended
Input



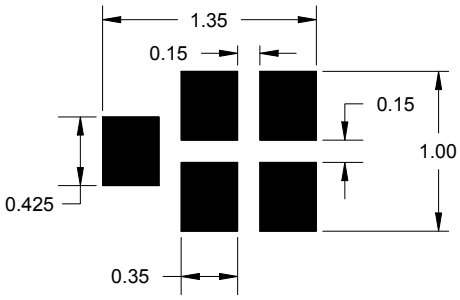
150 Ω
Balanced
Output

Marking



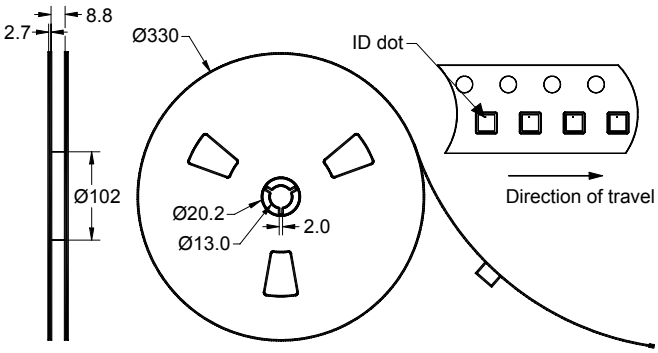
The date code consists of: WW = 2 digit week,
Y = last digit of year, M = manufacturing site code

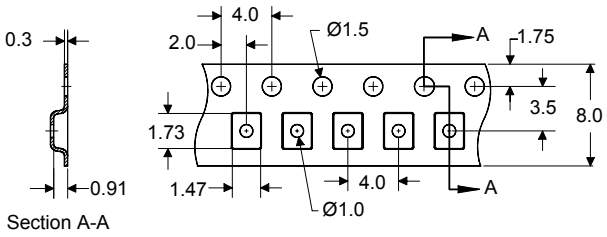
PCB Footprint



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

Tape and Reel





Dimensions shown are nominal in millimeters
Packaging quantity: 10000 units/reel

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Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-20	+80	°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

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