
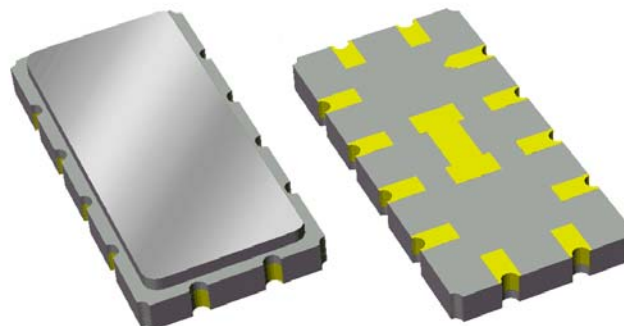


# Data Sheet

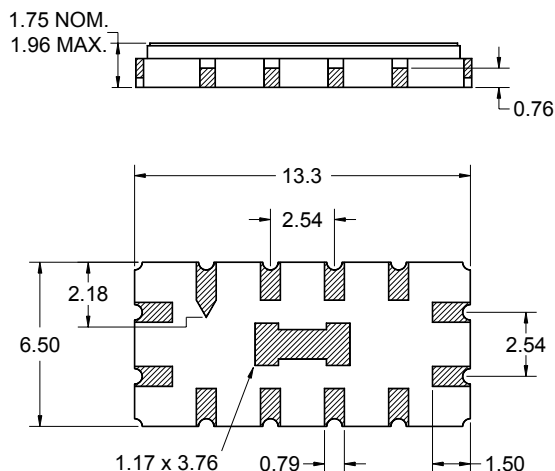
## Features

- For 2 Carrier WCDMA applications
- Usable bandwidth 10 MHz
- Low loss
- High attenuation
- Designed to minimize EVM
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Hermetic
- RoHS compliant (2002/95/EC), Pb-free 



## Package

Surface Mount 13.30 x 6.50 x 1.75 mm

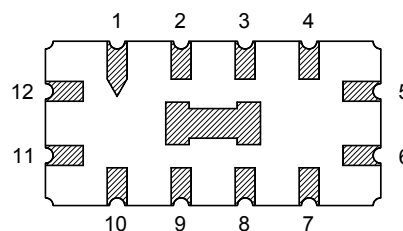


Dimensions shown are nominal in millimeters  
All tolerances are  $\pm 0.15$ mm except overall  
length and width  $\pm 0.10$ mm

Body:  $Al_2O_3$  ceramic  
Lid: Kovar, Ni plated  
Terminations: Au plating 0.5 - 1.0 $\mu$ m,  
over a 2 - 6 $\mu$ m Ni plating

## Pin Configuration

Bottom View



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

**Data Sheet**

**Electrical Specifications <sup>(1)</sup>**

Operating Temperature Range: <sup>(2)</sup> -30 to +80 °C

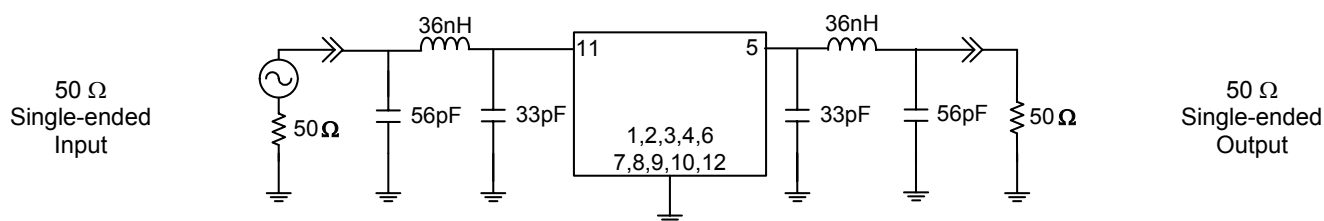
Parameter <sup>(3)</sup>	Minimum	Typical	Maximum	Unit
Center Frequency	-	140	-	MHz
Insertion Loss at 140 MHz	-	9.2	10.5	dB
Lower 1 dB Bandedge <sup>(4)</sup>	-	134.270	135.5	MHz
Upper 1 dB Bandedge	144.5	146.090	-	MHz
Lower 3 dB Bandedge <sup>(4)</sup>	-	133.97	135.0	MHz
Upper 3 dB Bandedge	145.0	146.33	-	MHz
35 dB Bandwidth	-	14.33	16.0	MHz
Amplitude Ripple <sup>(5)</sup> 135.5 - 144.5 MHz	-	0.2	0.8	dB p-p
Absolute Group Delay 135.5 - 144.5 MHz	-	1.08	1.1	μs
Group Delay Variation 135.5 - 144.5 MHz	-	45	100	ns
Phase Linearity 135.5 - 144.5 MHz	-	3.4	8.0	deg
Input and Output VSWR 135.5 - 144.5 MHz	-	1.8	2.5	-
Relative Attenuation <sup>(4)</sup> 40.0 - 110.0 MHz	55	69.6	-	dB
110.0 - 125.0 MHz	42	53.5	-	dB
125.0 - 131.2 MHz	37	49.1	-	dB
148.8 - 155.0 MHz	37	46.2	-	dB
155.0 - 170.0 MHz	42	55.6	-	dB
170.0 - 240.0 MHz	55	71.3	-	dB
Source/Load Impedance <sup>(6)</sup>	-	50	-	Ω

**Notes:**

1. All specifications are based on the TriQuint test reference system
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. Relative to insertion loss at center frequency
5. Amplitude Ripple is defined as the worse peak to adjacent valley within defined frequency points
6. This is the optimum impedance in order to achieve the performance shown

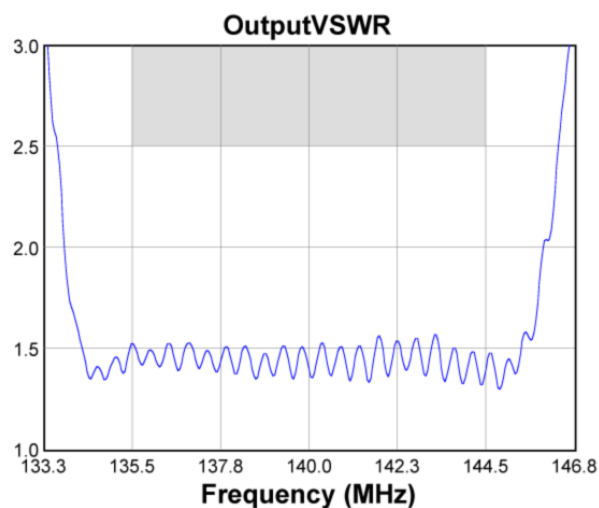
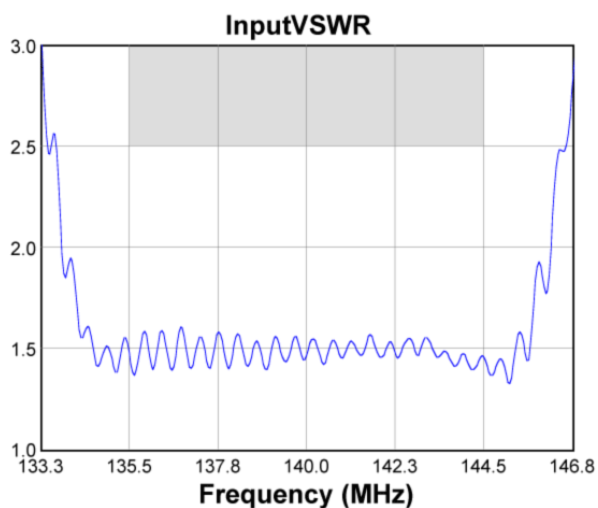
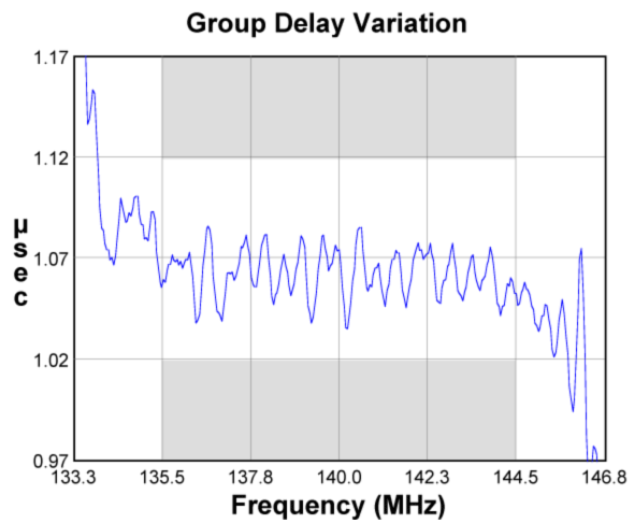
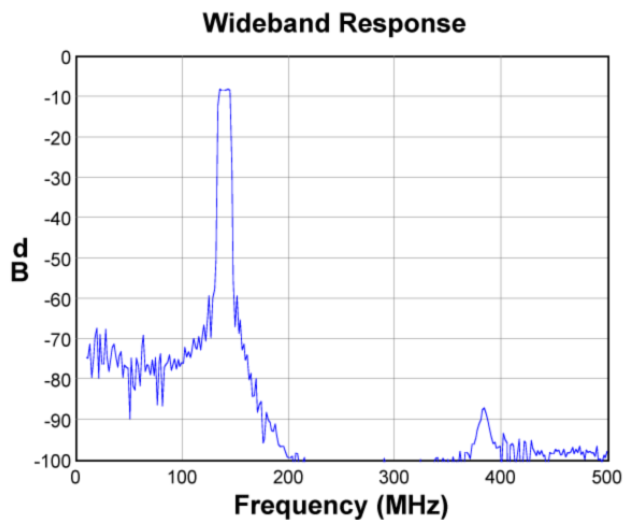
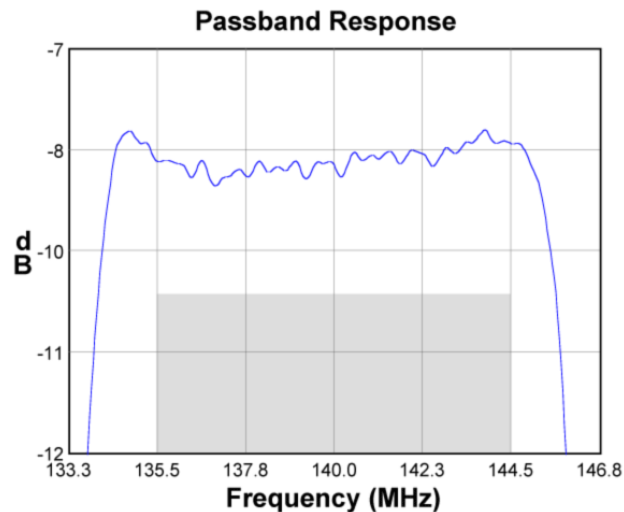
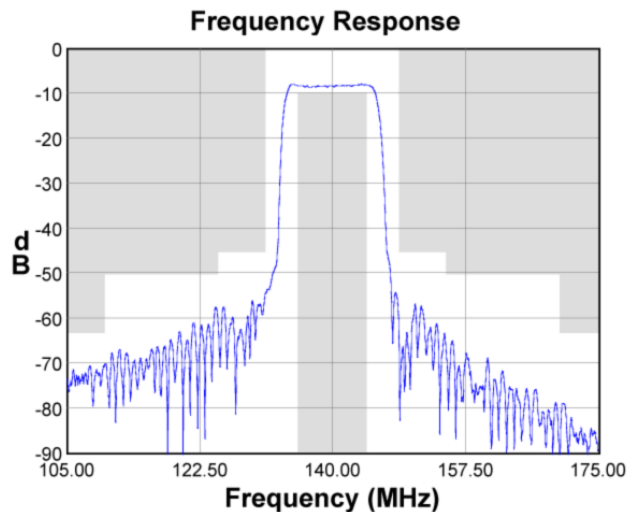
**Test Circuit:**

Actual matching values may vary due to PCB layout and parasitics



**Data Sheet**

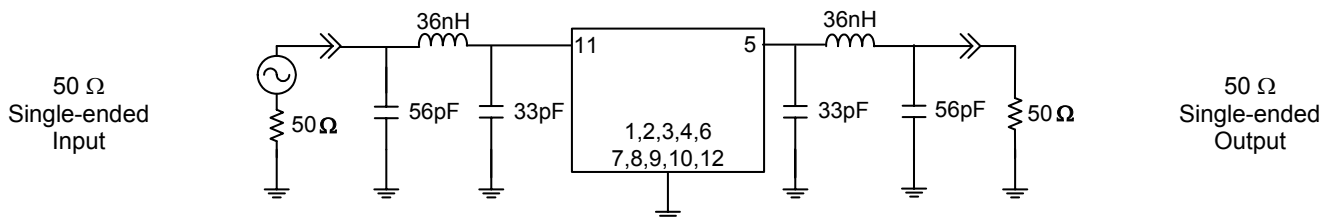
**Typical Performance (at +25°C)**



**Data Sheet**

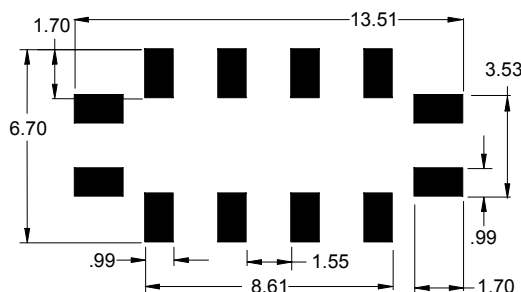
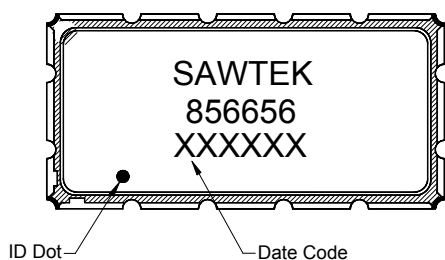
**Matching Schematics**

Actual matching values may vary due to PCB layout and parasitics



**Marking**

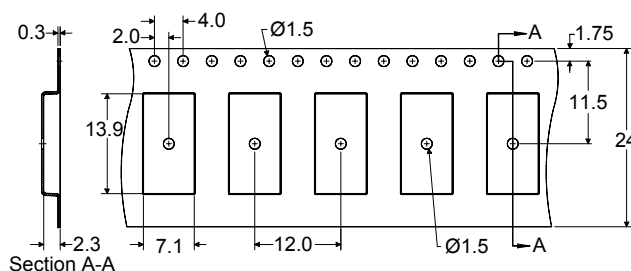
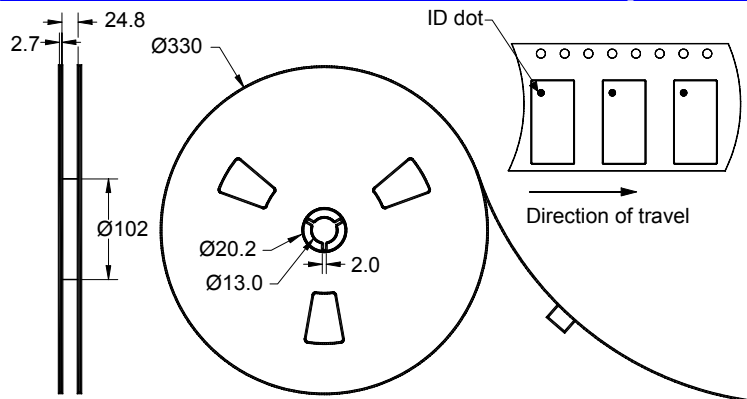
**PCB Footprint**



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

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	-25	+80	°C
Storage Temperature Range	T <sub>stg</sub>	-40	+85	°C
Power Handling <sup>(1)</sup>	P <sub>in</sub>	-	+15	°C


1. Device is measured for equivalent 10K hours @ 55 °C (CW Signal)

**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](#)

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**Contact Information**



PO Box 609501  
Orlando, FL 32860-9501  
USA

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

Or contact one of our worldwide  
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