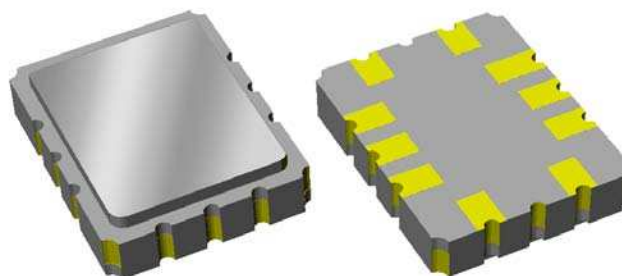


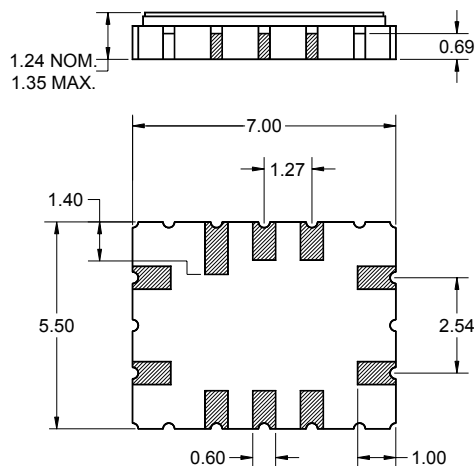
## Features

- For multi carrier WCDMA applications
- Usable bandwidth 18 MHz
- Low loss
- High attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Hermetic
- **RoHS** compliant (2002/95/EC), **Pb-free** 



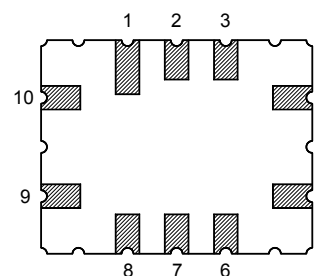
## Package

Surface Mount 7.01 x 5.51 x 1.70 mm



## Pin Configuration

Bottom View



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

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

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

Operating Temperature Range: <sup>(2)</sup> -40 to +85 °C

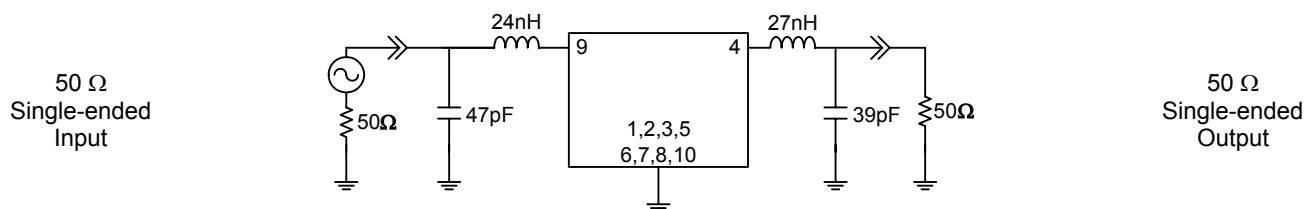
| Parameter <sup>(3)</sup>                           | Minimum | Typical | Maximum | Unit |
|----------------------------------------------------|---------|---------|---------|------|
| <b>Center Frequency</b>                            | -       | 172.8   | -       | MHz  |
| <b>Maximum Insertion Loss</b><br>163.8 - 181.8 MHz | -       | 8.7     | 11      | dB   |
| <b>Lower 1 dB Bandedge <sup>(4)</sup></b>          | -       | 162.5   | 163.8   | MHz  |
| <b>Upper 1 dB Bandedge</b>                         | 181.8   | 183.2   | -       | MHz  |
| <b>Lower 3 dB Bandedge <sup>(4)</sup></b>          | -       | 161.6   | 162.8   | MHz  |
| <b>Upper 3 dB Bandedge</b>                         | 182.8   | 184.1   | -       | MHz  |
| <b>Lower 35 dB Bandedge <sup>(4)</sup></b>         | 157.8   | 158.9   | -       | MHz  |
| <b>Upper 35 dB Bandedge</b>                        | -       | 186.8   | 187.9   | MHz  |
| <b>Lower 42 dB Bandedge <sup>(4)</sup></b>         | 152.8   | 158.5   | -       | MHz  |
| <b>Upper 42 dB Bandedge</b>                        | -       | 187.1   | 192.8   | MHz  |
| <b>Relative Rejection <sup>(4)</sup></b>           |         |         |         |      |
| 80 - 152.8 MHz                                     | 42      | 52      | -       | dB   |
| 192.8 - 500 MHz                                    | 42      | 48      | -       | dB   |
| 500 - 1000 MHz                                     | 42      | 70      | -       | dB   |
| <b>Passband Variation</b><br>163.8 - 181.8 MHz     | -       | 0.5     | 1.0     | dB   |
| <b>Group Delay Variation</b><br>163.8 - 181.8 MHz  | -       | 40      | 100     | nsec |
| <b>Phase Variation</b><br>163.8 - 181.8 MHz        | -       | 4       | 15      | deg  |
| <b>Source/Load Impedance <sup>(5)</sup></b>        | -       | 50      | -       | Ω    |

**Notes:**

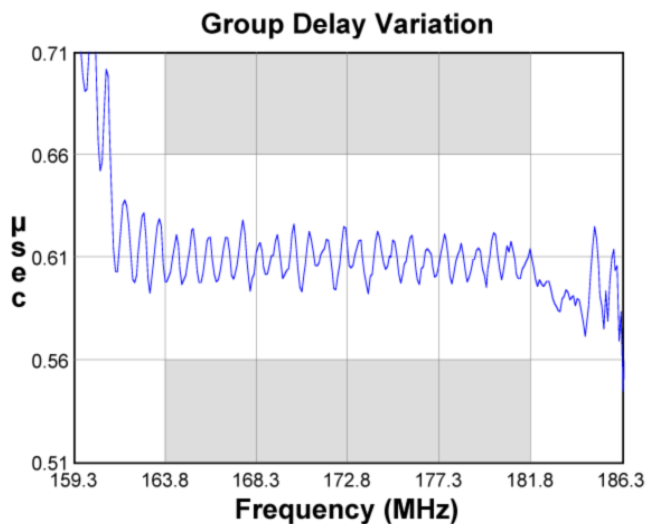
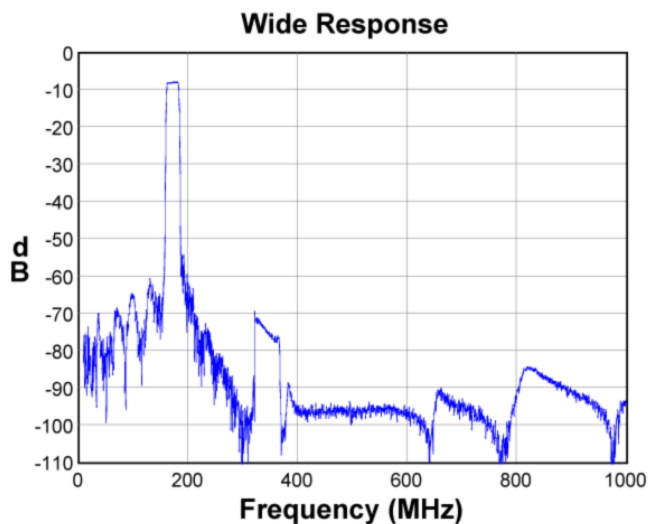
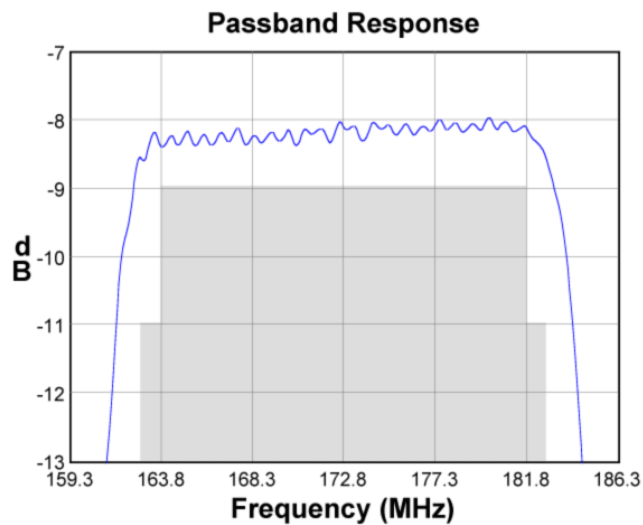
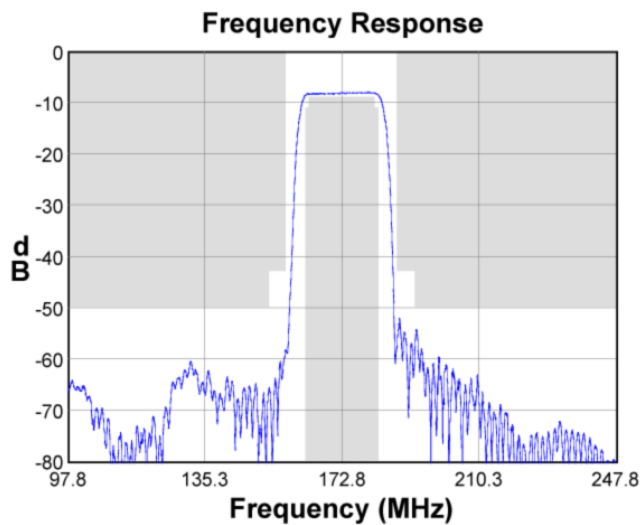
1. All specifications are based on TriQuint test circuit shown below
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to manufacturing tolerances
4. Relative to minimum insertion loss
5. This is the optimum impedance in order to achieve the performance shown

**Test Circuit:**

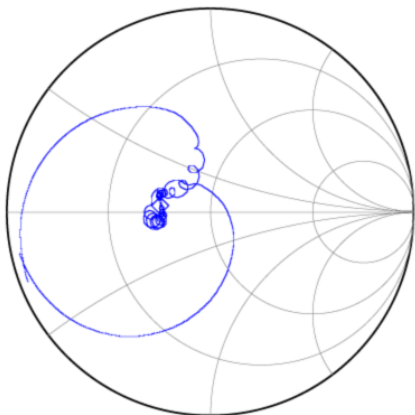
Actual matching values may vary due to PCB layout and parasitics



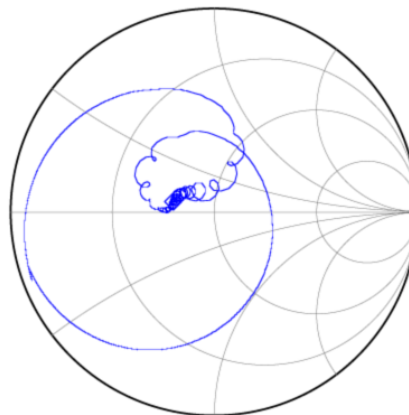
**Typical Performance (at +25°C)**



**Input Smith Chart**

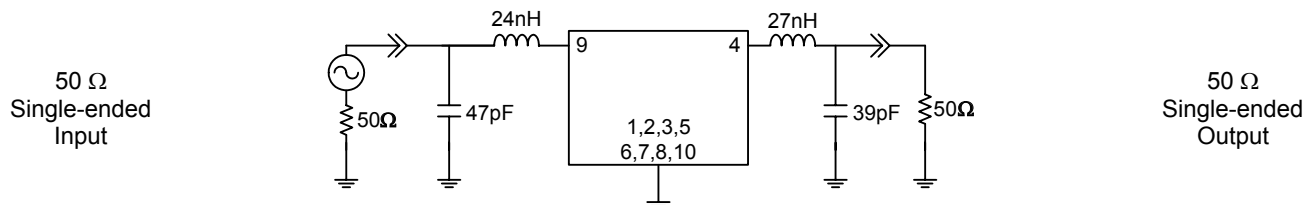


**Output Smith Chart**



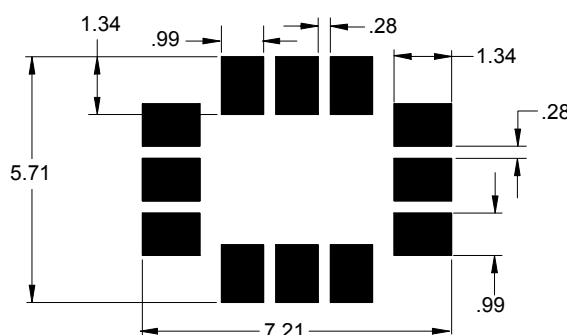
## Matching Schematics

Actual matching values may vary due to PCB layout and parasitics



## Marking

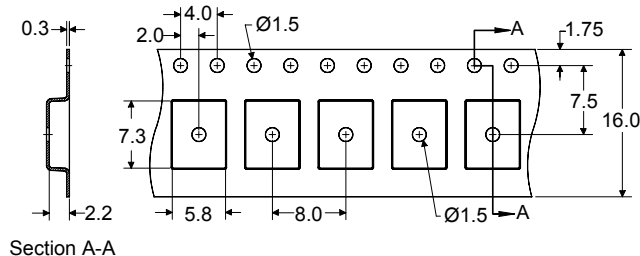
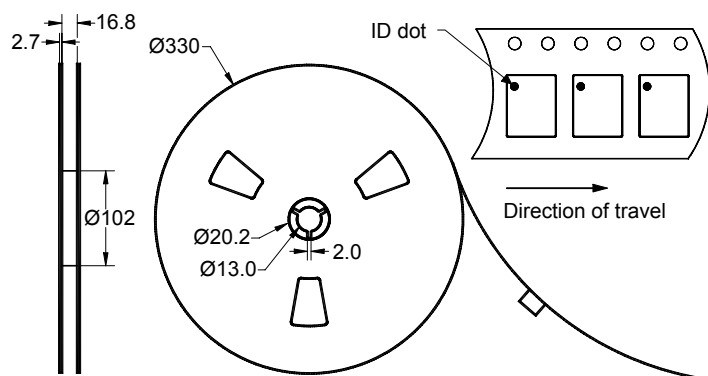
## PCB Footprint



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: 3000 units/reel

## Maximum Ratings

| Parameter                   | Symbol           | Minimum | Maximum | Unit |
|-----------------------------|------------------|---------|---------|------|
| Operating Temperature Range | T                | -40     | +85     | °C   |
| Storage Temperature Range   | T <sub>stg</sub> | -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](#)

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