
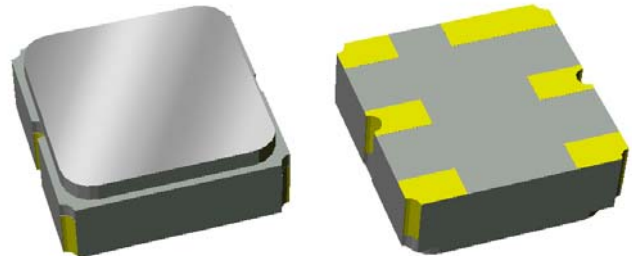


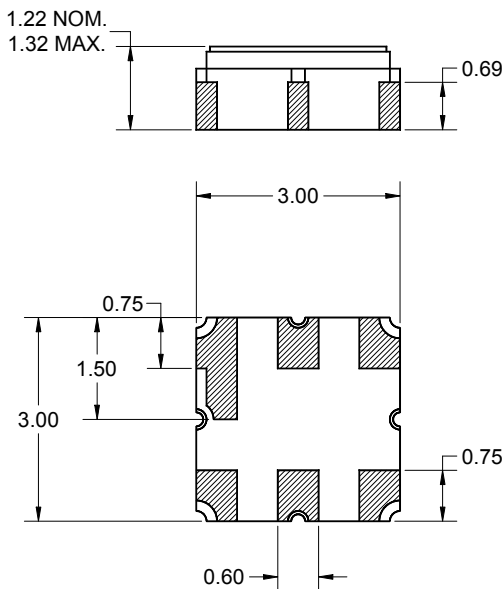
**Features**

- For EGSM applications
- Usable bandwidth 35 MHz
- Low loss
- No impedance matching required for operation at 50 Ω
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Small Size
- Hermetic
- RoHS compliant (2002/95/EC), Pb-free 



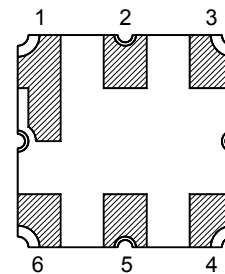
**Package**

Surface Mount 3.00 x 3.00 x 1.22 mm  
SMP-12



**Pin Configuration**

Bottom View



**Single-ended Configuration**

| Pin No. | Description |
|---------|-------------|
| 2       | Input       |
| 5       | Output      |
| 1,3,4,6 | Case ground |

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

Body: Al<sub>2</sub>O<sub>3</sub> ceramic  
Lid: Kovar, Ni plated  
Terminations: Au plating 0.5 - 1.0µm, over a 2 - 6µm Ni plating

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

Operating Temperature Range: <sup>(2)</sup> -20 to +70 °C

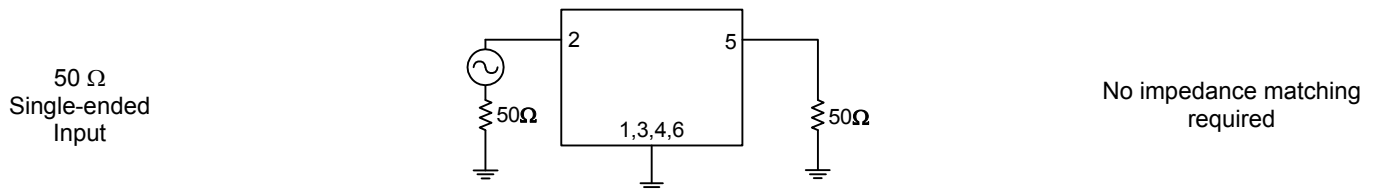
| Parameter <sup>(3)</sup>                              | Minimum | Typical <sup>(4)</sup> | Maximum | Unit |
|---|---------|------------------------|---------|------|
| <b>Center Frequency</b>                               | -       | 942.5                  | -       | MHz  |
| <b>Insertion Loss</b>                                 |         |                        |         |      |
| 925 - 960 MHz (+15 to +35 °C)                         | -       | 2                      | 3.2     | dB   |
| 925 - 960 MHz (-20 to +70 °C)                         | -       | 2.2                    | 4       | dB   |
| <b>Absolute Attenuation</b>                           |         |                        |         |      |
| 10 - 905 MHz  | 20      | 32                     | -       | dB   |
| 905 - 915 MHz (-20 to +35 °C)                         | 12      | 18                     | -       | dB   |
| 905 - 915 MHz (+35 to +70 °C)                         | 5       | 18                     | -       | dB   |
| 980 - 2400 MHz  | 20      | 28                     | -       | dB   |
| 2400 - 3120 MHz                                       | 10      | 26                     | -       | dB   |
| <b>Input/Output Return Loss</b>                       |         |                        |         |      |
| 925 - 960 MHz   | 6       | 10                     | -       | dB   |
| <b>Source Impedance (single-ended) <sup>(5)</sup></b> | -       | 50                     | -       | Ω    |
| <b>Load Impedance (single-ended) <sup>(5)</sup></b>   | -       | 50                     | -       | Ω    |

**Notes:**

1. All specifications are based on the 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 temperature drift and manufacturing tolerances
4. Typical values are based on average measurements at room temperature
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



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

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

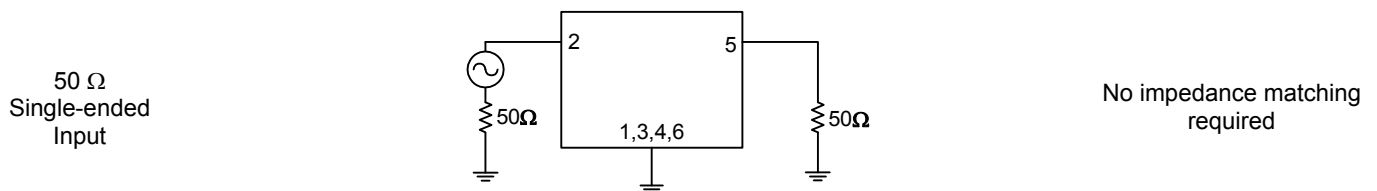
| Parameter <sup>(3)</sup>                              | Minimum | Typical <sup>(4)</sup> | Maximum | Unit |
|---|---------|------------------------|---------|------|
| <b>Center Frequency</b>                               | -       | 942.5                  | -       | MHz  |
| <b>Insertion Loss</b><br>925 - 960 MHz                | -       | 2.5                    | 4.5     | dB   |
| <b>Absolute Attenuation</b><br>10 - 905 MHz           | 20      | 32                     | -       | dB   |
| 905 - 915 MHz (-40 to +35 °C)                         | 12      | 18                     | -       | dB   |
| 905 - 915 MHz (+35 to +85 °C)                         | 4       | 18                     | -       | dB   |
| 980 - 2400 MHz  | 20      | 28                     | -       | dB   |
| 2400 - 3120 MHz                                       | 10      | 26                     | -       | dB   |
| <b>Input/Output Return Loss</b><br>925 - 960 MHz      | 6       | 10                     | -       | dB   |
| <b>Source Impedance (single-ended) <sup>(5)</sup></b> | -       | 50                     | -       | Ω    |
| <b>Load Impedance (single-ended) <sup>(5)</sup></b>   | -       | 50                     | -       | Ω    |

**Notes:**

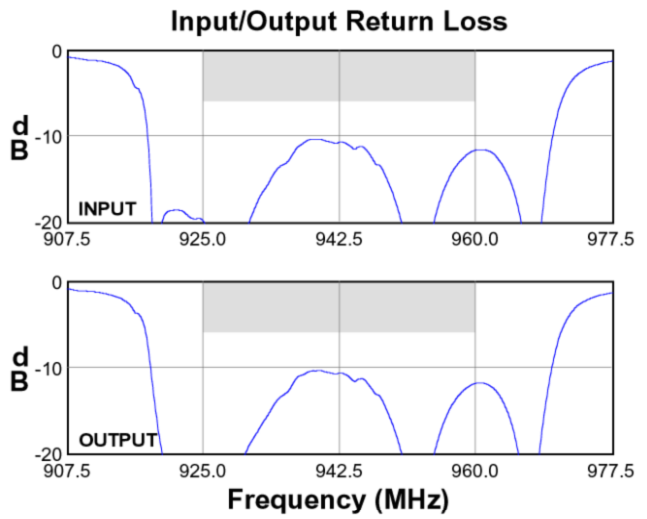
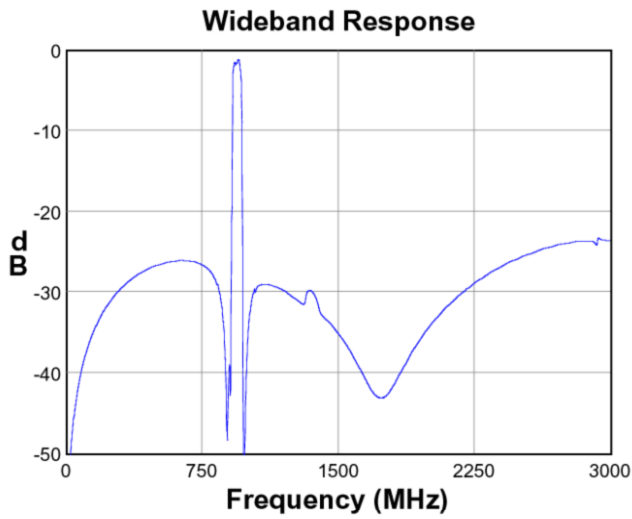
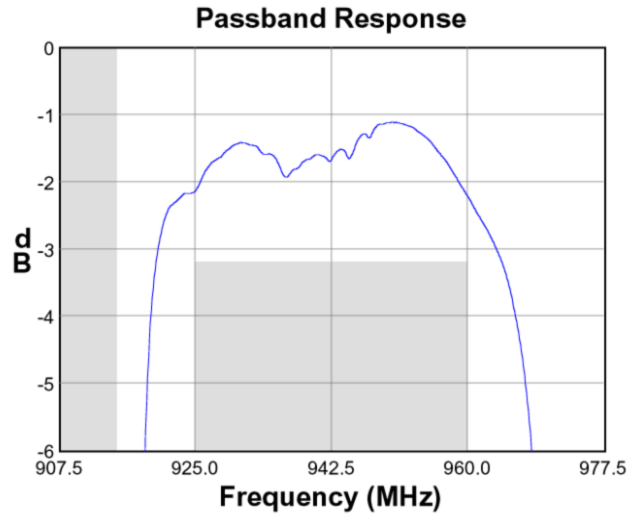
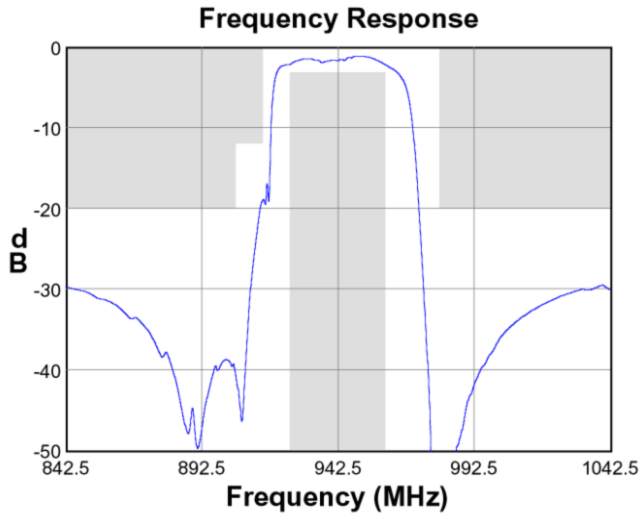
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2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
4. Typical values are based on average measurements at room temperature
5. This is the optimum impedance in order to achieve the performance shown

**Test Circuit:**

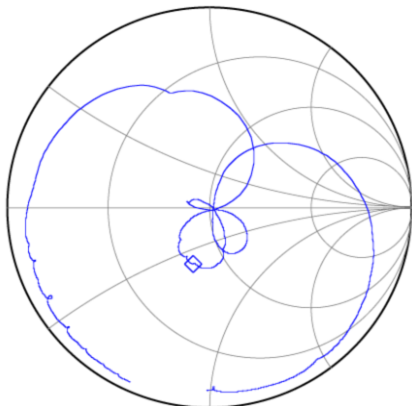
Actual matching values may vary due to PCB layout and parasitics



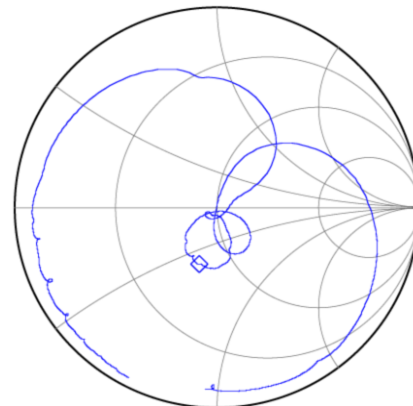
**Typical Performance (at room temperature)**



**Input Smith Chart**



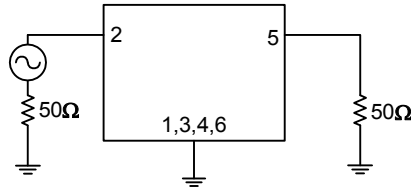
**Output Smith Chart**



**Matching Schematics**

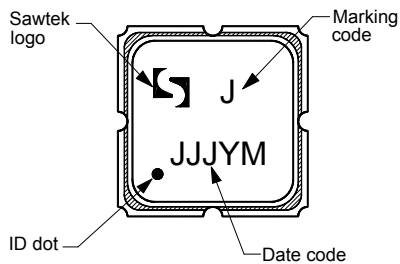
Actual matching values may vary due to PCB layout and parasitics

50  $\Omega$   
Single-ended  
Input



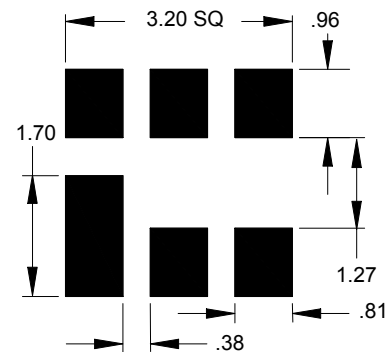
No impedance matching  
required

**Marking**



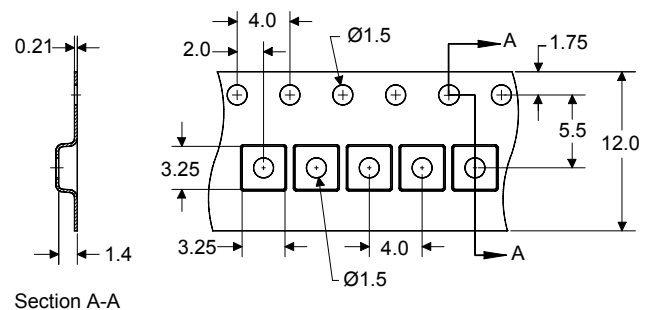
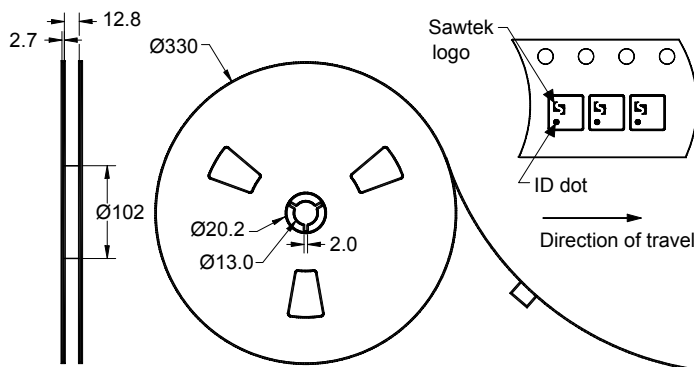
The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

**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: 5000 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   |
| Input Power (2:8 duty cycle, 20,000 hours @55°C) | P <sub>in</sub>  |         | +16     | dBm  |

**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 JESD22-B102, Pb-free process, 260C 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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