
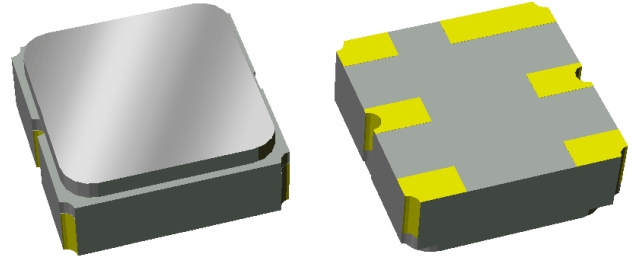


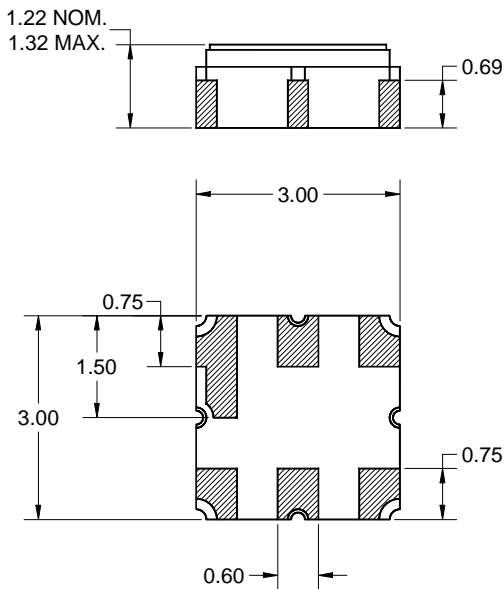
**Features**

- For GPS automotive applications
- Usable bandwidth 2.4 MHz
- Low loss
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Hermetic
- Qualified for Automotive applications
- Manufacturing facilities are certified with ISO/TS 16949:2002
- **RoHS** compliant (2002/95/EC), **Pb-free** 



**Package**

Surface Mount 3.00 x 3.00 x 1.22 mm  
SMP-12

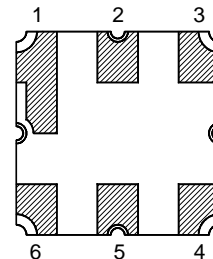


Dimensions shown are nominal in millimeters  
All tolerances are  $\pm 0.15$ mm except overall  
length and width  $\pm 0.10$ mm

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
2	Input
5	Output
1,3,4,6	Case Ground

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

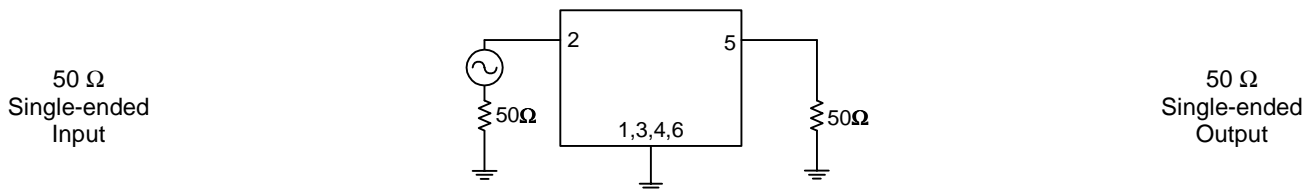
Operating Temperature Range: <sup>(2)</sup> -40 to +85 °C

Parameter <sup>(3)</sup>	Minimum	Typical <sup>(4)</sup>	Maximum	Unit
<b>Center Frequency</b>	-	1575.42	-	MHz
<b>Maximum Insertion Loss</b> 1574.22 - 1576.62 MHz	-	1.3	1.8	dB
<b>Passband Ripple</b> 1574.22 - 1576.62 MHz	-	0.3	1	dB p-p
<b>Absolute Attenuation</b>				
10 - 1450 MHz	40	42	-	dB
1450 - 1500 MHz	30	45	-	dB
1625 - 1640 MHz	30	58	-	dB
1640 - 2000 MHz	45	49	-	dB
2000 - 3000 MHz	30	35	-	dB
<b>Input/Output VSWR</b> 1574.22 - 1576.62 MHz	-	1.2:1	2:1	dB
<b>Source Impedance: <sup>(5)</sup></b>	-	50	-	Ω
<b>Load Impedance: <sup>(5)</sup></b>	-	50	-	Ω

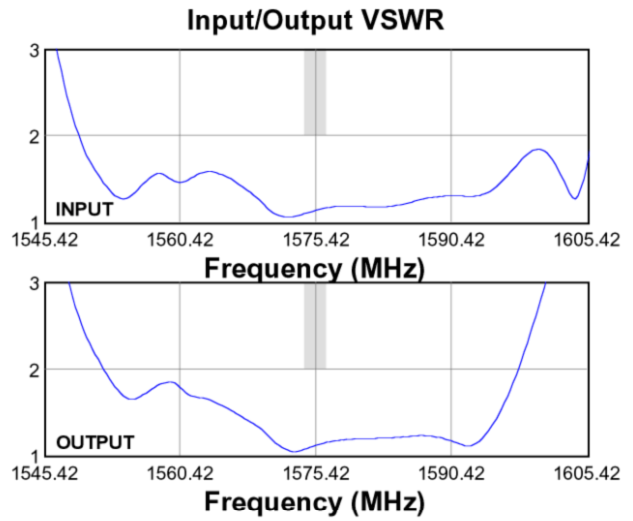
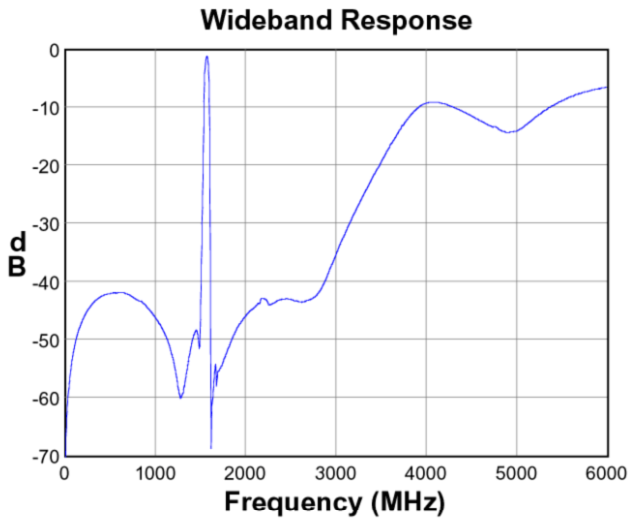
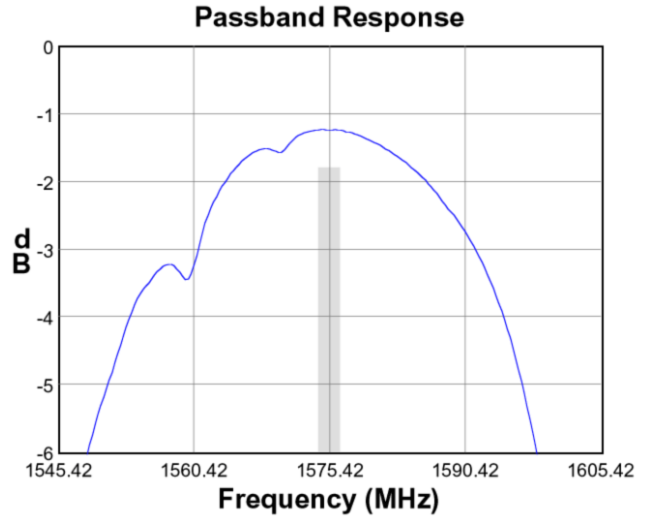
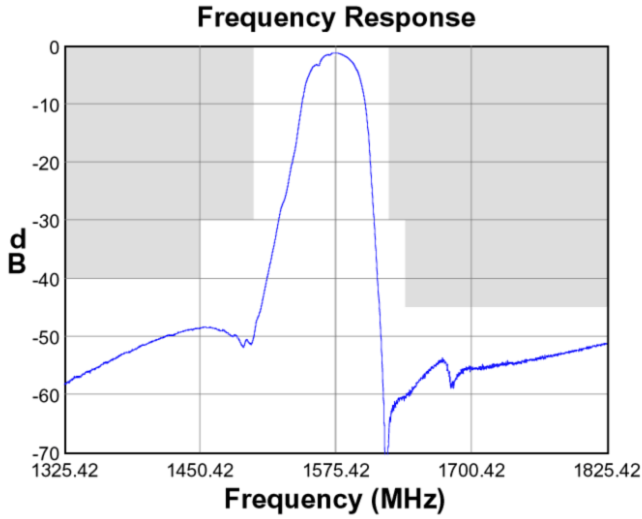
**Notes:**

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. Typical values are based on average measurements at room temperature
5. This is the optimum impedance in order to achieve the performance shown

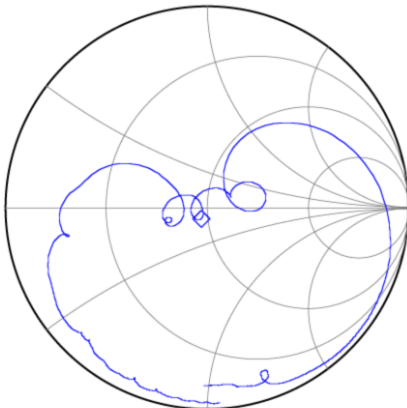
**Test Circuit:**



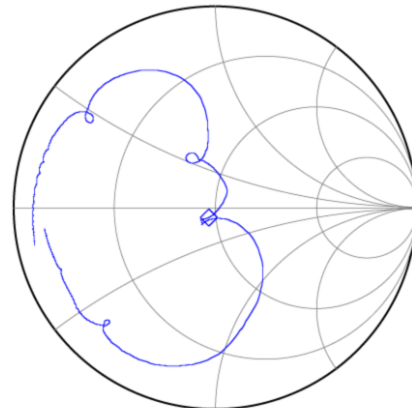
**Typical Performance (at +25°C)**



**Input Smith Chart**

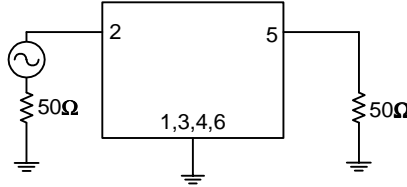


**Output Smith Chart**



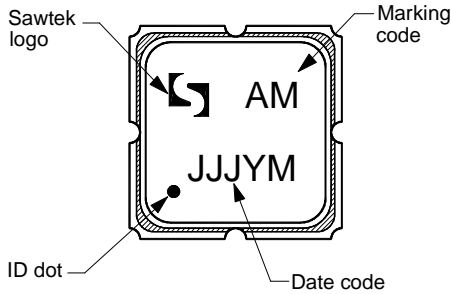
**Matching Schematics**

50 Ω  
Single-ended  
Input



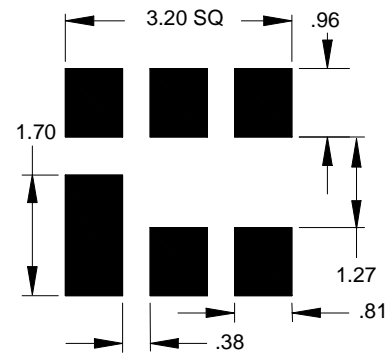
50 Ω  
Single-ended  
Output

**Marking**



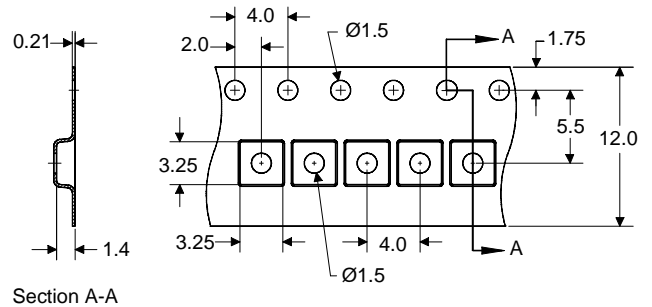
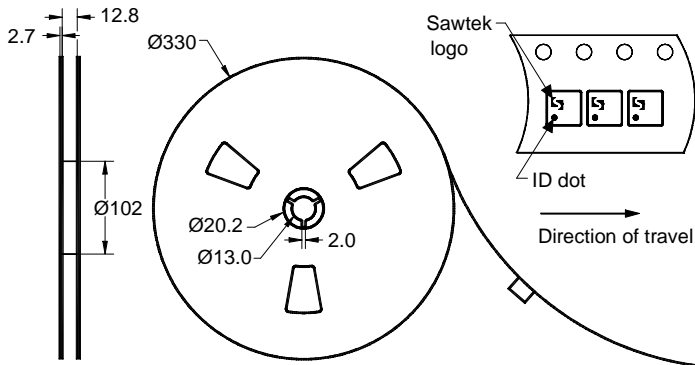
The date code consists of: JJJ = Julian day,  
Y = last digit of year, M = manufacturing site code

**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: 5000 units/reel


**Data Sheet**

**Maximum Ratings**


Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-40	+85	°C
Storage Temperature Range	T <sub>stg</sub>	-40	+85	°C
RF Power	P <sub>in</sub>	-	+10	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 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](#)

[Other Technical Information](#)

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