
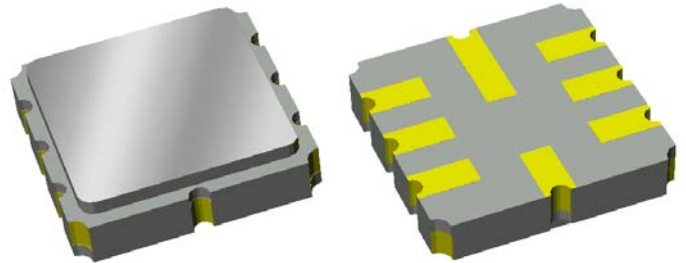


# Preliminary Data Sheet

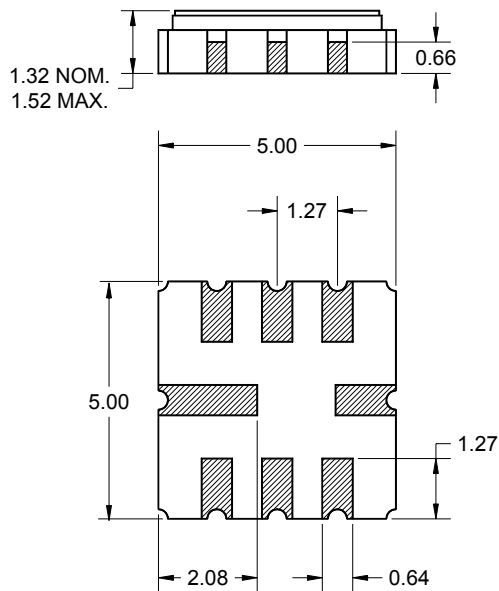
## Features

- WiMAX & Broadband Wireless applications
- High attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Hermetic
- RoHS compliant (2002/95/EC), Pb-free 



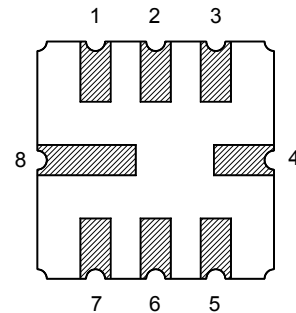
## Package

Surface Mount 5.00 x 5.00 x 1.32 mm



## Pin Configuration

Bottom View



Pin No.	Description
7	Input
3	Output
1,5	Ground
2,4,6,8	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

**Preliminary Data Sheet**

**Target Electrical Specifications <sup>(1,2)</sup>**

Operating Temperature Range: <sup>(3)</sup> -40 to +85 °C

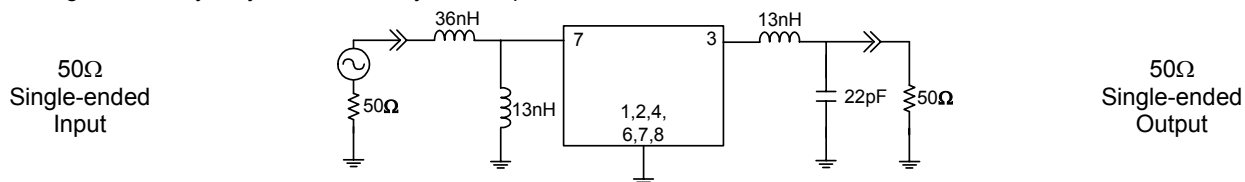
Parameter	Minimum	Typical	Maximum	Unit
Center Frequency	-	520	-	MHz
Insertion Loss at Center Frequency	-	10.8	12.25	dB
Lower 1 dB Bandedge <sup>(4)</sup>	-	516.74	517.5	MHz
Upper 1 dB Bandedge	522.5	523.01	-	MHz
1 dB Bandwidth <sup>(4)</sup>	6	6.2	-	MHz
3 dB Bandwidth <sup>(4)</sup>	6.9	7.09	-	MHz
10 dB Bandwidth <sup>(4)</sup>	-	8.15	9.3	MHz
30 dB Bandwidth <sup>(4)</sup>	-	11.3	11.8	MHz
Amplitude Variation <sup>(5)</sup> 517 - 523 MHz	-	1.05	2.0	dB p-p
Group Delay Variation <sup>(5)</sup> 517 - 523 MHz	-	125	200	ns p-p
Relative Attenuation <sup>(4)</sup> 10.0 - 350.0 MHz	45	55	-	dB
350.0 - 480.0 MHz	40	50	-	dB
480.0 - 514.1 MHz	30	37	-	dB
525.9 - 600.0 MHz	30	37	-	dB
600.0 - 800.0 MHz	30	55	-	dB
Source Impedance	-	50	-	Ω
Load Impedance	-	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 manufacturing tolerances
4. All attenuation measurements are referenced to IL at Center Frequency
5. Variation is defined as the total peak to peak variation over the defined frequency range

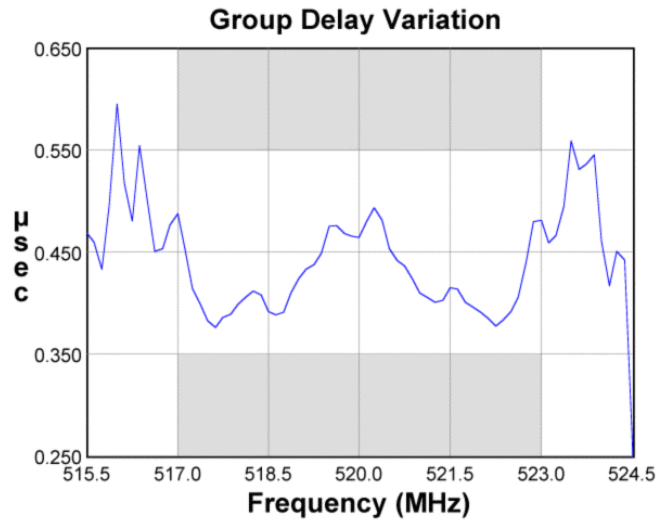
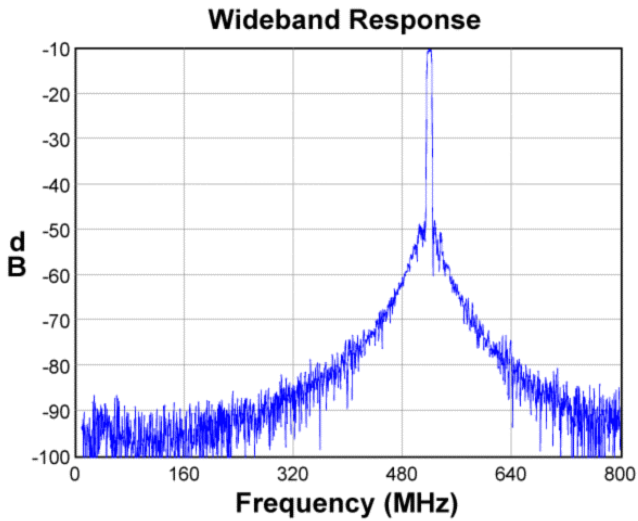
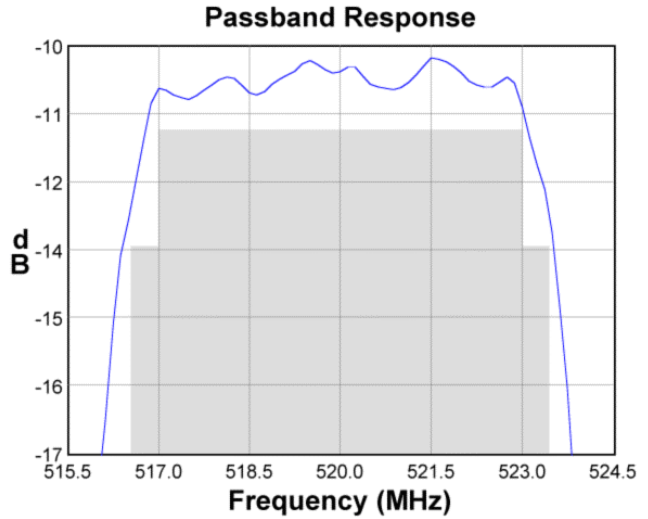
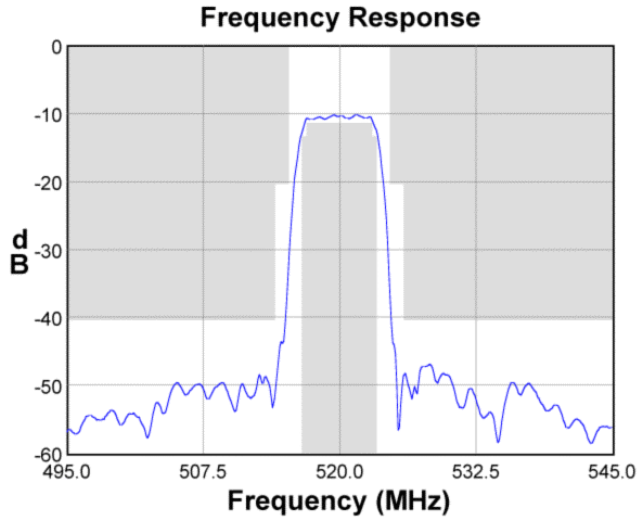
**Test Circuit:**

Actual matching values may vary due to PCB layout and parasitics

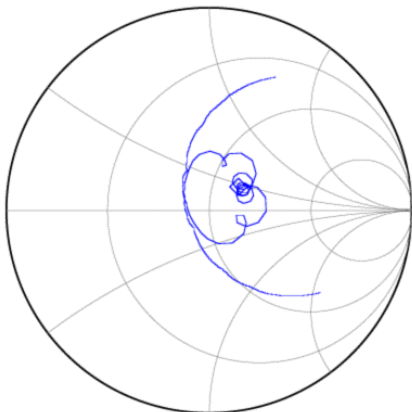


**Preliminary Data Sheet**

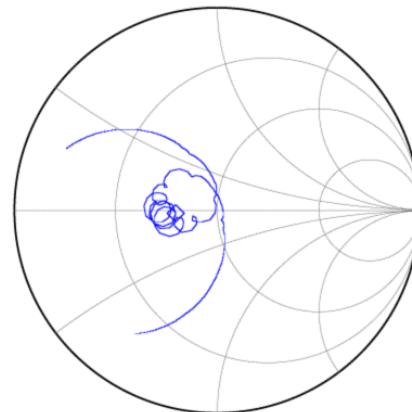
**Typical Performance (at +25°C)**



**Input Smith Chart**



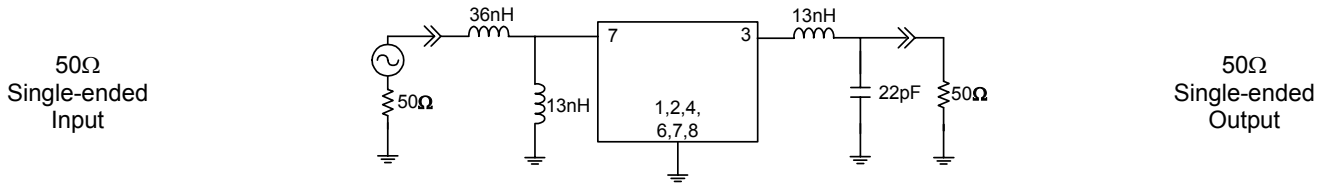
**Output Smith Chart**



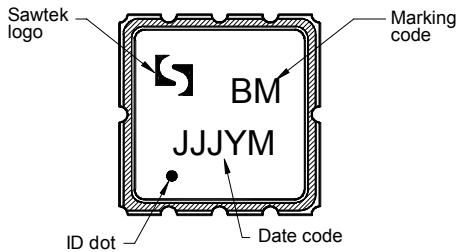
**Preliminary Data Sheet**

**Matching Schematics**

Actual matching values may vary due to PCB layout and parasitics

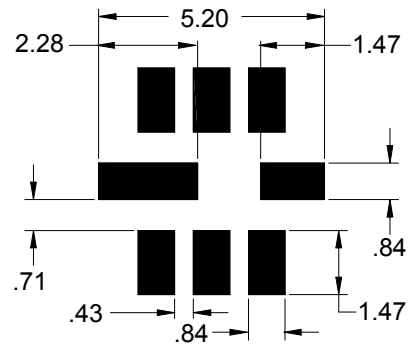


**Marking**



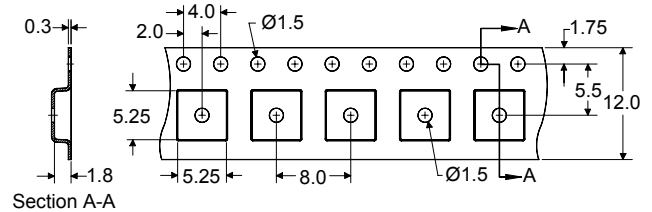
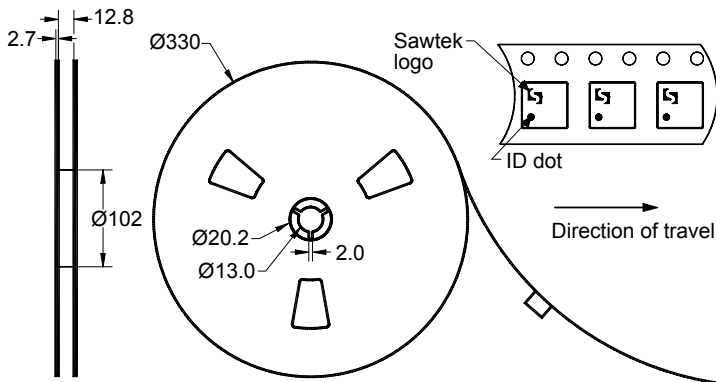
The date code consists of: JJJ = Julian day, Y = last digit of year, M = manufacturing site code

**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: 4000 units/reel


# Preliminary 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

## 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

## Links to Additional Technical Information

[PCB Layout Tips](#)

[Qualification Flowchart](#)

[Soldering Profile](#)

[S-Parameters](#)

[RoHS Information](#)

[Other Technical Information](#)

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