
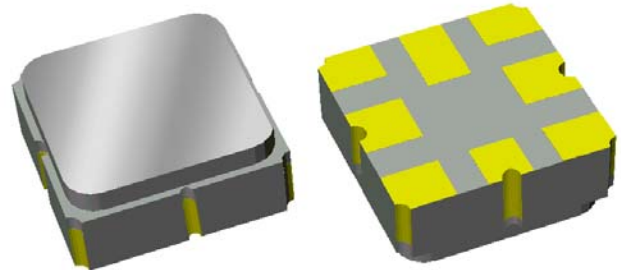


# Preliminary Data Sheet

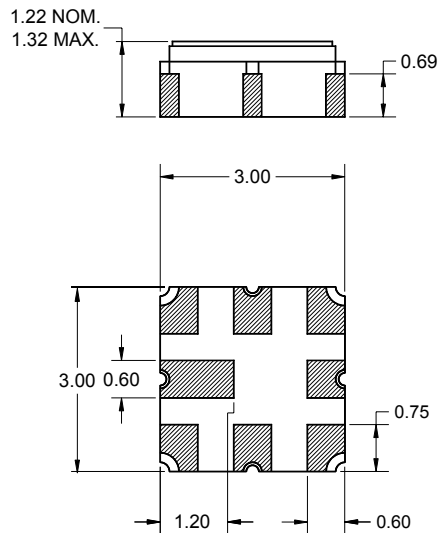
## Features

- For broadband applications
- Usable bandwidth of 8 MHz
- Low loss
- High attenuation
- No impedance matching required for operation at 200  $\Omega$
- Balanced operation
- Ceramic Surface Mount Package (SMP)
- Hermetic
- RoHS compliant (2002/95/EC), Pb-free 



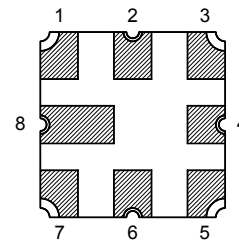
## Package

Surface Mount 3.00 x 3.00 x 1.22 mm



## Pin Configuration

Bottom View



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

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

# Preliminary Data Sheet

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

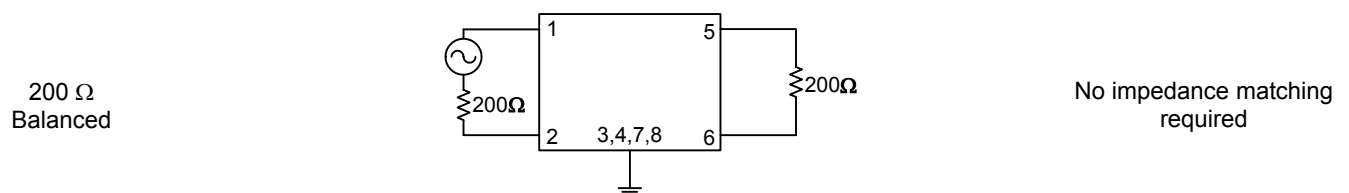
Operating Temperature Range: <sup>(2)</sup> +35 to +75 °C

Parameter <sup>(3)</sup>	Minimum	Typical	Maximum	Unit
<b>Center Frequency</b>	-	1216	-	MHz
<b>Maximum Insertion Loss</b> 1212 - 1220 MHz	-	3.75	4.5	dB
<b>12 dB Bandwidth <sup>(4)</sup></b>	-	23.1	24	MHz
<b>Stopband Rejection <sup>(4)</sup></b>				
500 - 1122 MHz	50	72	-	dB
1122 - 1136 MHz	60	75	-	dB
1136 - 1152 MHz	50	57	-	dB
1280 - 2000 MHz	44	63	-	dB
<b>Amplitude Ripple</b> 1212 - 1220 MHz (over any 6MHz)	-	0.29	1.0	dB
<b>Group Delay Ripple</b> 1212 - 1220 MHz	-	15	25	ns
<b>Source Impedance <sup>(5)</sup></b>	-	200	-	Ω
<b>Load Impedance <sup>(5)</sup></b>	-	200	-	Ω

### Notes:

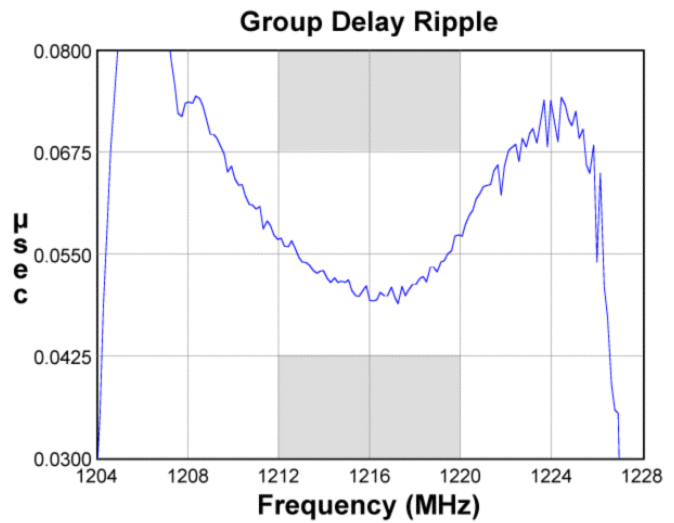
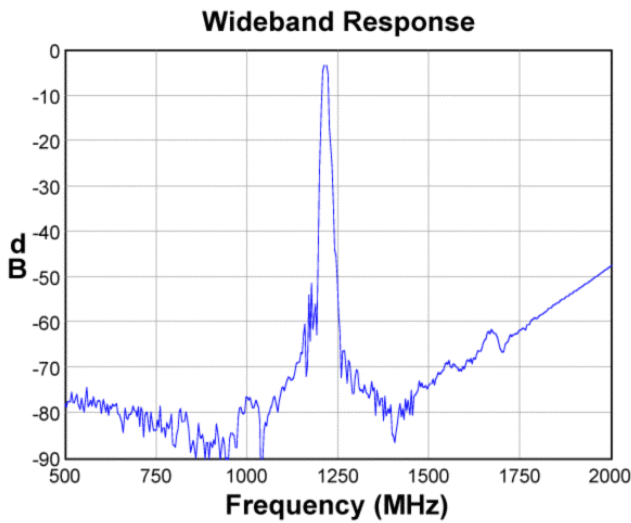
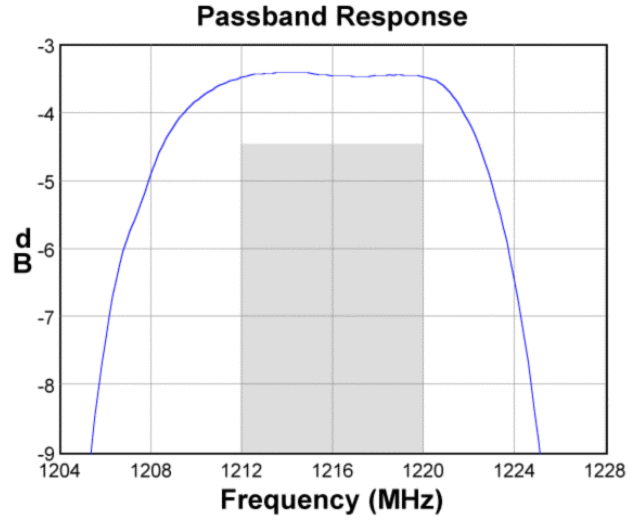
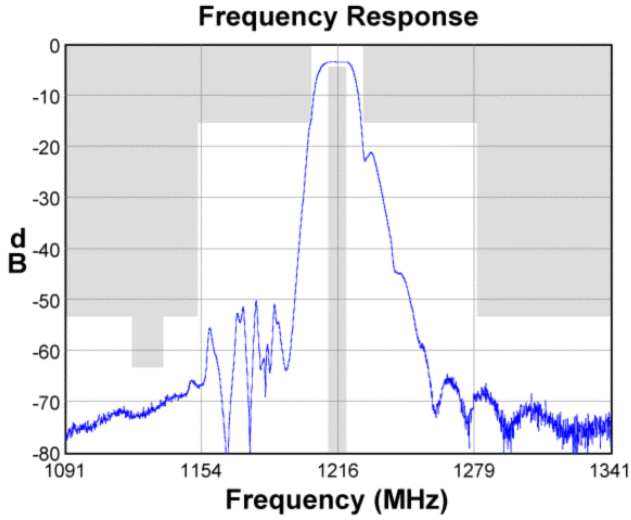
- All specifications are based on the test circuit shown below
- In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
- Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
- Referenced to insertion loss at center frequency
- This is the optimum impedance in order to achieve the performance shown

### Test Circuit:

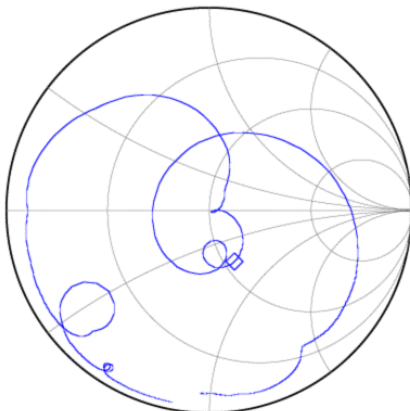


**Preliminary Data Sheet**

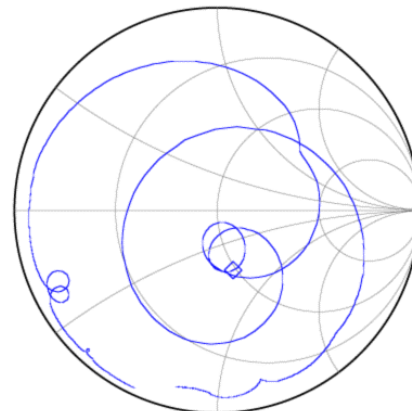
**Typical Performance (at +25°C)**



**Input Smith Chart**



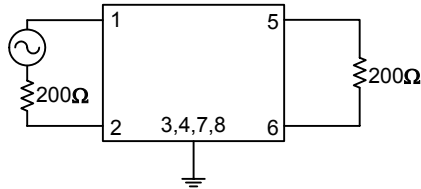
**Output Smith Chart**



**Preliminary Data Sheet**

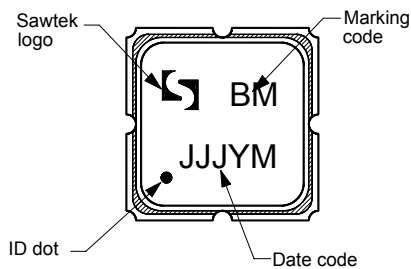
**Matching Schematics**

200  $\Omega$   
Balanced



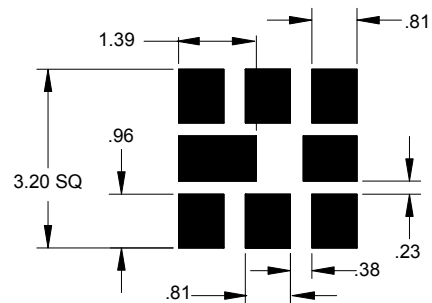
No impedance matching  
required

**Marking**



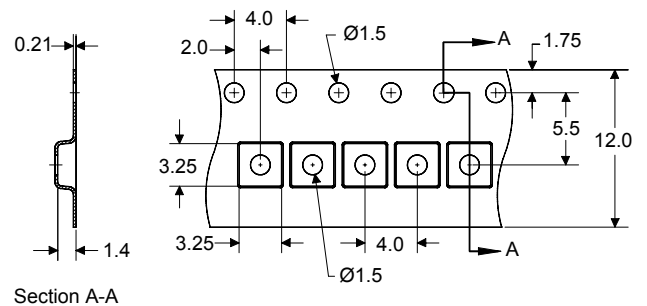
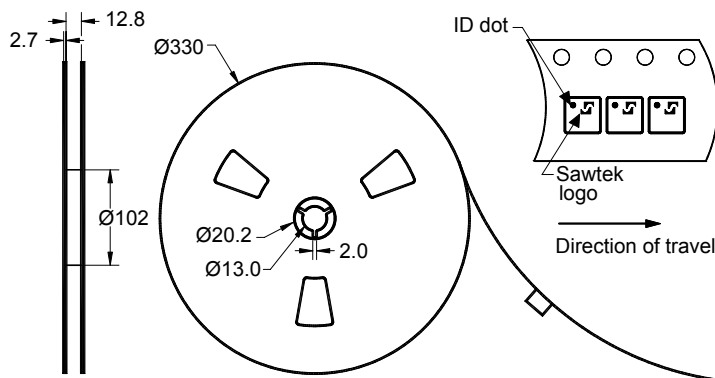
The date code consists of: JJJ = Julian day,  
Y = last digit of year, M = manufacturing site code

**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

# Preliminary Data Sheet

## Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	+35	+75	°C
Storage Temperature Range	T <sub>stg</sub>	+35	+75	°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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