
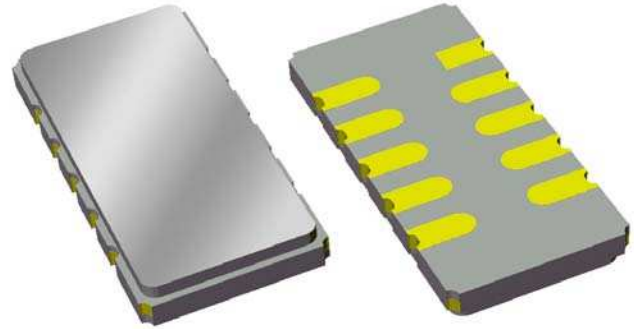


Preliminary Data Sheet

Features

- For GSM and EDGE applications
- Usable bandwidth of 0.22 MHz
- Typical 1 dB bandwidth of 0.34 MHz
- Low loss
- High attenuation
- Balanced operation at 200Ω or Single-ended operation at 50Ω (different matching required)
- Ceramic Surface Mount Package (SMP)
- Hermetic
- RoHS compliant (2002/95/EC), Pb-free 

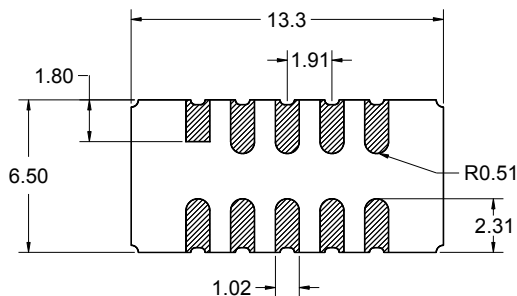
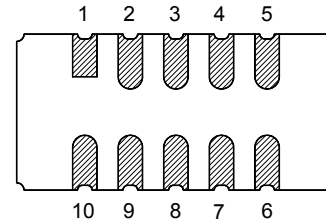
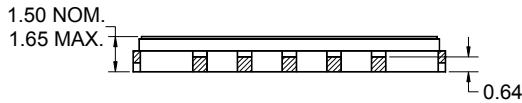


Package

Surface Mount 13.3 x 6.50 x 1.50 mm

Pin Configuration

Bottom View



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

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

Body: Al_2O_3 ceramic
 Lid: Kovar, Ni plated
 Terminations: Au plating 0.5 - 1.0 μm ,
 over a 2 - 6 μm Ni plating

Preliminary Data Sheet

Electrical Specifications ⁽¹⁾

Operating Temperature Range: ⁽²⁾ 0 to +70 °C

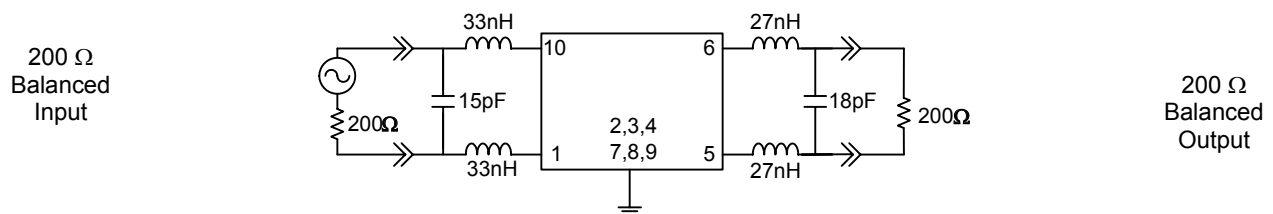
| Parameter ⁽³⁾ | Minimum | Typical | Maximum | Unit |
|-----------------------------------------------------------|---------|---------|---------|----------|
| Center Frequency (f_c) | - | 201 | - | MHz |
| Insertion Loss at 201 MHz | - | 6.1 | 7 | dB |
| 1 dB Lower Bandedge | - | 200.83 | 200.89 | MHz |
| 1 dB Upper Bandedge | 201.11 | 201.17 | - | MHz |
| Amplitude Variation ⁽⁴⁾ 200.89 - 201.11 MHz | - | 0.6 | 1 | dB p-p |
| Absolute Group Delay at f_c | 2.05 | 2.3 | 2.55 | μ s |
| Group Delay Variation 200.89 - 201.11 MHz | - | 0.8 | 1.5 | μ s |
| Stopband Attenuation ⁽⁵⁾ | | | | |
| $f_c \pm 0.3$ MHz to $f_c \pm 0.4$ MHz | 16 | 25 | - | dB |
| $f_c \pm 0.4$ MHz to $f_c \pm 0.6$ MHz | 27 | 29 | - | dB |
| $f_c \pm 0.6$ MHz to $f_c \pm 0.8$ MHz | 28 | 32 | - | dB |
| $f_c \pm 0.8$ MHz to $f_c \pm 1.5$ MHz | 36 | 40 | - | dB |
| $f_c \pm 1.5$ MHz to $f_c \pm 35$ MHz | 38 | 40 | - | dB |
| Source Impedance (Balanced) ⁽⁶⁾ | - | 200 | - | Ω |
| Load Impedance (Balanced) ⁽⁶⁾ | - | 200 | - | 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. Amplitude variation is defined as the difference between the lowest loss and the highest loss within defined frequency points
5. Referenced to insertion loss at 201 MHz
6. This is the optimum impedance in order to achieve the performance shown

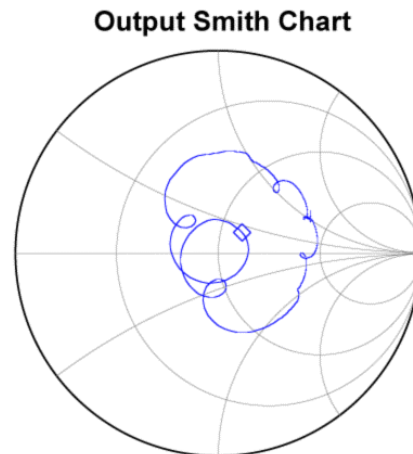
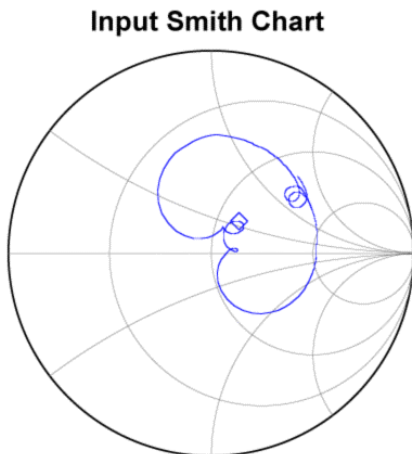
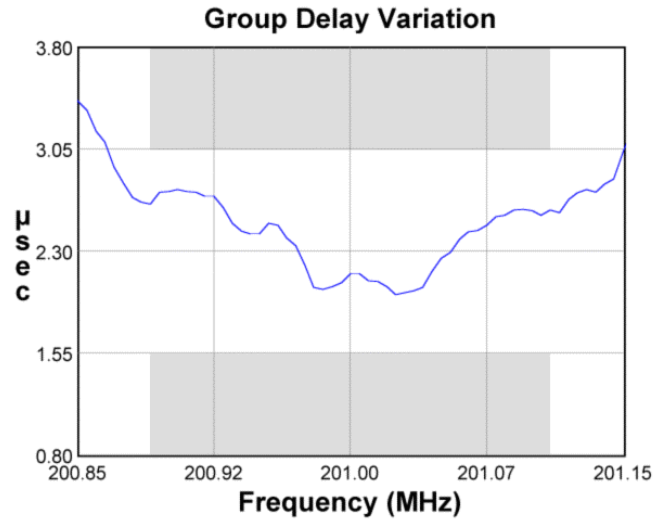
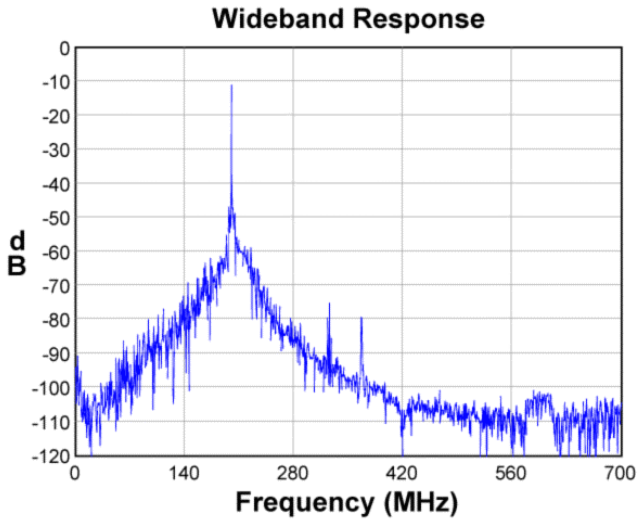
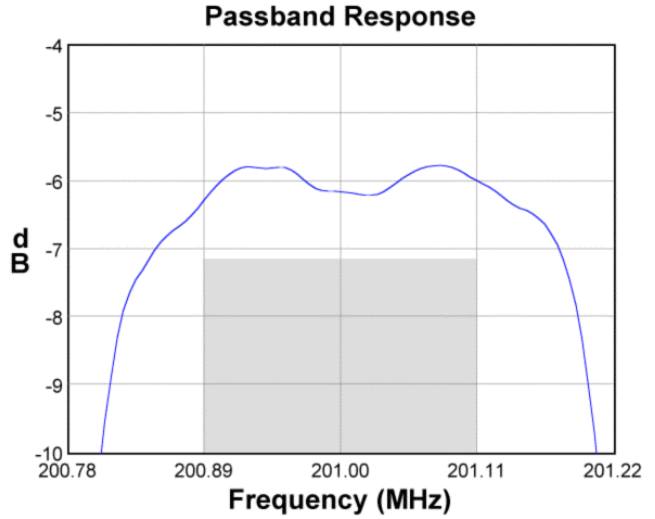
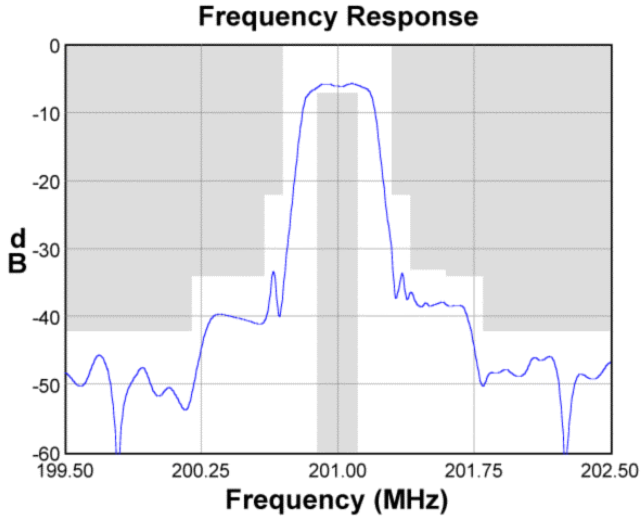
Test Circuit:

Actual matching values may vary due to PCB layout and parasitics



Preliminary Data Sheet

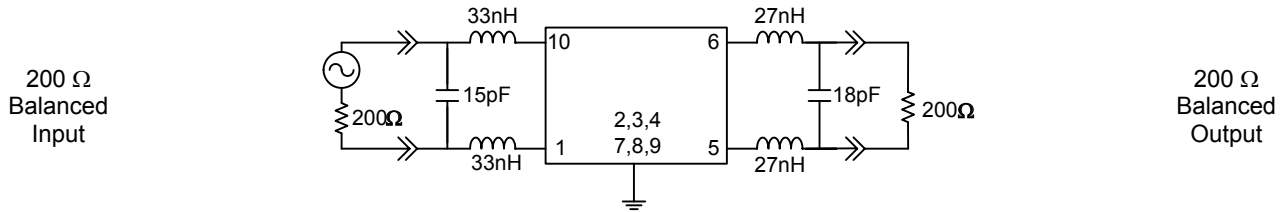
Typical Performance (at +25°C)



Preliminary Data Sheet

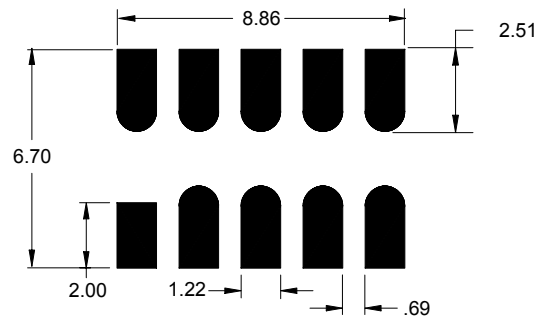
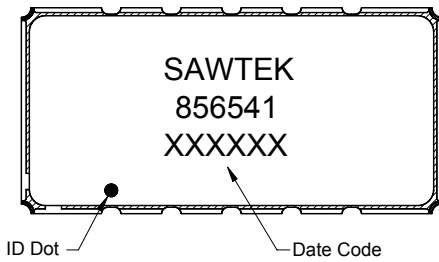
Matching Schematics

Actual matching values may vary due to PCB layout and parasitics



Marking

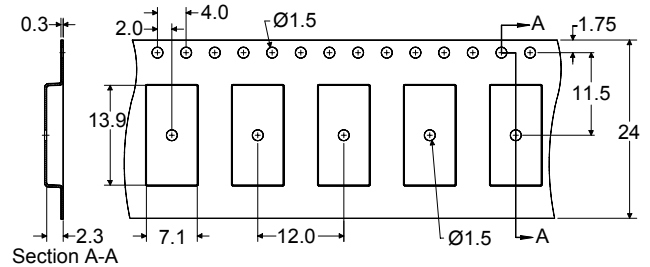
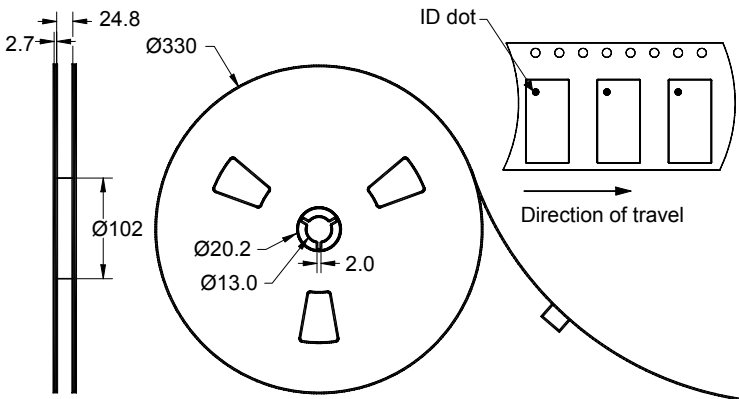
PCB Footprint



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:2000 units/reel


Preliminary Data Sheet

Maximum Ratings


| Parameter | Symbol | Minimum | Maximum | Unit |
|-----------------------------|------------------|---------|---------|------|
| Operating Temperature Range | T | 0 | +70 | °C |
| Storage Temperature Range | T _{stg} | -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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