
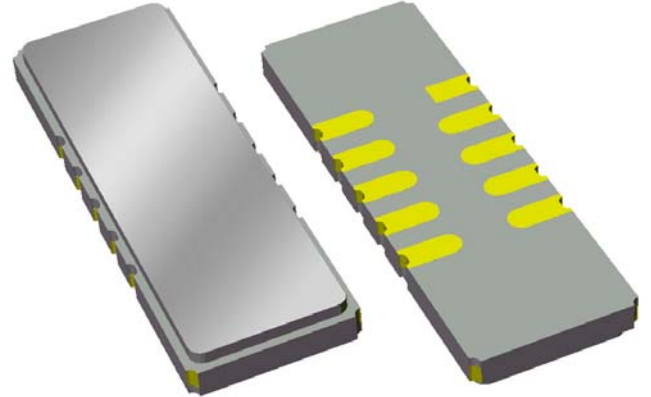


Preliminary Data Sheet

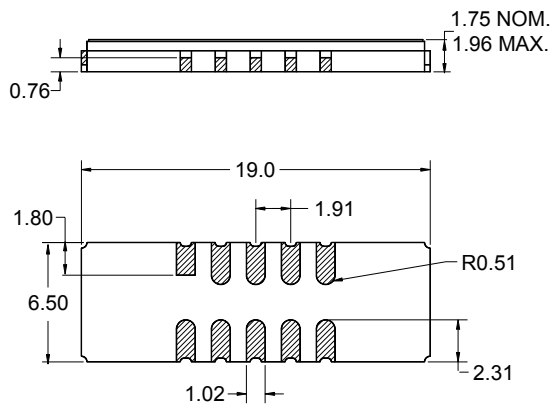
Features

- For IF applications
- Typical 3 dB bandwidth of 0.75 MHz
- High attenuation
- Single-ended operation
- Ceramic Surface Mount Package (SMP)
- Replaces Sawtek P/N 851902 (BW 3dB = 0.75MHz)
- Hermetic
- RoHS compliant (2002/95/EC), Pb-free 



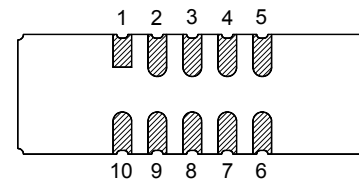
Package

Surface Mount 19.00 x 6.50 x 1.75 mm



Pin Configuration

Bottom View



| Pin No. | Description |
|---------|-------------|
| 5 | RF output |
| 10 | RF input |
| 1,6 | Ground |
| 2,3,4 | Case ground |
| 7,8,9 | Case ground |

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

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

Preliminary Data Sheet

Electrical Specifications ⁽¹⁾

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

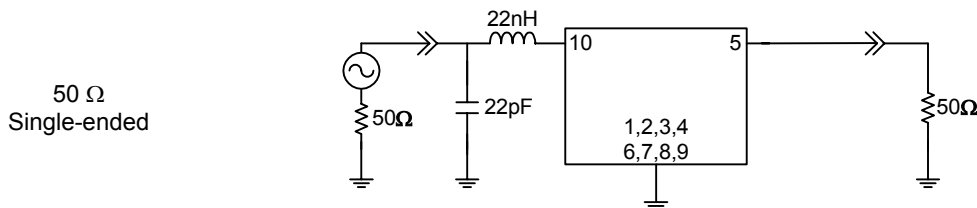
| Parameter ⁽³⁾ | Minimum | Typical | Maximum | Unit |
|--|---------|---------|---------|---------|
| Center Frequency | - | 140 | - | MHz |
| Minimum Insertion Loss | - | 20.8 | 23 | dB |
| Lower 1 dB Bandedge ⁽⁴⁾ | - | 139.722 | 139.805 | MHz |
| Upper 1 dB Bandedge | 140.195 | 140.264 | - | MHz |
| Lower 3 dB Bandedge ⁽⁴⁾ | - | 139.606 | 139.676 | MHz |
| Upper 3 dB Bandedge | 140.324 | 140.376 | - | MHz |
| Lower 40 dB Bandedge ⁽⁴⁾ | 139.035 | 139.123 | - | MHz |
| Upper 40 dB Bandedge | - | 140.912 | 140.965 | MHz |
| Amplitude Variation 139.805 - 140.195 MHz | - | 0.44 | 1 | dB p-p |
| Phase Linearity 139.805 - 140.195 MHz | - | 0.95 | 4 | deg p-p |
| Group Delay Variation 139.805 - 140.195 MHz | - | 62 | 240 | ns p-p |
| Relative Attenuation ⁽⁴⁾ | | | | |
| 15 - 138.5 MHz | 50 | 59.6 | - | dB |
| 141.5 - 155 MHz | 43 | 54.5 | - | dB |
| 155 - 219 MHz | 48 | 59.3 | - | dB |
| 219 - 239 MHz | - | 13.8 | - | dB |
| 239 - 248 MHz | 48 | 62.6 | - | dB |
| 248 - 268 MHz | - | 14.0 | - | dB |
| 268 - 350 MHz | 50 | 66.0 | - | dB |
| Terminating Source Impedance ⁽⁵⁾ | - | 50 | - | Ω |
| Terminating Load Impedance ⁽⁵⁾ | - | 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 and manufacturing tolerances
4. All attenuation measurements are measured relative to minimum insertion loss
5. This is the optimum impedance in order to achieve the performance shown

Test Circuit:

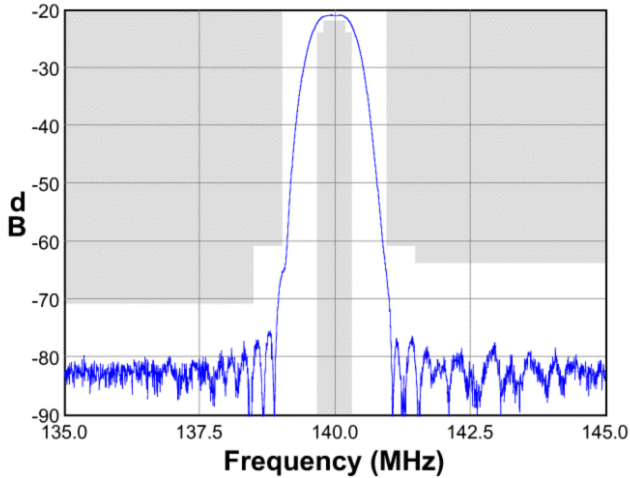
Actual matching values may vary due to PCB layout and parasitics



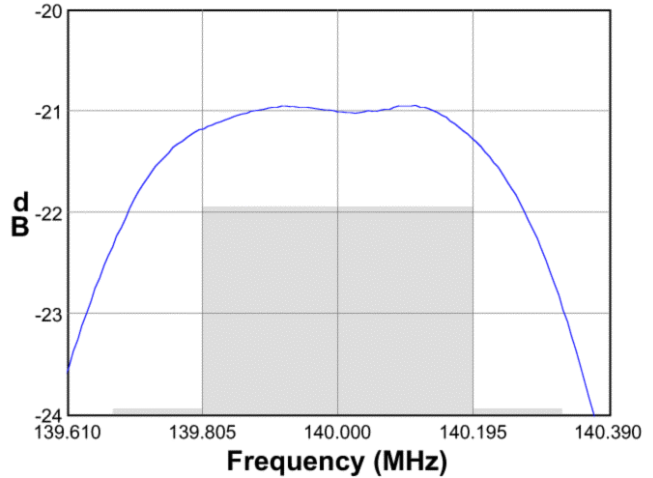
Preliminary Data Sheet

Typical Performance (at +25°C)

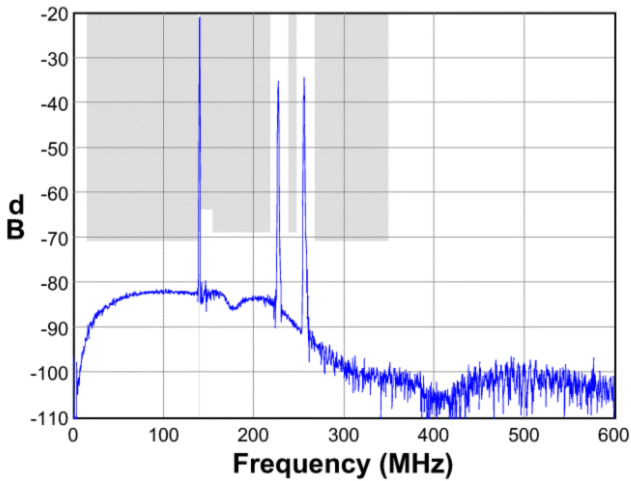
Frequency Response



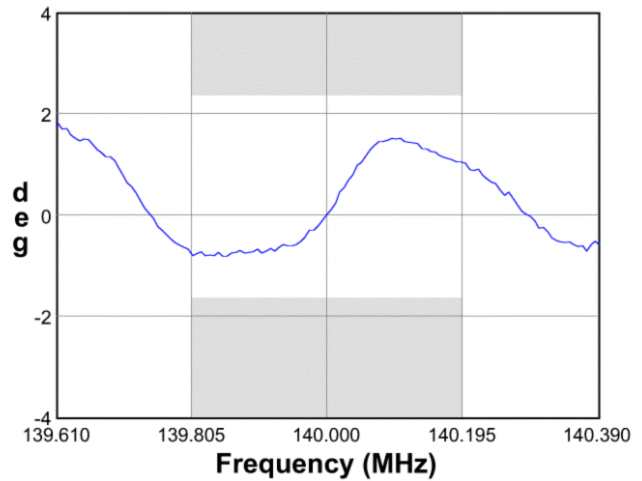
Passband Response



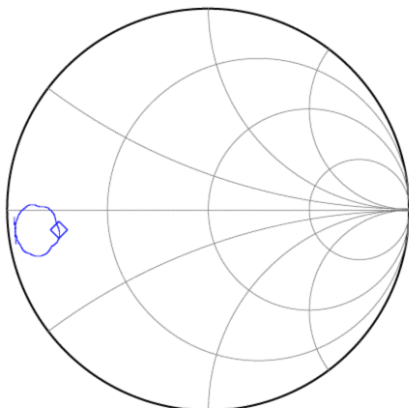
Wideband Response



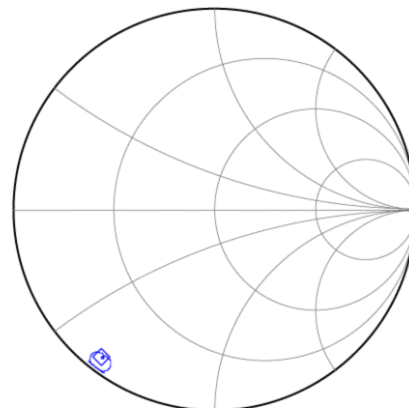
Phase Linearity



Input Smith Chart



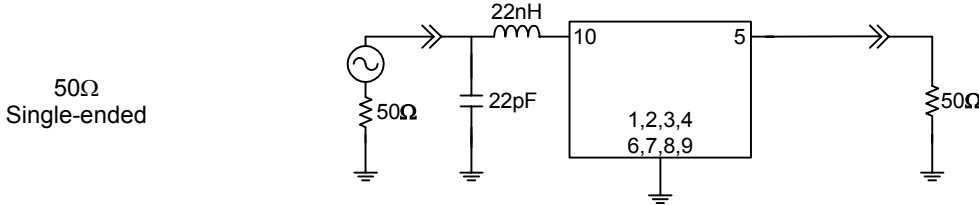
Output Smith Chart



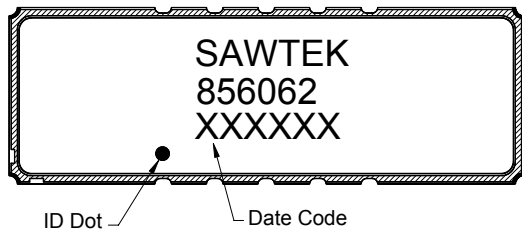
Preliminary Data Sheet

Matching Schematics

Actual matching values may vary due to PCB layout and parasitics

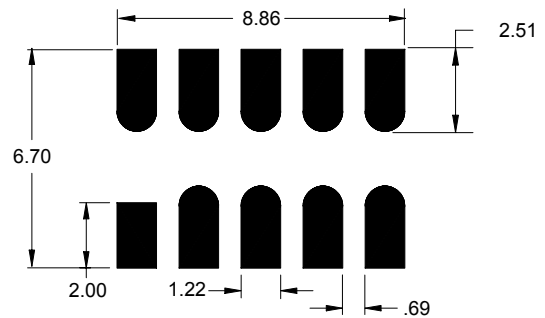


Marking



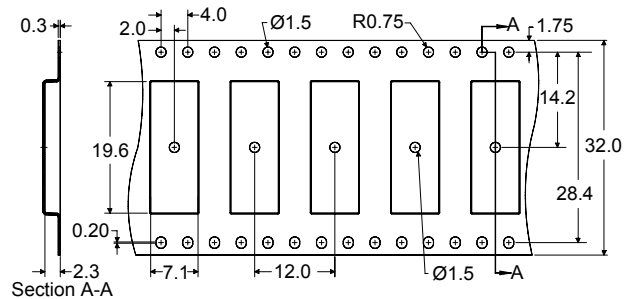
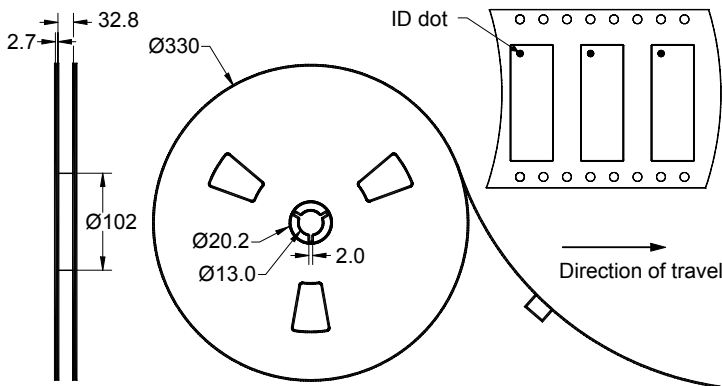
The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

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: 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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