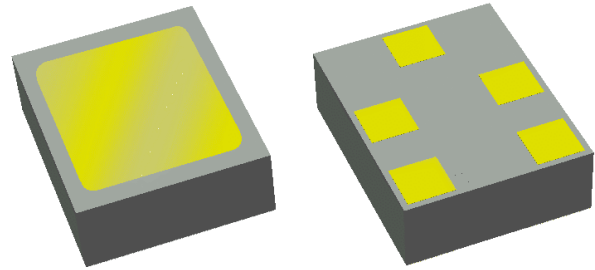


Preliminary Data Sheet

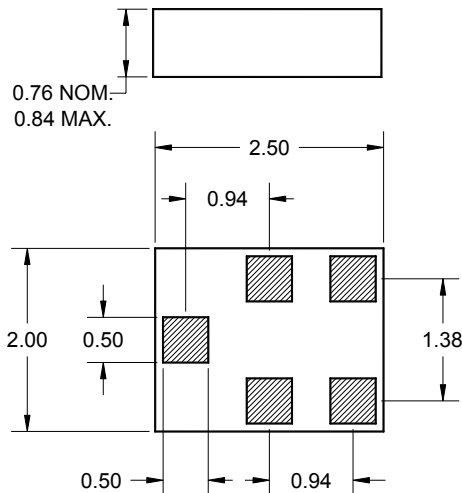
Features

- For GPS applications
- Usable bandwidth 2 MHz
- Super low loss
- High attenuation
- No impedance matching required for operation at 100 Ω
- Single-ended input
- Balanced output
- Superior amplitude and phase balance
- Ceramic Surface Mount Package (SMP)
- Small size



Package

Surface Mount 2.50 x 2.00 x 0.76 mm

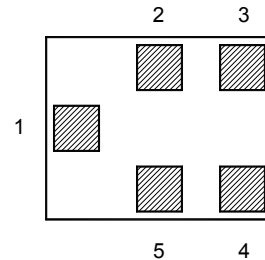


Dimensions shown are nominal in millimeters
 All tolerances are ±0.10mm

Body: Al_2O_3 ceramic
 Lid: Kovar or Alloy 42, Au over Ni plated
 Terminations: Au plating 0.5 - 1.0μm,
 over a 2 - 6μm Ni plating

Pin Configuration

Bottom View



| Pin No. | Description |
|---------|-----------------|
| 1 | Input |
| 2,5 | Case ground |
| 3,4 | Balanced output |

Preliminary Data Sheet

Electrical Specifications ⁽¹⁾

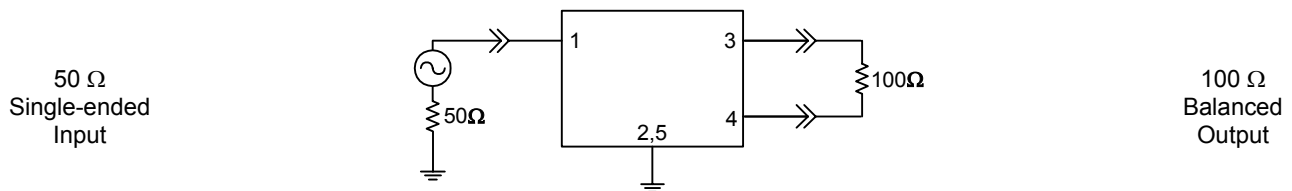
Operating Temperature: ⁽²⁾ +25 °C

| Parameter ⁽³⁾ | Minimum | Typical | Maximum | Unit |
|---|---------|-----------|---------|----------|
| Center Frequency | - | 1575.42 | - | MHz |
| Maximum Insertion Loss 1574.42 - 1576.42 MHz | - | 1.4 | 1.5 | dB |
| Absolute Attenuation | | | | |
| DC - 1450 MHz | 30 | 38 | - | dB |
| 1450 - 1475 MHz | 27 | 31 | - | dB |
| 1475 - 1525 MHz | 15 | 26 | - | dB |
| 1625 - 1675 MHz | 12 | 14 | - | dB |
| 1675 - 1775 MHz | 20 | 22 | - | dB |
| 1775 - 3155 MHz | 30 | 35 | - | dB |
| 3155 - 6000 MHz | 35 | 45 | - | dB |
| Input/Output Return Loss 1574.42 - 1576.42 MHz | 10 | 16 | - | dB |
| Output Amplitude Balance (S₃₁/S₂₁) 1574.42 - 1576.42 MHz | - | 0.5 | 0.75 | dB |
| Output Phase Balance $\phi(S_{31}) - \phi(S_{21})$ 1574.42 - 1576.42 MHz | 180 | 185 | 190 | degree |
| Nominal Source Impedance | - | 50 | - | Ω |
| Optimal Load Impedance (balanced) ⁽⁴⁾ | - | 120 + j35 | - | Ω |

Notes:

1. All specifications are based on the test circuit shown below
2. This specification is valid for room temperature only. The specification over the full temperature range(s) is available on the next page(s)
3. Electrical margin has been built into the design to account for the variations due to manufacturing tolerances
4. This is the optimum impedance for maximum power transfer over passband

Test Circuit:



Preliminary Data Sheet

Electrical Specifications ⁽¹⁾

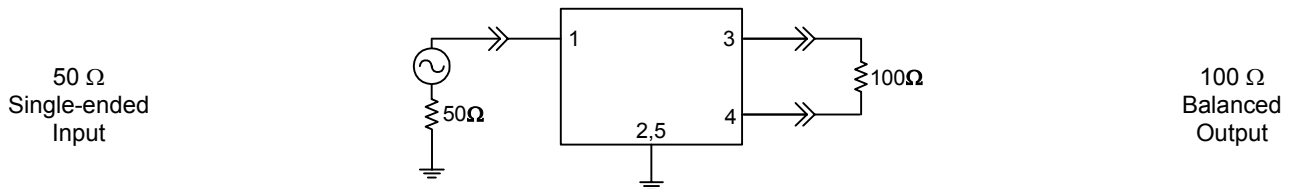
Operating Temperature Range: ⁽²⁾ -30 to +85 °C

| Parameter ⁽³⁾ | Minimum | Typical | Maximum | Unit |
|---|---------|-----------|---------|----------|
| Center Frequency | - | 1575.42 | - | MHz |
| Maximum Insertion Loss 1574.42 - 1576.42 MHz | - | 1.4 | 1.7 | dB |
| Absolute Attenuation | | | | |
| DC - 1450 MHz | 30 | 38 | - | dB |
| 1450 - 1475 MHz | 27 | 31 | - | dB |
| 1475 - 1525 MHz | 14 | 20 | - | dB |
| 1625 - 1675 MHz | 10 | 13 | - | dB |
| 1675 - 1775 MHz | 20 | 22 | - | dB |
| 1775 - 3155 MHz | 30 | 35 | - | dB |
| 3155 - 6000 MHz | 35 | 45 | - | dB |
| Input/Output Return Loss 1574.42 - 1576.42 MHz | 10 | 16 | - | dB |
| Output Amplitude Balance (S_{31}/S_{21}) 1574.42 - 1576.42 MHz | - | 0.6 | 1 | dB |
| Output Phase Balance $\phi(S_{31}) - \phi(S_{21})$ 1574.42 - 1576.42 MHz | 180 | 187.5 | 195 | degree |
| Nominal Source Impedance | - | 50 | - | Ω |
| Optimal Load Impedance (balanced) ⁽⁴⁾ | - | 120 + j35 | - | Ω |

Notes:

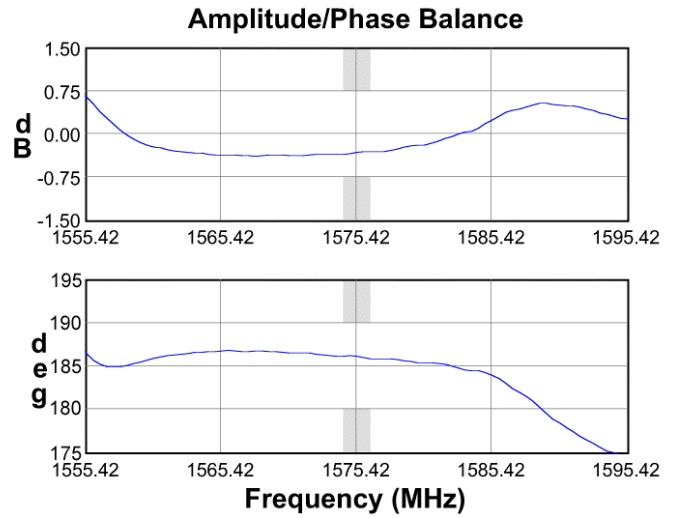
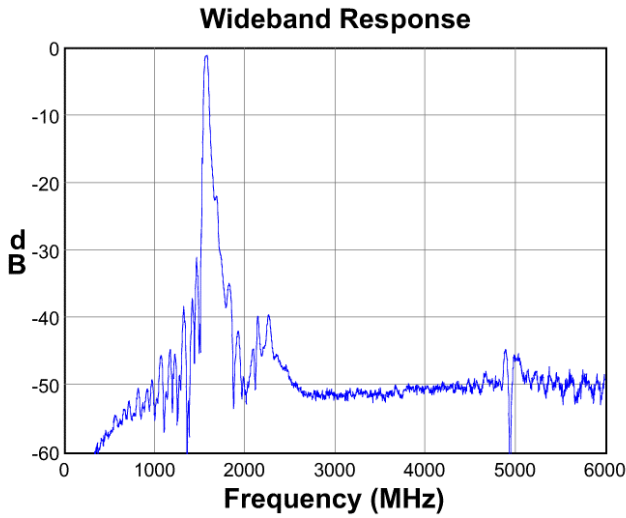
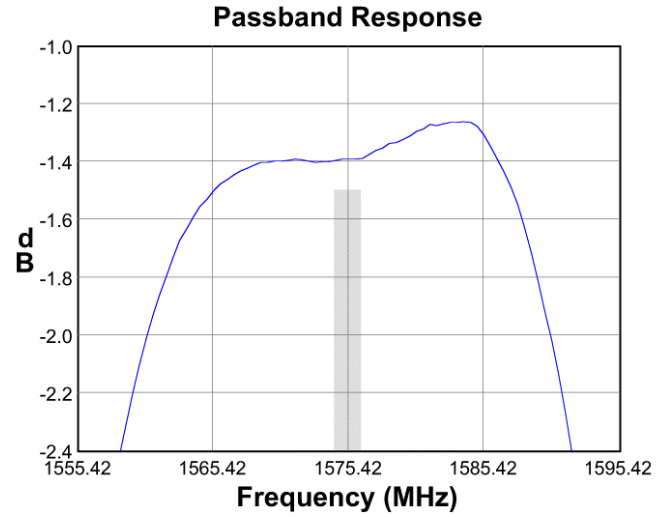
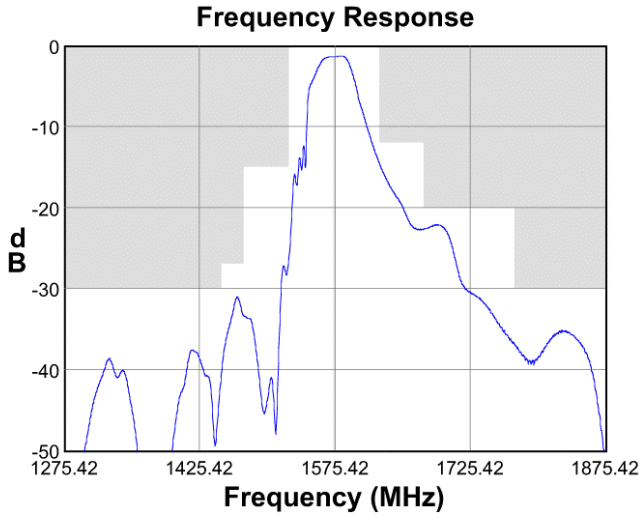
1. All specifications are based on the test circuit shown below
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
4. This is the optimum impedance for maximum power transfer over passband

Test Circuit:

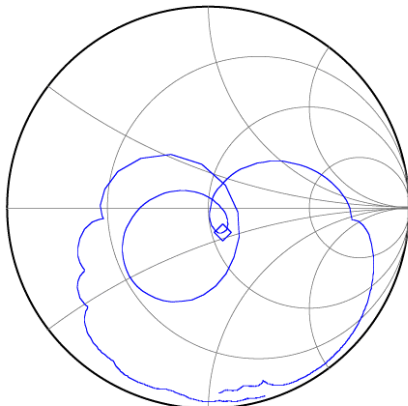


Preliminary Data Sheet

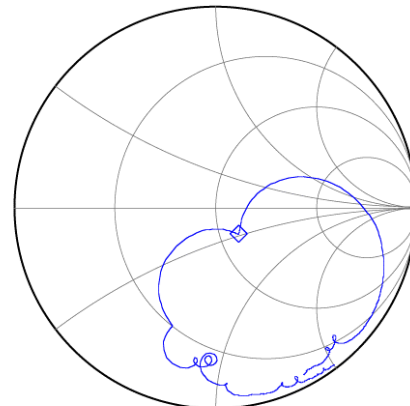
Typical Performance (at +25°C)



Input Smith Chart



Output Smith Chart




Preliminary Data Sheet

Maximum Ratings

| Parameter | Symbol | Minimum | Maximum | Unit |
|-----------------------------|------------------|---------|---------|------|
| Operating Temperature Range | T | -30 | +85 | °C |
| Storage Temperature Range | T _{stg} | -40 | +85 | °C |

Warnings

- Electrostatic Sensitive Device (ESD) 
- Avoid ultrasonic exposure

Links to Additional Technical Information

[PCB Layout Tips](#)

[Qualification Flowchart](#)

[Soldering Profile](#)

[S-Parameters](#)

[Other Technical Information](#)

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[Representatives or distributors](#)