The DR-VE-0.5-MO is a non-inverting VErsatile RF amplifier module designed for analog, pulse and digital applications up to 750 MHz.

The following table is a summary of both specifications and measurements. All specifications given at 25°C.

<table>
<thead>
<tr>
<th>RECOMMENDED OPERATING CONDITIONS</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input peak-to-peak voltage (Single-ended) V_{pp}</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Input impedance Ω</td>
<td>-</td>
<td>50</td>
<td>-</td>
</tr>
<tr>
<td>Output impedance matching (from modulator input impedance) Ω</td>
<td>-</td>
<td>50 or 10 k</td>
<td>-</td>
</tr>
<tr>
<td>Electrical frequency range (Defined) MHz</td>
<td>DC</td>
<td>750</td>
<td>-</td>
</tr>
<tr>
<td>Low frequency cutoff (-3dB) Hz</td>
<td>DC</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>High frequency cutoff (-3dB) MHz</td>
<td>700</td>
<td>750</td>
<td>-</td>
</tr>
<tr>
<td>Voltage gain (10 kΩ output impedance) V/V</td>
<td>26</td>
<td>28</td>
<td>-</td>
</tr>
<tr>
<td>Power Gain (50 Ω output impedance) dB</td>
<td>22</td>
<td>23</td>
<td>-</td>
</tr>
<tr>
<td>Output voltage peak to peak (@10MHz) (10 kΩ output impedance) V</td>
<td>19</td>
<td>19.6</td>
<td>21</td>
</tr>
<tr>
<td>Positive output saturation voltage (10 kΩ output impedance) V</td>
<td>-</td>
<td>9.8</td>
<td>-</td>
</tr>
<tr>
<td>Negative output saturation voltage (10 kΩ output impedance) V</td>
<td>-</td>
<td>-9.8</td>
<td>-</td>
</tr>
<tr>
<td>Power supply voltages V⁺ (user supplied) V</td>
<td>11.5</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>Current consumption V⁺ mA</td>
<td>20</td>
<td>-</td>
<td>100</td>
</tr>
<tr>
<td>Power supply voltages V⁻ (user supplied) V</td>
<td>-11.5</td>
<td>-12</td>
<td>-13</td>
</tr>
<tr>
<td>Current consumption V⁻ mA</td>
<td>-20</td>
<td>-</td>
<td>-100</td>
</tr>
</tbody>
</table>

| Analog Mode |
|------------------------|---|---|---|
| Total harmonic distortion @10MHz, Pin= -10dBm | % | 0.08 | - |
| @50MHz, Pin= -10dBm | - | 0.8 | - |
| @100MHz, Pin= -10dBm | - | 3 | - |

| Pulse Mode |
|------------------------|---|---|---|
| Frequency repetition rate MHz | 0 | 200 | - |
| Pulse width ns | 2 | - | - |
| Rise time / Fall time ns | - | 1 | 1.2 |

| Digital Mode |
|------------------------|---|---|---|
| Data Rate (PRBS Digital Mode) Mb/s | 0 | 500 | - |
| Rise time / Fall time ns | - | 1 | 1.2 |

| MAXIMUM RATINGS |
|----------------------|---|---|---|
| Operating temperature °C | 0 | - | 55 |
| Storage temperature °C | -40 | - | 85 |
| Maximum input voltage V_{pp} | - | 10 | - |
| Maximum power supply voltage V | -16 | - | 16 |

| MECHANICAL |
|----------------------|---|---|---|
| Product (module) typical dimension (comes with metallic cover) mm³ | - | 50 x 40 x 10.4 | - |
| Input RF connectors | - | SMA female |
| Output RF connector | - | SMA male |
Mechanical drawing
**Typical Output Response**

**Measured small signal bandwidth** 10 MHz – 1 GHz (Pin = -30 dBm)

Conditions: \( V^+ = +12 \text{V} \), \( V^- = -12 \text{V} \), 50 Ω
DC to 10 MHz bandwidth (Vin = 50 mVpp)
Conditions: V^+ = +12 V, V^- = -12 V, 10 kΩ

DC signal gain
Conditions: V^+ = +12 V, V^- = -12 V, 10 kΩ
**Pulse Mode**

Conditions: $V^+ = +12 \text{ V}$, $V^- = -12 \text{ V}$.

- **Pulse Width = 5 ns**
- **Pulse Width = 2 ns**
- **Width = 20 ns**

Typical 20 Vpp output square signal

Frequency repetition rate 10 MHz

Input voltage 750 mVpp

1 MΩ impedance output matching
Digital (PRBS) mode

Conditions: $V^+ = +12$ V, $V^- = -12$ V, $V_{in} = 300$ mV$_{pp}$, 50 Ω

Data Rate = 100 Mb/s

Data Rate = 500 Mb/s