ZSAT-31R5+

**Digital Step Attenuator**

50Ω TTL Control, Pin Diode 10 to 1000 MHz

**Maximum Ratings**
- Operating Temperature: -55°C to 100°C
- Storage Temperature: -55°C to 125°C
- Input Power: 15 dBm
- DC Voltage: 5.5 V
- TTL: 5.5V

Permanent damage may occur if any of these limits are exceeded.

**Features**
- precision 6 bit attenuator
- wideband, 10 to 1000 MHz
- excellent step accuracy, 0.2 dB typ.

**Applications**
- test sets
- cellular
- gain control transmitters/receivers

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### Digital Step Attenuator Electrical Specifications

<table>
<thead>
<tr>
<th>MODEL NO.</th>
<th>FREQUENCY (MHz)</th>
<th>PRIMARY ATTENUATION STEPS (dB) @ CONTROL PORT</th>
<th>ATTENUATION (dB) LOGIC STATE (1,1,1,1,1)**</th>
<th>VSWR (:1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZSAT-31R5</td>
<td>10 to 1000</td>
<td>0.5x0.18 1x0.25 2x0.25 4x0.3 8x0.4 16x0.5</td>
<td>31.5 7.0</td>
<td>L=10 to 100 MHz M=100 to 500 MHz U=500 to 1000 MHz</td>
</tr>
</tbody>
</table>

** Total attenuation above thru-loss.
1. Step accuracy is specified for basic steps. For combination of steps accuracy is additive.
2. Thru-loss is minimum insertion loss with all attenuation elements bypassed (All TTL controls state are Low)

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### Additional Specifications

- **DC Voltage**: +5V
- **DC Current**: 12mA max.
- Switching Time (50% TTL to within specified accuracy of the next-selected attenuation step, and to within 0.1 dB of steady-state Thru-Loss): 10µs typ., 15µs max.
- **TTL Input High Threshold**: 2V min
- **TTL Input Low Threshold**: 0.8V max.
- **TTL Toggle Rate**: 50 kHz typ.
- **1dB Compression**: 10 dBm (10-100 MHz) +15 dBm (100-1000MHz)

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**Notes**
- Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
- Electrical specifications and performance data contained in this specification document are based on Mini-Circuit's applicable established test performance criteria and measurement instructions.
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