Coaxial Voltage Variable Attenuator

ZX73-2500+

50Ω 10 to 2500 MHz

Maximum Ratings
Operating Temperature -55°C to 85°C
Storage Temperature -55°C to 85°C
Absolute Max. Supply Voltage (V+) 12V
Absolute Max. Control Voltage (Vctrl) 20V
Absolute Max. RF Input Level +20 dBm

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

Features
• Broadband, 10-2500 MHz
• IP3, +43 dBm typ.
• 40 dB attenuation @ 1500 MHz
• Good VSWR at in/out ports over attenuation range
• No external bias and RF matching network required
• Shielded case
• Protected by US Patent 6,790,049

Applications
• Variable gain amplifier
• Power level control
• Feed-forward amplifiers
• ALC circuits

Outlines (GD958)

Outline Dimensions (inch

<table>
<thead>
<tr>
<th>Width</th>
<th>Height</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>1.20</td>
<td>.75</td>
<td>.46</td>
</tr>
<tr>
<td>D</td>
<td>E</td>
<td>F</td>
</tr>
<tr>
<td>.35</td>
<td>.27</td>
<td>.18</td>
</tr>
<tr>
<td>G</td>
<td>H</td>
<td>J</td>
</tr>
<tr>
<td>.17</td>
<td>.45</td>
<td>.59</td>
</tr>
<tr>
<td>.33</td>
<td>1.02</td>
<td>3.08</td>
</tr>
</tbody>
</table>

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Notes:
* T dimension is 2.05 inch (52.07 mm) for GD1163 Case Style.

Electrical Specifications (T_{AMB} = 25°C)

<table>
<thead>
<tr>
<th>FREQ. (MHz)</th>
<th>MIN. INSERTION LOSS, dB (+15V)</th>
<th>MAX. ATTENUATION dB (0V)</th>
<th>INPUT POWER Voltage (V)</th>
<th>CONTROL POWER Current (mA)</th>
<th>IP3 dBm</th>
<th>RETURN LOSS (dB)</th>
<th>POWER SUPPLY Voltage (V)</th>
<th>POWER SUPPLY Current (mA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>3.0</td>
<td>4.6</td>
<td>+20</td>
<td>0</td>
<td>17</td>
<td>30</td>
<td>+3 to +5</td>
<td>5</td>
</tr>
<tr>
<td>500</td>
<td>3.3</td>
<td>5.0</td>
<td>+20</td>
<td>0</td>
<td>17</td>
<td>30</td>
<td>+3 to +5</td>
<td>5</td>
</tr>
<tr>
<td>1500</td>
<td>4.0</td>
<td>6.2</td>
<td>+20</td>
<td>0</td>
<td>17</td>
<td>30</td>
<td>+3 to +5</td>
<td>5</td>
</tr>
</tbody>
</table>

Notes:
Rise/Fall time: 14µSec/25µSec Typ.
Switching Time, turn on/off: 14µSec/25µSec Typ.

Improved R. Loss/in/out performance can be achieved at certain frequencies by choosing a V+ between +3V to +5V

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

+RoHS Compliant
The +Suffix identifies RoHS Compliance. See our website for RoHS Compliance methodologies and qualifications

Equivalent Schematic

TYPICAL ATTENUATION AT 1000MHz

Notes:
A. 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.
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Performance Charts

ZX73-2500+

ATTENUATION Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=3V

ATTENUATION Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=5V

ATTENUATION Vs. INPUT POWER
OVER CONTROL VOLTAGES AT 1000MHz @ V+=3V

ATTENUATION Vs. INPUT POWER
OVER CONTROL VOLTAGES AT 1000MHz @ V+=5V

INPUT RETURN LOSS Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=3V

INPUT RETURN LOSS Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=5V

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ZX73-2500+
OUTPUT RETURN LOSS Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=3V

ZX73-2500+
OUTPUT RETURN LOSS Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=5V

ZX73-2500+
IP3 Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=3V

ZX73-2500+
IP3 Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=5V

ZX73-2500+
PHASE SHIFT Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=3V

ZX73-2500+
PHASE SHIFT Vs. FREQUENCY
OVER CONTROL VOLTAGES @ V+=5V