PMI MODEL NUMBER SDLVA-0R5G18G-50R-30DBM IS A SDLVA (SUCCESSIVE DETECTION LOGARITHMIC VIDEO AMPLIFIER) DESIGNED TO OPERATE OVER THE 0.5GHZ TO 18GHZ FREQUENCY RANGE. THIS MODEL IS DESIGNED FOR ULTRA HIGH SPEED APPLICATIONS WHILE MAINTAINING FLATNESS AND ACCURACY.

July 19, 2016

Tested By: J.Emperador  
Designed by: Paul Kuhn
SUMMARY TEST DATA
ON
SDLVA-0R5G18G-50R-30DBM

DESCRIPTION
PMI MODEL NUMBER SDLVA-0R5G18G-50R-30Dbm A SDLVA (SUCCESSIVE DETECTION LOGARITHMIC VIDEO AMPLIFIER) DESIGNED TO OPERATE OVER THE 0.5GHz TO 16GHz FREQUENCY RANGE. THIS MODEL IS DESIGNED FOR ULTRA HIGH SPEED APPLICATIONS WHILE MAINTAINING FLATNESS AND ACCURACY.

SPECIFICATIONS
- FREQUENCY: 0.5 GHz to 16 GHz
- TSS: -71 dBm MIN
- VSWR: 2.51 MAX
- VIDEO OUTPUT RANGE: 0 V DC TO 2.2 V DC INTO A 50 Ω LOAD
- MAX VIDEO OUTPUT: 24 V
- INPUT POWER: +30 dBm CW MAX
- LOG RANGE: -70 dBm to 0 dBm
- LOG SLOPE: 25 mV/β (±10%) @ 50 Ω LOAD
- LOG SLOPE INTERCEPT POINT: AT -70 dBm RF INPUT VIDEO OUT = 250 mV (NOM) @ +25° C
- PULSE RANGE: 50 ns to CW
- PULSE RISE TIME (10% to 90%): 20 ns MAX
- PULSE OVERSHOOT: 1 dB MAX WITH 50 Ω LOAD
- PULSE FALL TIME (90% to 10%): 10 ns MAX
- POWER SUPPLY: +12 to +15 VDC @ 400 mA MAX
- CONNECTORS: SMA FEMALE CONNECTORS
- RF OUT: INTERNALLY NOT CONNECTED
- FINISH: TOP SURFACE - BLUE EPOXY POLYIMIDE COATING IAW MIL-C-27275, TYPE I OVER EPOXY POLYIMIDE PRIMER IAW MIL-P-23377, TYPE I, CLASS 2 OR 3.
- BOTTOM SURFACE - GOLD ALODINE CHEMICAL CONVERSION COATING / MIL-C-5541, CLASS 1A.

OPTIONS
- RFID: RF OUTPUT INTERNALLY CONNECTED

ENVIRONMENTAL RATING
- TEMPERATURE: -60°C TO +85°C (OPERATING)
- TEMPERATURE: -65°C TO +125°C (STORAGE)
- HUMIDITY: MIL-STD-202, METHOD 103B, COND. B
- SHOCK: MIL-STD-202, METHOD 204B, COND. B
- VIBRATION: MIL-STD-202, METHOD 204D, COND. B
- ALTITUDE: MIL-STD-202, METHOD 204C, COND. B
- TEMPERATURE CYCLE: MIL-STD-202, METHOD 107D, COND. A

NOTE: SPECIFICATIONS WILL VARY OVER OPERATING TEMPERATURE
NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

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ISO 9001 CERTIFIED

PLANAR MONOLITHICS INDUSTRIES, INC.
4921 ROBERT J. MATHEWS PARKWAY, SUITE 1, EL DORADO HILLS, CA 95762 USA
TEL: 916-542-1401, FAX: 301-662-1731
Email: sales@pmi-rf.com Web: www.pmi-rf.com
### Summary Test Data @ 25°C

<table>
<thead>
<tr>
<th>TEST. ITEM NO</th>
<th>PARAMETERS</th>
<th>SPECIFIED VALUE</th>
<th>PASS/FAIL</th>
<th>QA QC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Frequency Range:</td>
<td>500MHz to 18 GHz</td>
<td>500MHz to 18 GHz</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>See Plot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>TSS:</td>
<td>-71 dB Min</td>
<td>-72 dB</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>See Plot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>VSWR</td>
<td>2.5:1 Max</td>
<td>2.47:1</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>See Plot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Video Output Range:</td>
<td>0 – 2.2 VDC Into a 50 Ω Load</td>
<td>325 mV–2.1 V VDC</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>See Plot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Max Video Output:</td>
<td>2.4 V</td>
<td>2.1 V VDC</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>See Plot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Input Power:</td>
<td>+30dBm CW Max</td>
<td>Pass</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Log Slope:</td>
<td>25mV/dB (±10%) @ 50Ω Load</td>
<td>24.03 mV/dB</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>See Plot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Log Range:</td>
<td>-70 to 0 dBm</td>
<td>-70 to 0 dBm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>See Plot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Log Slope Intercept Point</td>
<td>At -70 dBm RF Input Video Out = 350 mV (Nom) @ 25°C</td>
<td>325 mV</td>
<td></td>
</tr>
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<td></td>
<td></td>
<td>See Plot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Pulse Range:</td>
<td>50ns to CW</td>
<td>Pass</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Pulse Rise Time: (10% to 90%)</td>
<td>20ns Max</td>
<td>6.6 ns</td>
<td></td>
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<td></td>
<td>See Plot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Pulse Overshoot:</td>
<td>1dB Max with 50 Ω Load</td>
<td>0.5 db</td>
<td></td>
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<td></td>
<td></td>
<td>See Plot</td>
<td></td>
<td></td>
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<tr>
<td>13</td>
<td>Pulse Fall Time: (90% to 10%)</td>
<td>60ns Max</td>
<td>36.8 ns</td>
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<td>See Plot</td>
<td></td>
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</tr>
<tr>
<td>14</td>
<td>Recovery Time:</td>
<td>60ns (40ns Typ)</td>
<td>52 ns</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>See Plot</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Power Supply:</td>
<td>+12 to +15 VDC @ 400 mA</td>
<td>VDC @ 189 mA</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>-12 to -15VDC @ 150 mA</td>
<td>VDC @ 95 mA</td>
<td></td>
</tr>
</tbody>
</table>

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SUMMARY TEST DATA
ON
SDLVA-0R5G18G-50R-30dBm

LOG TRANSFER WITH FREQUENCY @ +25°C
MODEL: SDLVA-0R5G18G-50R-30dBm
TESTED BY: J. Emperador
TEST DATE: 07/13/16
SERIAL NO: PL19646
TEST TEMP: +25°C

<table>
<thead>
<tr>
<th>Frequency (GHz)</th>
<th>INTERCEPT (mV)</th>
<th>SLOPE (mV/dB)</th>
<th>Error (mV)</th>
<th>LINEARITY ERROR (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>2068</td>
<td>24.24</td>
<td>-0.66</td>
<td>0.52</td>
</tr>
<tr>
<td>9.25</td>
<td>2116</td>
<td>25.76</td>
<td>0.53</td>
<td>-0.55</td>
</tr>
<tr>
<td>18</td>
<td>2062</td>
<td>24.03</td>
<td>-0.91</td>
<td>0.08</td>
</tr>
</tbody>
</table>

Flatness dB

Linearity Error VS Input Power

Video Out VS Input Power
SUMMARY TEST DATA
ON
SDLVA-0R5G18G-50R-30DBM

TSS @ -72 dB
SUMMARY TEST DATA
ON
SDLVA-0R5G18G-50R-30DBM

RISE TIME
SUMMARY TEST DATA
ON
SDLVA-0R5G18G-50R-30DBM

PULSE OVERSHOOT
SUMMARY TEST DATA
ON
SDLVA-0R5G18G-50R-30DBM

FALL TIME
RECOVERY TIME
SUMMARY TEST DATA
ON
SDLVA-0R5G18G-50R-30DBM

VSWR

VSWR GRAPH

Input VSWR 2.47:1 Max

Frequency [GHz]

VSWR