Planar Monolithics Industries, Inc.

18.0 to 40.0 GHz, 65dB, Successive Detection Log Video Amplifier

TECHNICAL DATASHEET

SDLVA-18G40G-65-CD-292FF

PMI Model No. SDLVA-18G40G-65-CD-292FF is a Successive Detection Log Video Amplifier (SDLVA) that operates over a frequency range of 18.0 to 40.0GHz. It has a dynamic range of 65dB, log slope of 25mV/db and a nominal video bandwidth of 32MHz. Furthermore, it has been designed using cutting edge GaAs technology which provides stunning performance and reliability in a compact package making it an optimum solution for high speed channelized receiver applications.

Features

- 18.0 to 40.0 GHz
- -65dBm TSS
- 25mV/db Log Slope
- 65dB Dynamic Range
- 2.5:1 VSWR
- 32MHz Nominal Video Bandwidth

Applications

- EW Systems
- Radars
- UAVs & UGVs
- Communications
- Test Equipment
- Laboratories

Electrical Specifications

- Frequency Range: 18.0 to 40.0GHz
- TSS: -65dBm @ 25°C
- Input Power Handling: 10dBm max
- Video Log Range: -63dBm to +2dBm
- Video Log Linearity: +/- 2.0dB @ 25°C
  +/-3.0 over temp
- Video Log Slope: 25mV/ dB nom
- Video Log Intercepts
- Video Output at 2dBm: 1940mV max
  1476mV max
- Video Output at -63dBm: 280mV max
  65mV min
- Video Frequency Flatness: +/-2.5dB max @ 25°C
- Pulse Width Range: 20ns to CW
- Video Rise Time: 11nS (8nS typ)
- Recovery Time: 60nS (40nS typ)
- Delay Time: 15nS (5nS typ)
  7nS over temp typ
- Video Output Impedance: 50 ohms
- Input VSWR (50 ohms): 2.5:1
- DC Power Supply: +12V @ 400mA
  -12V @ 200mA
  *Note: Do not supply +V without -V supplied as well as this may destroy the unit
- Size: 2.37" x 1.8" x 0.42"
- Finish: Nickel Plate per SAE AMS 2404
**TECHNICAL DATASHEET**

**SDLVA-18G40G-65-CD-292FF**

**Environmental Ratings**
- **Temperature:** -54°C to +85°C Operating
  -62°C to +86°C Non-Operating
- **Humidity:** MIL-STD-202F, Method 103B Cond. B
- **Shock:** MIL-STD-202F, Method 213B Cond. B
- **Vibration:** MIL-STD-202F, Method 204D Cond. B
- **Altitude:** MIL-STD-202F, Method 105C Cond. B
- **Temperature Cycle:** MIL-STD-202F, Method 107D Cond. A

**LOG TRANSFER vs FREQUENCY @ 25C**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Intercept (mV)</th>
<th>SLOPE (mV/dB)</th>
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<tbody>
<tr>
<td>18 GHz</td>
<td>1691</td>
<td>23.9</td>
</tr>
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<td>23.0 GHz</td>
<td>1689</td>
<td>25.3</td>
</tr>
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<td>24 GHz</td>
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**RF Input Power (dBm)**

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**Measured Value (mV)**

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**Linearity Error (dB)**

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**Logging Accuracy (dB)**

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**Flatness (+/- dB)**

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**Min Video Output Volts**

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**Max Video Output Volts**

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**Nominal Log Slope (mV/Db):** 24.71

**Log Slope Variation (± mV/Db):** 0.76
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LOG TRANSFER vs FREQUENCY @ 25C

Graphs showing linearity error and logging accuracy vs input power.
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TSS -65dBm @ 25C
DELAY TIME 10.38ns @ 25C & +2dBm

RISE TIME 5.90ns @ 25C & +2dBm
RECOVERY TIME 37.4ns @ 25C & +2dBm

West Coast Operation:
4921 Robert J. Mathews Pkwy, Suite 1
El Dorado Hills, CA 95762 USA
Tel: 916-542-1401  Fax: 916-265-2597

ISO9001 REGISTERED
Web: www.pmi-rf.com
Email: sales@pmi-rf.com

East Coast Operation:
7311-F Grove Road
Frederick, MD 21704 USA
Tel: 301-662-5019  Fax: 301-662-1731
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TECHNICAL DATASHEET
SDLVA-18G40G-65-CD-292FF

MECHANICAL OUTLINE

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4921 Robert J. Mathews Pkwy, Suite 1
El Dorado Hills, CA 95762 USA
Tel: 916-542-1401 Fax: 916-265-2597

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