Planar Monolithics Industries, Inc.

0.5 to 2.0 GHz, 67dB, Extended Range Detector Log Video Amplifier

Technical Datasheet GMDA-D1007

PMI Model No. GMDA-D1007 is an Extended Dynamic Range DLVA designed to operate over the 0.5 to 2.0GHz frequency range. It employs planar diode detectors and integrated video circuitry for high speed performance and outstanding reliability. It is of superior construction using state of the art MIC/MMIC technology.

Features
- 0.5 to 2.0 GHz
- -60 to +7dBm Logging Range
- 30ns Video Rise Time
- -65dB TSS
- VSWR 2.3:1 Max.
- 1us Recovery Time Max.

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

Electrical Specifications
- Frequency Range: 0.5 to 2.0GHz
- Logging Range: -60dBm to +7dBm
- TSS: -65dBm max
- Logging Slope: +25 ±1mV/dB @ Room Temperature
- Video Load Impedance: 75 ohms typ
- Video Rise Time: 30ns max
- Recovery Time: 1usec max
- Throughput Time: 30ns max
- Video Bandwidth: 10MHz typ
- Offset Voltage: ±50mV max
- Flatness: 100mV P-P max
- RF Safe Input Power: +23dBm max CW
- Maximum Output Voltage: +2.5V max
- Input VSWR (50 ohms): 2.3:1 max
- Video Load Impedance: 75 ohms typ
- Video Rise Time: 30ns max
- Recovery Time: 1usec max
- Throughput Time: 30ns max
- Video Bandwidth: 10MHz typ
- Offset Voltage: ±50mV max
- Leading and Trailing Edge: See Figure 5 on Product Feature
- Reverse Shoot and Slope Reverse: See Figure 6 on Product Feature
- Primary Power: +12 to +15.5VDC @ 300 mA max
- -12 to -15.5VDC @ 150mA max

Environmental Ratings
- Temperature: -54°C to +85 °C Operating
- -57 °C to +85 °C Non-Operating
- Humidity: MIL-HDBK-5400 4.6.2.4 100%RH
- Shock: MIL-HDBK-5400 4.6.2.6
- Vibration: MIL-STD-810F, ANNEX C FIG 514 5C-8 (Refer to Fig 3.1-1)
- Altitude: 0 - 43,000 FT
- Temperature Cycle: MIL-STD-202F, Method 107D Cond A
- Functional Shock: 196 m/s, 6.9 ms

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**LOG TRANSFER vs. FREQUENCY @ 25C**

![Graph showing log transfer vs. frequency and linearity error vs. input power.](image)
0.5 to 2.0 GHz, 67dB, Extended Range Detector Log Video Amplifier

**TECHNICAL DATASHEET**

**GMDA-D1007**

**RISE TIME @ 25C** 13.21ns

**RECOVERY TIME @ 25C** 163.673ns

**DELAY TIME @ 25C** 25.81ns

**TANGENTIAL SIGNAL SENSITIVITY (TSS)** -67dBm @ 2.0GHz

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