# HD30965
# SOLID STATE PULSE HIGH POWER AMPLIFIER

**FEATURES**

Small form factor rack mounted system
High power LDMOS pulse devices
Instantaneous bandwidth
Suitable for linear pulse applications
Built-in protection circuits
High reliability and ruggedness



**ELECTRICAL SPECIFICATIONS**

| Parameter | Specification | Notes |
|---|---|---|
| Operating Frequency Range | 3.1 - 3.5 GHz | |
| Peak Output Power | 1300 Watt Min | @ 5% Duty Cycle |
| Output Power Flatness | 0 to 2 dB | Over operating band |
| Input Power | 24 dBm ±1.0dB | |
| Saturated Gain | 38 dB Min | |
| Pulse Width | 2 µSec - 64 µSec | |
| Duty Cycle | 5% | |
| Rise / Fall Time | <250 nSec / <150 nSec | |
| Droop | <0.8 dB | |
| Input / Output VSWR | 1.5 : 1 | Relative to 50 Ohm |
| Harmonics | -30 dBc Max | At rated Output Power |
| Near Carrier Noise | <-70 dBc @ 100 Hz away from carrier. Input Source <-80 dBc/Hz | Amplifier adds less than 10dB noise components |
| Spurious | -70 dBc Max | |
| Over Temp. Alarm | ON: TTL Low >75°C<br>OFF: TTL High <70°C | |
| Over Voltage Protection | Built In | |
| Load VSWR | Output Short or Open | No damage |
| Gate Control Inputs | PA OFF: TTL High<br>PA ON: TTL Low | 2 µSec – 64 µSec |
| AC Input Voltage | 180 - 260 VAC, 50/60 Hz | |
| Efficiency | 20 % Typical | |
| Detected RF Output | Pout = 0: $V_{DET}$ = 0 - 5 VDC<br>Pout = Max: $V_{DET}$ = 4 - 4.5 VDC | Continuous DC Voltage |
| ON/OFF Isolation | 120 dB Min | Little or no RF Leakage in OFF Period |

**ENVIRONMENTAL CHARACTERISTICS**

| Parameter | Specification | Notes |
|---|---|---|
| Operating Ambient Temperature | -20 to +55°C | MIL-STD 810F, 502.4/501.4 |
| Storage Temperature | -30 to +70°C | MIL-STD 810F, 502.4/501.4 |
| Relative Humidity | 95% @ 40°C | MIL-STD 810F, Method 507.4 |
| Shock (Bump) | 25 g for 6 mSec, 2-3 Bumps/Sec. 400 Bumps | MIL-STD 810F, Method 516.5 |
| Vibrations | $2m/S^2$ from 20 -50 Hz<br>$2m/S^2$ from 20 -500 Hz | MIL-STD 810F, Method 514.5 |
| Altitude | 5160 m | MIL-STD 810F, Method 500.4 |
| EMI/EMC | Conducted Susceptibility,<br>Radiated Emissions | MIL STD 461E, Method CS101<br>MIL STD 461E, Method RE102 |

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**MECHANICAL SPECIFICATIONS**

| Parameter | Specification | Notes |
|---|---|---|
| Dimensions W x H x D | 430 x 560 x 133.3 mm | Standard 3U |
| Weight | 20 Kg. Max | |
| RF Connectors In/Out | SMA Female / Type-N Female | Front Panel Standard |
| RF Output Monitoring | SMA Female | Coupled Port |
| AC Power | IEC 60320-C14 | |
| Interface Connector | 9-Pin Dsub | |
| Cooling | Built in Fan Cooling | |

**D SUB CONNECTOR**

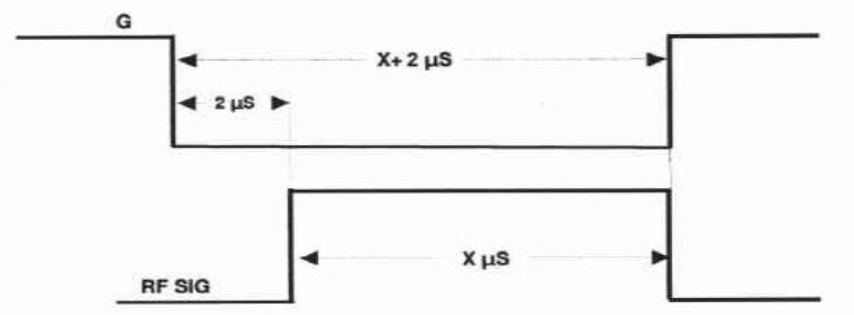
| PIN | CONNECTOR | |
|---|---|---|
| 1 | AMP ENABLE (TTL) | |
| 2 | GND | |
| 3-7 | N/C | |
| 8 | HIGH TEMP ALARM (TTL) | |
| 9 | GND | |

**GATE CONTROL PULSE TIMING REQUIREMENT**

Gated control input 4 µSec - 66 µSec

PA OFF: TTL High

PA ON: TTL Low

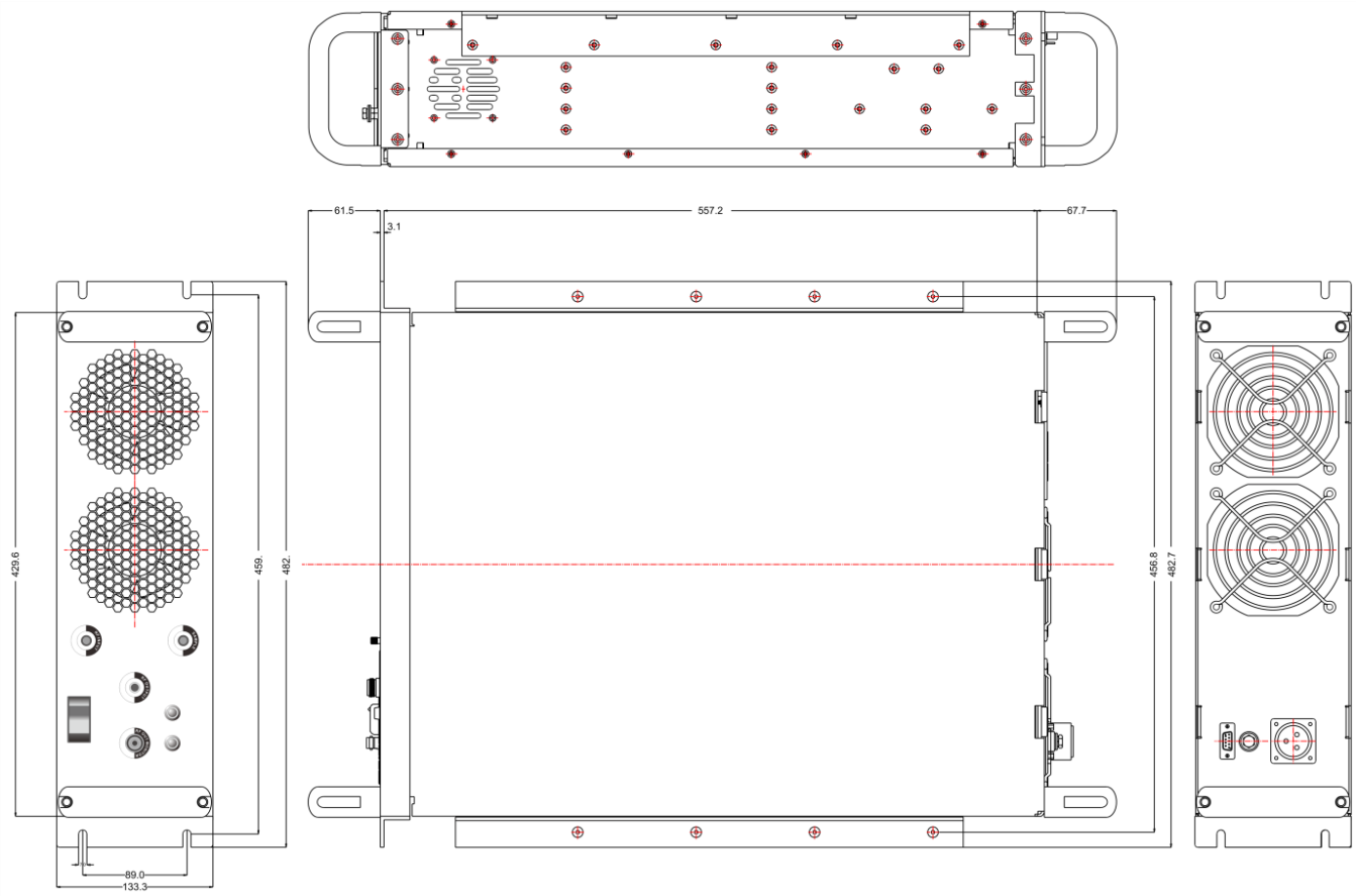



- Starting control pulse 2 µSec before the RF pulse allows more time for the bias to stabilize thus allowing more stable pulse.
- Switching off the control pulse and RF pulse simultaneously reduces noise from the receiver.

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**OUTLINE DRAWING**




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