# HD31849
# SOLID STATE HIGH POWER PULSE AMPLIFIER

HD Communications Corp.

**FEATURES**

Class AB linear GaN design
High dynamic range
Suitable for airborne and phase array X-Band pulse applications
Built-thermal, load VSWR, pulse width, duty cycle protections
High reliability and ruggedness

**ELECTRICAL SPECIFICATIONS**

| Parameter | Specification | | | Notes |
|---|---|---|---|---|
| Operating Frequency [1] | 8.0 - 8.5 GHz | 8.5 - 10.0 GHz | | Any 800MHz BW |
| Peak Pulse Output Power | 800 Watt Min | 1000 Watt Min | | Peak Pulse |
| Peak Power Gain [2] | 60 dB Min | | | Lower gain, phase & gain matching for combining is available |
| Input Pulse Characteristics | Pulse Width(tp) | Duty Cycle(δ) | PRF | |
| | 0.1 - 100 µS | 10 % | 10 KHz | Nominal values |
| Pulse Rise / Fall Time | 50 nS Max | | | |
| Pulse Droop | 0.5 dB Max | | | With 50 µS |
| Input Return Loss | 12 dB Min | | | Relative to 50 Ohm |
| Harmonics | -30 dBc Nom | | | |
| Spurious | -60 dBc Max | | | Non-harmonics or Gaussian |
| Operating Voltage | 42 VDC Nom | | | |
| Current Consumption | 10 Amp Avg. Typ | | | With 10% duty cycle |
| Load VSWR | ∞ : 1 | | | External output Isolator required |

**ENVIRONMENTAL CHARACTERISTICS**

| Parameter | Specification | Note |
|---|---|---|
| Operating Case Temperature | -20 to +70°C | |
| Storage Temperature | -40 to +85 °C | |
| Relative Humidity | 5 to 95 % | Non-condensing |

**MECHANICAL SPECIFICATIONS**

| Parameter | Specification | Notes |
|---|---|---|
| Dimensions | 180 x 260 x 42 mm | Excluding Heatsink |
| Weight | TBD | |
| RF Connectors In/Out | SMA female / Type N female | WR-90 optional |
| DC Power / Interface Connector | 7-Pin Hybrid D-Sub | |
| Cooling | External Heatsink | Forced air required |

**Notes:**

1 Specify up to any 800MHz bandwidth within 8.0-10GHz frequency range.
2 To combine 2 or more modules, specify lower gain, phase and gain matching when ordering.

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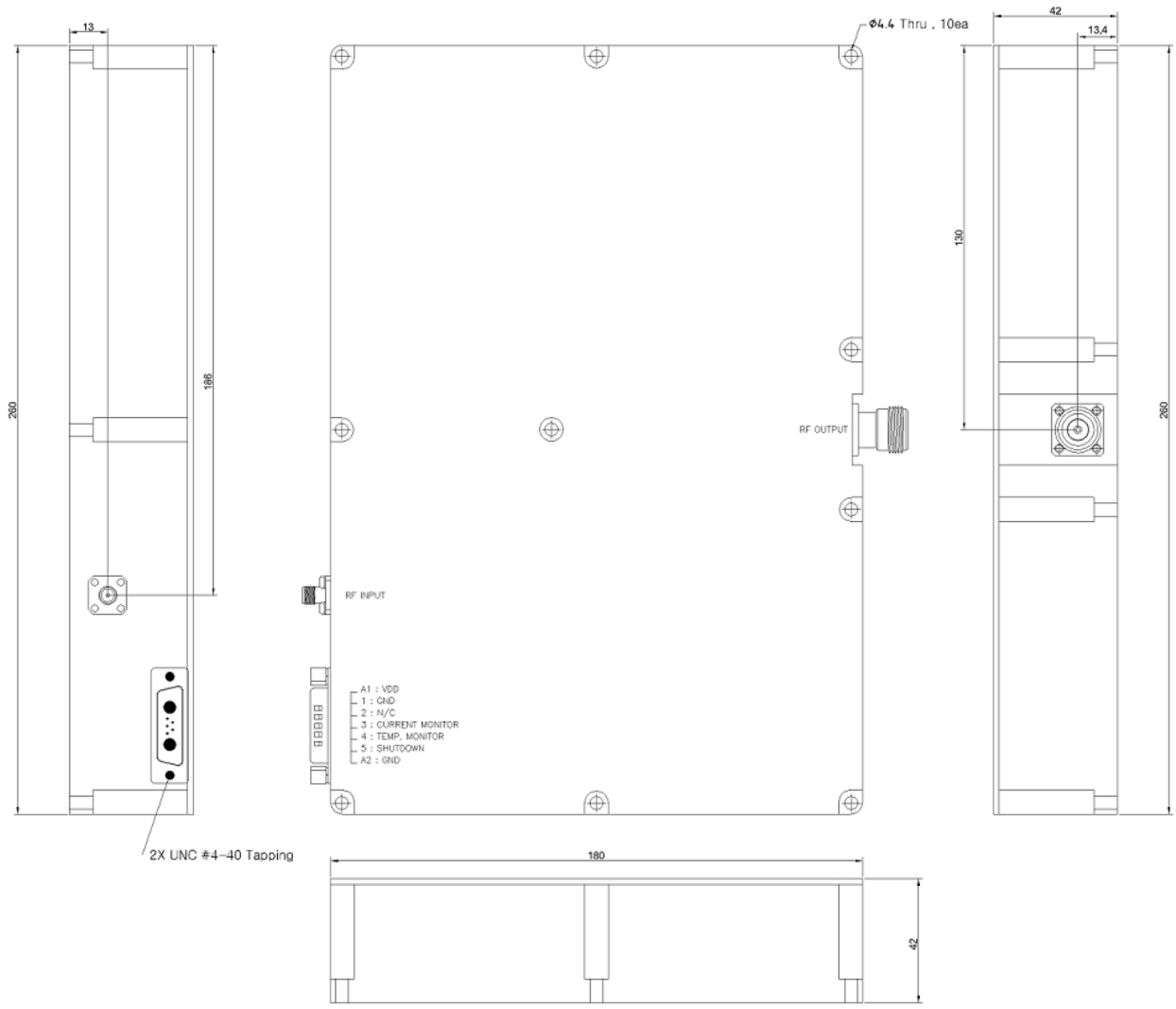
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**D-SUB CONNECTOR PIN ASSIGNMENT**

| Pin | Function | Description |
|---|---|---|
| 1 | N/C | |
| 2 | Pulse Gating Control | TTL |
| 3 | CURRENT SENSOR | $I_D$@50mV/100mA Typ |
| 4 | TEMP SENSOR | $V_T$@10mV/°C + 500mV Typ |
| 5 | SHUTDOWN | TTL "Hi" = Disable Function @ 50mS (**Option**: 5uS Trigger/Pulse Modulator) |
| A1 | VDD | 42VDC |
| A2 | GND | Ground |

**OUTLINE DRAWING**





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