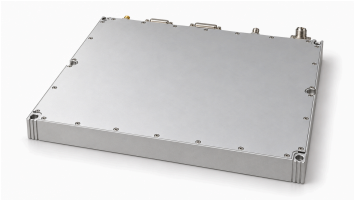
# 400–2500 MHz RF Power Amplifier, 300 W Typical, RS-485



This amplifier covers 400–2500 MHz with 300 W typical output power and 55 dB typical gain. Typical current is 40 A at 300 W, and the coupled output port has 48.5 dB typical coupling.

The enclosure measures 360 × 300 × 35 mm maximum, with an SMA input and N output. The documented control interface provides RS-485 and current, VSWR and temperature alarm pins. The –20 to 50 °C operating-temperature range is an environmental design target; qualification is not established by this source.

## Electrical Specifications

+28.0VDC; 25°C; 50Ω; 0dBm

| Parameter | Symbol | Minimum | Typical | Maximum | Unit |
|---|---|---|---|---|---|
| Operating frequency | BW | 400 | - | 2500 | MHz |
| Saturated RF output power | Pout | - | 300 | - | W |
| Power gain | Gp | - | 55 | - | dB |
| Power gain flatness | Gp | - | ±2.5 | - | dB |
| VSWR | S11 | - | - | 2 | - |
| Harmonics at 300 W | H | - | -10 | - | dBc |
| Spurious signals | Spur | - | -60 | - | dBc |
| Input/output impedance | Impedance | - | 50 | - | Ω |
| Operating voltage | VDC | 24 | 28 | 32 | VDC |
| Power-added efficiency | Eff | - | 28 | - | % |
| Current consumption at Pout = 300 W | IDD | - | 40 | - | A |
| Coupled output port coupling | - | - | 48.5 | - | dB |

## Monitoring and Protection

| Parameter | Specification |
|---|---|
| Monitoring | Voltage, current, temperature and open/short-circuit detection |
| Output VSWR protection | VSWR = 3 → Normal; Open-circuit protection → Shutdown |
| Over-temperature protection | 85 °C → Shutdown |
| Supply protection | (VDC >32 V) or (VDC <24 V) or Reversed polarity → Shutdown |

## Absolute Maximum Ratings

| Parameter | Rating |
|---|---|
| RF input drive without damage | +10 dBm maximum |
| Load VSWR at Pout = 300 W | ∞; All load phases and amplitudes; continuous |
| Thermal overload | 85 °C → Shutdown (maximum) |

## Environmental Specifications

The environmental figures are design targets. Confirm the applicable values for your project.

| Parameter | Minimum | Typical | Maximum | Unit |
|---|---|---|---|---|
| Operating temperature | -20 | - | 50 | °C |
| Storage temperature [1] | -25 | - | 65 | °C |
| Relative humidity (non-condensing) | - | - | 95 | % |

[1] Storage temperature

## DC and Control Interface

| Pin # | Description | Specification |
|---|---|---|
| 1 | 1 — Enable | High level → Enabled; Low level → Disabled |
| 2 | 2 — Ground | Ground |
| 3 | 3 — 485A | RS-485 serial communication |
| 4 | 4 — 485B | RS-485 serial communication |
| 5 | 5 — Not connected | Not connected |
| 6 | 6 — Not connected | Not connected |
| 7 | 7 — Overcurrent indicator | - |
| 8 | 8 — VSWR alarm | - |
| 9 | 9 — Temperature alarm | - |

## Power pin definition

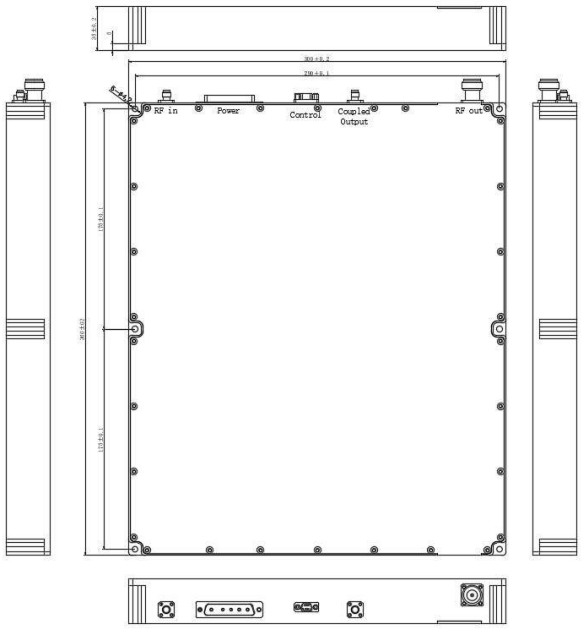
| Pin # | Description | Specification |
|---|---|---|
| 1 | 1 — Positive supply | Positive supply |
| 2 | 2 — Positive supply | Positive supply; Total current: 44 A |
| 3 | 3 — Ground | Negative supply |
| 4 | 4 — Ground | Negative supply |
| 5 | 5 — Not connected | Not connected |

## Mechanical Specifications

The mechanical table names the power connector Hybrid D-Sub 4, male, while the power-interface section is headed DB5 and lists five pin rows. It names the control connector D-Sub 15, male, while the control-interface heading is J30J-9ZK. The source does not confirm how these designations correspond to delivered connectors. Confirm exact connector designations, contact counts and wiring; do not infer physical contact counts from the listed rows.

| Parameter | Value | Unit |
|---|---|---|
| Dimensions | 360 × 300 × 35[14.17 × 11.81 × 1.38] mm [in] (maximum) | mm [in] |
| Weight | 6[13.2] kg [lb] (maximum) | kg [lb] |
| RF input connector | SMA, female | - |
| RF output connector | N, female | - |

## Mechanical Outline

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**Document notice**

Specifications are subject to revision. Before design release, confirm the current document revision and product-specific requirements with LCRF. The approved quotation and order documentation define the supplied configuration.