

The PA30M500M100V6 is a 100-watt, high-performance broadband power amplifier covering 30 – 500 MHz, designed for CW, VHF/UHF, and general RF applications.

Leveraging advanced Gallium Nitride (GaN) technology, the amplifier delivers a minimum saturated output power of 50 dBm and a minimum small-signal gain of 50 dB with ± 1 dB gain flatness. Built-in protection, monitoring, and control circuits ensure long-term reliability and repeatable performance across temperature and load conditions.

The unit is supplied in a rugged 4U rack-mount enclosure, with N-Type female connectors for input and output, and is compatible with RS-232/RS-485/RS-422/USB/Ethernet interfaces for control and telemetry. Designed for indoor use, an optional outdoor hub-mount version is available on request.

Product Features:

- Minimum Small-Signal Gain: 50 dB
- Minimum Saturated Output Power: 50 dBm (100 W)
- Gain Flatness: ± 1 dB
- Adjustable Gain Range: 25 dB (1 dB steps)
- Instant-On Operation (no warm-up)
- 50 Ω Matched Input and Output
- Input/Output Connectors: N-Type Female
- Comprehensive Protections:
 - Reverse Polarity
 - Temperature Over-Limit
 - Current Limiting
- Integrated Monitoring and Telemetry:
 - Temperature Indication
 - Current Consumption Monitoring
- Control Interfaces: RS-232 / RS-485 / RS-422 / USB / Ethernet (customer selectable)
- Power Input: 100–240 VAC, 50/60 Hz
- Solid-State MMIC Reliability
- Rack-Mountable (4U, 50 cm depth)



Application:

- Radar Transmitters
- Satellite Communication Systems
- TWTA Replacement
- R&D and Laboratory Use
- Military and Aerospace Platforms

Electrical Specifications ($T_A=+25^{\circ}\text{C}$)

Parameter	Typ	Units
Frequency Range	30 – 500	MHz
Minimum Small Signal Gain (0 dBm input)	50	dB
Minimum Saturated Output Power (Psat)	100	W
Gain Variance (Maximum)	+/-1	dB
Gain Variation Over Temperature (-40°C to +70°C)	+/-1	dB
Gain adjustment range	25	dB
Gain adjustment step size	1	dB
Input Return Loss	-15	dB
Spurious	-70	dBc
Harmonics @ POUT = 100W	-40 (2 nd) -15(3 rd)	dBc
IP3	+55	dBm
Noise Figure @ max. gain	7	dB
Input RF drive level without damage	+ 10 (Max)	dBm
Operating voltage	100 to 240	VAC
Supply Current	2.3	A
Weight	10	Kg
Impedance	50	Ohms
Size	4U rack, 50cm deep	
Input / Output Connectors	N-Type Female	
Monitoring and control interface	D-SUB, 9-pin, Male	
AC Power connector	IEC 60320-C14	

Environmental Specifications and Test Standards

Parameter	Description
Operational Temperature	-40°C to +85°C (Case Temperature)
Storage Temperature	-40°C to +85°C
Thermal Shock	-40°C to +85°C (5 Cycles / 10 hours)
Random Vibration	MIL-STD-202G Table 214-I, Test Condition Letter C; 1.5 Hours Per Axis
High-Temperature Burn-In	Temperature +85°C for 72 Hours
Shock	1. Weight >20g, 50g half sine wave for 11ms, Speed variation 3.44m/s 2. Weight ≤20g, 100g Half sine wave for 6ms, Speed variation 3.75m/s 3. Total 18 times (6 directions, 3 repetitions per direction).
Altitude	Standard: 30,000 Ft (Epoxy Sealed Controlled Environment) Optional: Hermetically Sealed (60,000 ft. 1.0 PSI min)

Handling Precautions



Caution!
ESD-Sensitive Device

RF VOLTAGE HAZARD: Contact with RF fields at the output connector can cause burns or electric shock. High levels of RF/Microwave energy may be present when the unit is operating.

HIGH DC CURRENT HAZARD: High levels of DC current are present when the unit is operating.

Each amplifier is shipped in a hard and well-protected carry case.





Solid State Power Amplifier 100W 30MHz to 500MHz

Part No.: PA30M500M100V6

Contact Information

For the latest specifications, additional product information, worldwide sales and distribution locations:

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