



**Model 200T2G8A,  
M1 through M6  
200 Watts CW  
2.5GHz–7.5GHz**

The Model 200T2G8A is a self contained, forced air cooled, broadband traveling wave tube (TWT) microwave amplifier designed for applications where instantaneous bandwidth and high gain are required. A reliable TWT provides a conservative 200 watts minimum at the amplifier output connector. Stated power specifications are at the fundamental frequency.

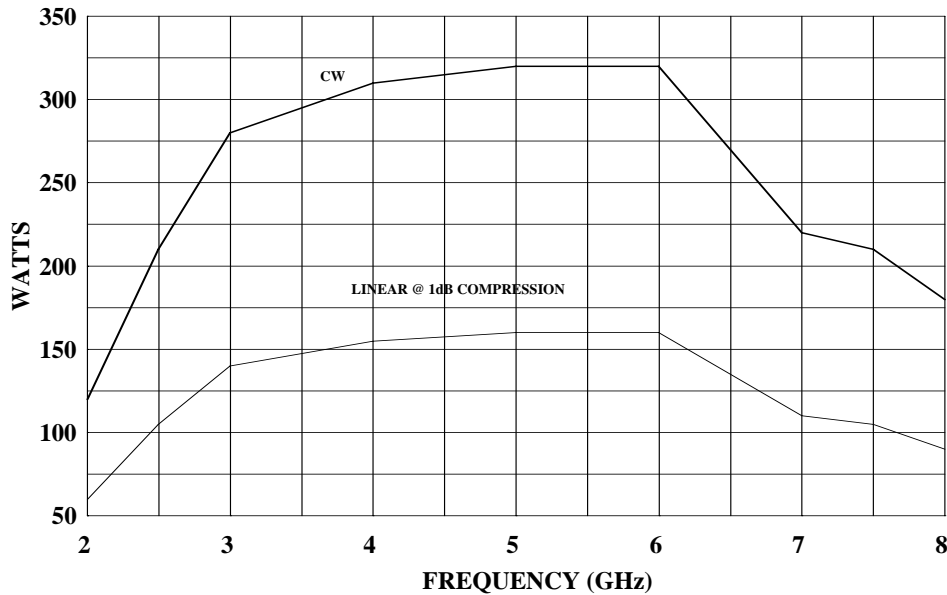
The amplifier's front panel digital display shows forward and reflected output plus extensive system status information accessed through a series of menus via soft keys. Status indicators include power on, warm-up, standby, operate, faults, excess reflected power warning and remote. Standard features include a built-in IEEE-488 (GPIB) interface, 0 dBm input, VSWR protection, gain control, external video pulsing, RF output sample port, plus monitoring of TWT helix current, cathode voltage, collector voltage, heater current, heater voltage, baseplate temperature and cabinet temperature.

Modular design of the power supply and RF components allow for easy access and repair. Use of a switching mode power supply results in significant weight reduction. The external video pulsing feature reduces prime power use for pulse applications.

Housed in a stylish contemporary cabinet this unit is designed for benchtop use but can be removed from the cabinet for rack mounting. The Model 200T2G8A provides readily available RF power for a variety of applications in Test and Measurement, (including EMC RF susceptibility testing), Industrial and University Research and Development, and Service applications.

See Model Configuration for package alternatives and special features including 100W minimum power to 2 GHz.

**200T2G8A TYPICAL POWER OUTPUT**



## SPECIFICATIONS, MODEL 200T2G8A

### POWER (fundamental), CW, @ OUTPUT CONNECTOR

|                                 |                   |
|---------------------------------|-------------------|
| Nominal .....                   | 267 watts         |
| Minimum .....                   | 200 watts         |
| Linear @ 1 dB Compression ..... | 100 watts minimum |

FLATNESS.....  $\pm 12$  dB maximum, equalized for  $\pm 5$  dB maximum at rated power

FREQUENCY RESPONSE..... 2.5-7.5 GHz instantaneously

INPUT FOR RATED OUTPUT..... 1.0 milliwatt maximum

GAIN (at maximum setting)..... 53 dB minimum

GAIN ADJUSTMENT (continuous range)..... 35 dB minimum

INPUT IMPEDANCE..... 50 ohms, VSWR 2.0:1 maximum

OUTPUT IMPEDANCE..... 50 ohms, VSWR 2.5:1 typical

MISMATCH TOLERANCE..... Output power foldback protection at reflected power exceeding 40 watts. Will operate without damage or oscillation with any magnitude and phase of source and load impedance. May oscillate with unshielded open due to coupling to input. Should not be tested with connector off.

MODULATION CAPABILITY..... Will faithfully reproduce AM, FM, or pulse modulation appearing on the input signal. AM peak envelope power limited to specified power.

### VIDEO PULSE CAPABILITY

|                             |   |
|-----------------------------|---|
| Pulse Width .....           | 0.05 microseconds min   |
| Pulse Rate (PRF) .....      | 100 KHz max   |
| RF Rise and Fall.....       | 30 ns max (10 % to 90%)   |
| Delay.....                  | 300 ns max from pulse input to RF 90%   |
| Pulse Width Distortion..... | $\pm 30$ ns (50% points of output pulse width compared to 50% point of input pulse width) |

NOISE POWER DENSITY (pulse on)..... Minus 69 dBm/Hz (maximum)  
Minus 72 dBm/Hz (typical)  
(pulse off)..... Minus 140 dBm/Hz (typical)

HARMONIC DISTORTION..... Minus 2.0 dBc maximum, Minus 3.5 dBc typical

PRIMARY POWER..... 190-260 VAC  
50/60 Hz single phase  
2.0 KVA maximum

### CONNECTORS

|                             |                             |
|-----------------------------|-----------------------------|
| RF input .....              | Type N female on rear panel |
| RF output .....             | Type N female on rear panel |
| RF output sample port ..... | Type N female on rear panel |
| GPIB.....                   | IEEE 488 (f) on rear panel  |
| Interlock .....             | DB-15 (f) on rear panel     |
| Video.....                  | BNC-female on rear panel    |

COOLING..... Forced air (self contained fans), air entry and exit in rear.

**MODEL CONFIGURATIONS**

| <b>Model Number</b> | <b>Description</b>  | <b>Weight</b>  | <b>Size (W x H x D)</b>                      |
|---------------------|---|----------------|--|
| 200T2G8A            | With removable enclosure  | 54 kg (120 lb) | 50.3 x 29.7 x 68.6 cm<br>19.8 x 11.7 x 27 in |
| 200T2G8AM1          | Shipped without an outer cabinet  | 41 kg ( 90 lb) | 48.3 x 26.7 x 68.6 cm<br>19.0 x 10.5 x 27 in |
| 200T2G8AM2          | Enclosure removed for rack mounting – slides and front handles installed  | 43 kg (95 lb)  | 48.3 x 26.7 x 68.6 cm<br>19.0 x 10.5 x 27 in |
| 200T2G8AM3          | With removable enclosure, selected for 100 watts minimum from 2.0 – 2.5 GHz   | 54 kg (120 lb) | 50.3 x 29.7 x 68.6 cm<br>19.8 x 11.7 x 27 in |
| 200T2G8AM4          | Enclosure removed for rack mounting - slides and front handles installed. Reflected power sample port. Type N female connector on rear panel. Forward and reflected sample port calibration data supplied on disk in Excel format at 51 points, equally spaced between 2.5GHz to 7.5GHz.  | 43 kg (95 lb)  | 48.3 x 26.7 x 68.6 cm<br>19.0 x 10.5 x 27 in |
| 200T2G8AM5          | Shipped without an outer cabinet, extended frequency range from 2-2.5 GHz and 7.5-8.0 GHz for: Power 100 watts minimum from amplifier.<br>Supplied, as needed, with external harmonic filters that can be connected to the amplifier output connector to offer: Power @ 1 dB compression 25 watts minimum and harmonics of -15 dBc max at 25 watts from 2 to 8 GHz. Filter size and weight is not included in size and weight listed. Filter size and weight TBD. | 41 kg ( 90 lb) | 48.3 x 26.7 x 68.6 cm<br>19.0 x 10.5 x 27 in |
| 200T2G8AM6          | Shipped without an outer cabinet. Reflected power sample port. Type N female connector on rear panel. Forward and reflected sample port calibration data supplied on disk in Excel format at 51 points, equally spaced between 2.5GHz to 7.5GHz.  | 41 kg ( 90 lb) | 48.3 x 26.7 x 68.6 cm<br>19.0 x 10.5 x 27 in |