

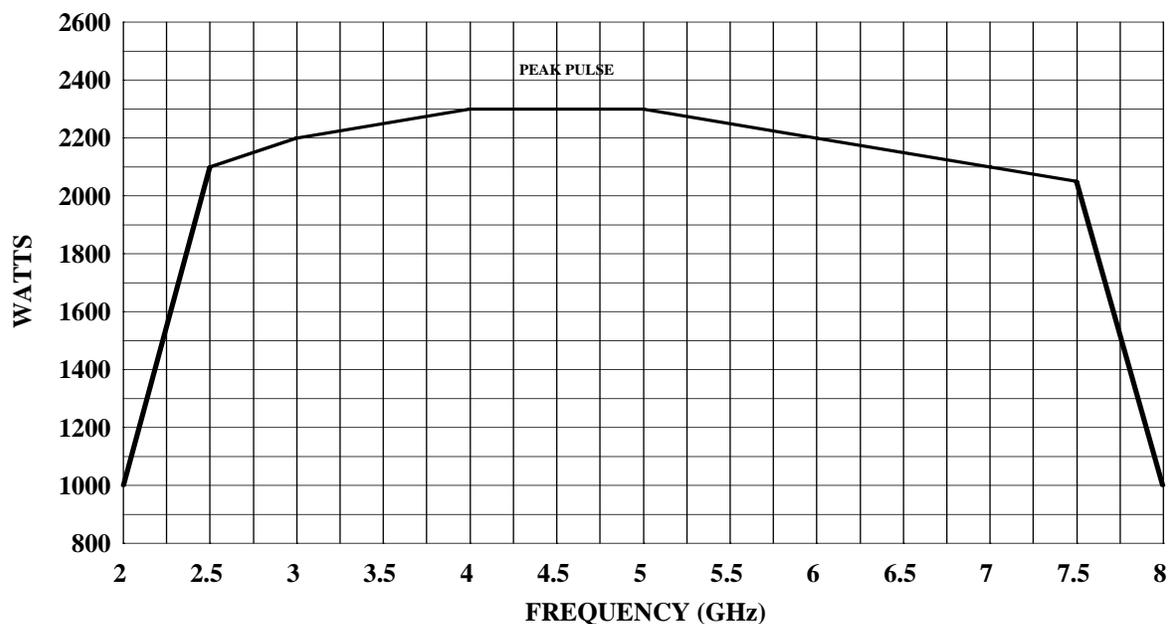
**2000TP2G8B,
M1 through M5
2000 Watts Pulse
2.5-7.5GHz**

The Model 2000TP2G8B is a self contained, forced air cooled, broadband traveling wave tube (TWT) microwave amplifier designed for pulse applications at low to moderate duty factors where instantaneous bandwidth and high gain are required. A reliable TWT provides a conservative 2000 watts minimum peak RF pulse power at the amplifier output connector. Stated power specifications are at fundamental frequency.

The amplifier's front panel digital display shows forward and reflected average power output or forward and reflected peak power, 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 average or peak reflected power warning and remote. Standard features include a built-in IEEE-488 (GPIB) interface, 0dBm input, TTL Gating, VSWR protection, gain control, RF output sample port, auto sleep, 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.

Housed in a stylish contemporary cabinet, the Model 2000TP2G8B provides readily available pulsed RF power for a variety of applications in Test and Measurement, (including EMC RF pulse susceptibility testing), Industrial and University Research and Development, and Service applications. AR also offers a broad range of amplifiers for CW (Continuous Wave) applications. See Model Configurations for alternative packaging and external harmonic filters.

2000T2G8B TYPICAL POWER OUTPUT



SPECIFICATIONS

POWER (fundamental), PEAK PULSE, @ OUTPUT CONNECTOR

Nominal	2200 watts
Minimum	2000 watts

FLATNESS..... ± 13 dB maximum, equalized for
 ± 3 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) 63 dB minimum

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

INPUT IMPEDANCE..... 50 ohms, VSWR 2.5:1 maximum

OUTPUT IMPEDANCE 50 ohms, VSWR 2.5:1 typical

MISMATCH TOLERANCE..... Output pulse width foldback protection at peak reflected power exceeding 1000 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.

PULSE CAPABILITY

Pulse Width..... 0.07 – 30 microseconds.

Pulse Rate (PRF)..... 100 kHz maximum

Duty Cycle 4% maximum.

RF Rise and Fall..... 30 ns max (10% to 90%).

Delay..... 300 ns maximum from pulse input to RF 90%

Pulse Width Distortion..... ± 30 ns maximum (50% point of output pulse width compared to 50% points of input pulse width)

Pulse Off Isolation 80 dB minimum, 90 dB typical

Pulse Input TTL Level, 50 Ohm nominal termination

NOISE POWER DENSITY

(pulse on) Minus 70 dBm/Hz (maximum), minus 72 dBm/Hz (typical)

(pulse off) Minus 140 dBm/Hz (typical)

HARMONIC DISTORTION Minus 0 dBc maximum, Minus 1.5 dBc typical

PRIMARY POWER 190-260 VAC, single phase
50/60 Hz
1.2 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

Pulse input Type BNC female on rear panel

GPIB..... IEEE-488 female on rear panel

Interlock DB-15 female on rear panel

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

MODEL CONFIGURATIONS

- E** Must select one enclosure type from the following [E1 or E2 or E2S]:
- E1** Removable outer enclosure, size 50.3 x 25.4 x 82 cm (19.8 x 10 x 32 in). Add approximately 14 kg (30 lbs) to weight of E2.
- E2** Without outer enclosure, size 48.3 x 22.2 x 69 cm (19 x 8.75 x 27 in). Weight approximately 39 kg (85 lbs).
- E2S** Enclosure removed for rack mounting; slides and front handles installed, size same as E2. Add approximately 2 kg (5 lbs) to weight of E2.
- S** May select a special feature (extra cost) from the following [S2K]:
- S2K** Supplied with two TF-type externally-mountable harmonic filters and a switch kit that allows the user to select an appropriate filter band, high or low, via this TWTA. Insertion loss when used with filters is maximum 1.5 dB. See **TF Type Filter Specifications** table below. Add filter weights, plus add 1 kg (2 lbs) for switch kit.

Model Number	Features	
2000TP2G8B	E	S
2000TP2G8B	E1	-
2000TP2G8B M1	E2	-
2000TP2G8BM2	E2S	-
2000TP2G8BM3	E1	S2K
2000TP2G8BM4	E2	S2K
2000TP2G8BM5	E2S	S2K

S2K – TF FILTER TYPE SPECIFICATIONS

Microwave Filter Model	For Use with AR TWTA Model	Pass Band (GHz)	Insertion Loss(dB max)	Reject Band (GHz)	Rejection (dB min)	Power (fundamental & harmonic, watts, max)	Input Connector	Output connector	Size L x W x D (cm, in max)	Weight (kg, lbs typical)	Input VSWR in Pass band (typical)	Input VSWR in Reject band (typical)
TF type filter 1	2000TP2G8B with N connector, requires two filters	2.5-4.2	0.5	5.0 - 8.4	25	150 & 100 average, 3000 & 2000 peak	N male (or N female plus supplied adapter or short cable)	N female	19 x 8 x 13 7.5 x 3 x 5	1, 2	1.3:1	2.5:1
filter 2		4.2-7.5	0.5	8.4 - 15	25	150 & 100 average, 3000 & 2000 peak			13 x 8 x 9 5 x 3 x 3.5			