2000TP1G2A,
M1, M2
1700 Watts Pulse
1-2.5GHz

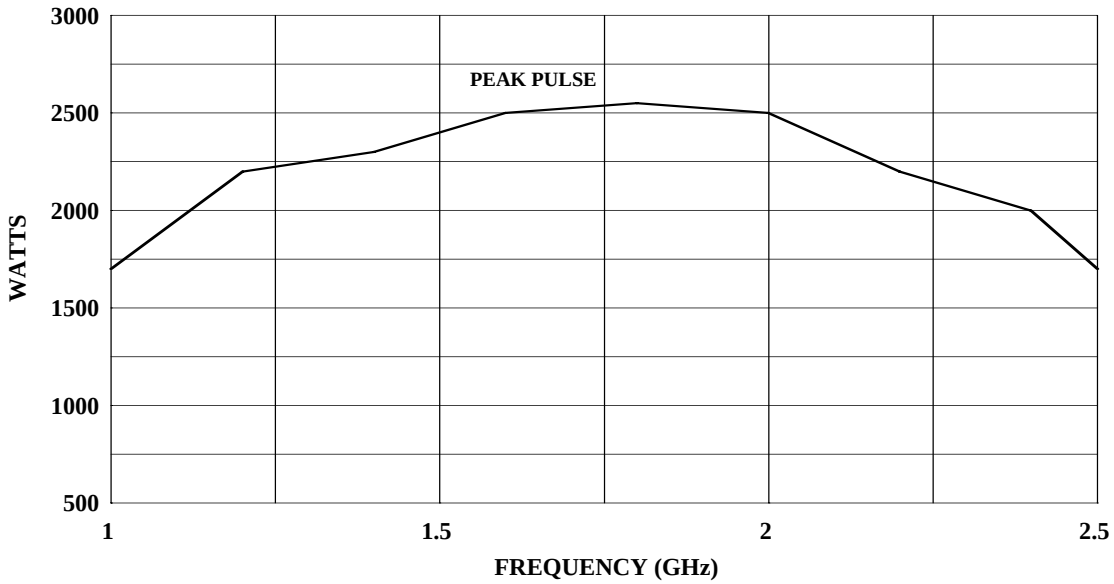
The Model 2000TP1G2A is a self contained, forced air cooled, broadband traveling wave tube (TWT) microwave amplifier designed for pulse applications at low to moderate duty factors where instantaneous bandwidth, reduced harmonics and high gain are required. A reliable TWT subsystem provides a conservative 1700 watts minimum peak RF pulse power at the amplifier output connector. Stated power specifications are at the 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 2000TP1G2A 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 external harmonic filters.

2000TP1G2A TYPICAL POWER OUTPUT



SPECIFICATIONS

POWER (fundamental), PEAK PULSE, @ OUTPUT CONNECTOR
- Nominal ..... 2200 watts
- Minimum ..... 1700 watts

FLATNESS ..... ±10 dB maximum, equalized for ±3 dB maximum at rated power

FREQUENCY RESPONSE ..... 1 – 2.5 GHz instantaneously

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

GAIN (at maximum setting) ..... 62 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) ..... 100kHz 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 ..... ±30ns max (50% point of output pulse width compared to 50% points of input pulse width).
- Pulse Off Isolation ..... 80dB minimum, 90dB typical

NOISE POWER DENSITY
- (pulse on) ..... Minus 90 dBm/Hz (maximum), minus 93 dBm/Hz(typical)
- (pulse off) ..... Minus 140 dBm/Hz (typical)

HARMONIC DISTORTION ..... Minus 15dBc maximum, Minus 18dBc typical

PRIMARY POWER ..... 190-260 VAC, single phase
50/60 Hz
1.5 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.

WEIGHT ..... 273 kg (600 lbs)

SIZE (WxHxD) ..... 56 x 160 x 82.3 cm (22.1 x 63 x 32.4 in)

MODEL CONFIGURATIONS

S May select a special feature (extra cost) from the following [S2K]:

S2K Supplied with one TF-type externally-mountable harmonic filter and a switch kit that allows the user to select an appropriate filter band, high (which bypasses filter) or low (which applies filter) via this TWTA, to offer harmonics minus 25 dBc maximum at the output of the kit. Insertion loss when used with filter is maximum 1.5 dB. See **TF Type Filter Specifications** table below. Add filter weight, plus add 2 kg (5 lbs) for switch kit.

Model Number	Features
2000TP1G2A	-
2000TP1G2AM1	S2K
2000TP1G2AM2	See Separate Specification sheet

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, typical)	Weight (kg, lbs typical)	Input VSWR in Pass band (typical)	Input VSWR in Reject band (typical)
TF type filter 1	2000TP1G2A with N connector, requires one filter	1.0 - 1.6	0.5	2.0 - 5.0	25	150 & 10 average, 3000 & 200 peak	N male (or N female plus supplied adapter or short cable)	N female	22 x 14 x 24 8.5 x 5.5 x 9.5	6.5, 14	1.3:1	2.5:1