

20000TP8G12

- 20000 Watts Pulse
- 8–12GHz

Features

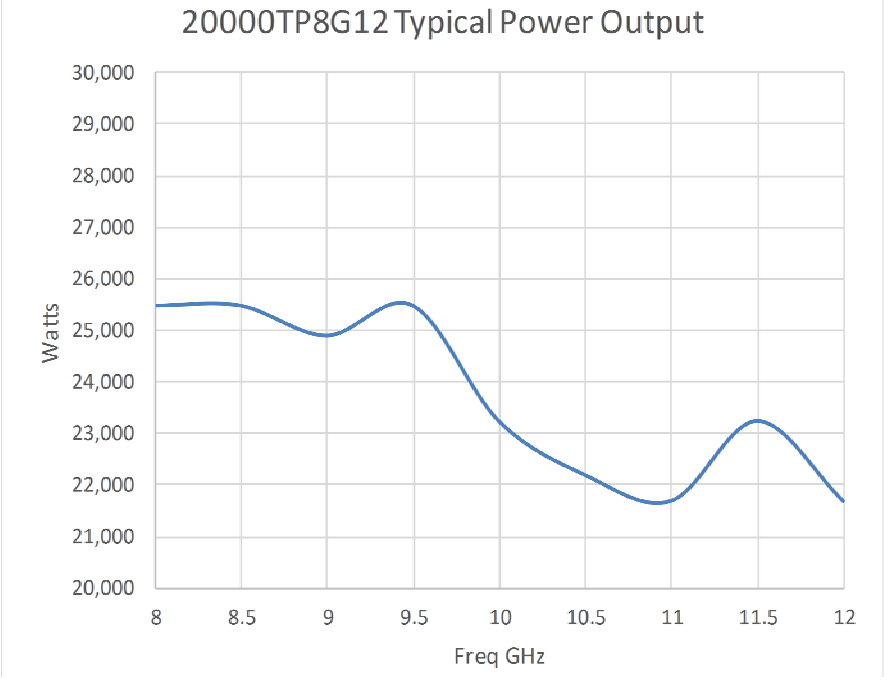
The Model 20000TP8G12 is a self contained, forced air cooled, broadband traveling wave tube (TWT) microwave amplifier system designed for pulse applications at low to moderate duty factors where instantaneous bandwidth and high gain are required. Reliable TWT subsystems provide a conservative 20000 watts minimum 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 ports, 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 switching mode power supplies results in significant weight reduction.

The rated power is developed by efficiently power combining the outputs from six 6000 watt (nominal) pulse TWTs that are factory matched in gain and phase, resulting in an excellent combination of wide instantaneous bandwidth with improved harmonic levels. Amplifier includes wheels, leveling feet, and lifting hooks.

The Model 20000TP8G12 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.

The export classification for this equipment is 3A999.d. These commodities, technology or software are controlled for export in accordance with the U.S. Export Administration Regulations. Diversion contrary to U.S. law is prohibited.



AR RF/Microwave Instrumentation
160 School House Rd
Souderton, PA 18964
215-723-8181

For an applications engineer call:800.933.8181

www.arworld.us

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Specifications

POWER (Fundamental), Pulse, @ Output:
Nominal 22,000 watts
Minimum 20,000 watts

FLATNESS: ±10 dB maximum, ±6 dB at rated power

FREQUENCY RESPONSE: 8-12 GHz

INPUT FOR RATED OUTPUT: 1.0 milliwatt maximum

GAIN (at maximum setting): 73 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 5000 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 0.1–40 microseconds
Pulse Rate (PRF) 20 kHz maximum
Duty Cycle 4% maximum.
RF Rise and Fall 150 ns max (10% to 90%).
Delay 500 ns maximum from pulse input to RF 90%
Pulse Width Distortion
±50 ns maximum (50% points 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 65 dBm/Hz (maximum);
Minus 85 dBm/Hz (typical)
(pulse off) Minus 140 dBm/Hz (typical)

HARMONIC DISTORTION: Minus 19 dBc maximum

PRIMARY POWER: 208VAC ±10%, 3 phase, delta (4-wire), 50/60 Hz, 12 kVA maximum

CONNECTORS:
RF input Type N (f) on rear panel
RF output Type WR-90 (f) on rear panel
RF output sample ports (forward and reflected) Type N (f) on rear panel
Pulse input Type BNC (f) on rear panel
GPIB IEEE-488 (f) on rear panel
Interlock DB-15 (f) on rear panel

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

SIZE (W x H x D): 57.5 x 196 x 82.5 cm, 22.6 x 77.2 x 32.5 in

WEIGHT (approximate): 575 kg, 1250 lbs

EXPORT CLASSIFICATION: 3A999.d