



Model 250T1G3
M1 through M5
250 Watts CW
1GHz–2.5GHz

The Model 250T1G3 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 250 watts minimum at the amplifier output connector. Stated power specifications are at fundamental frequency.

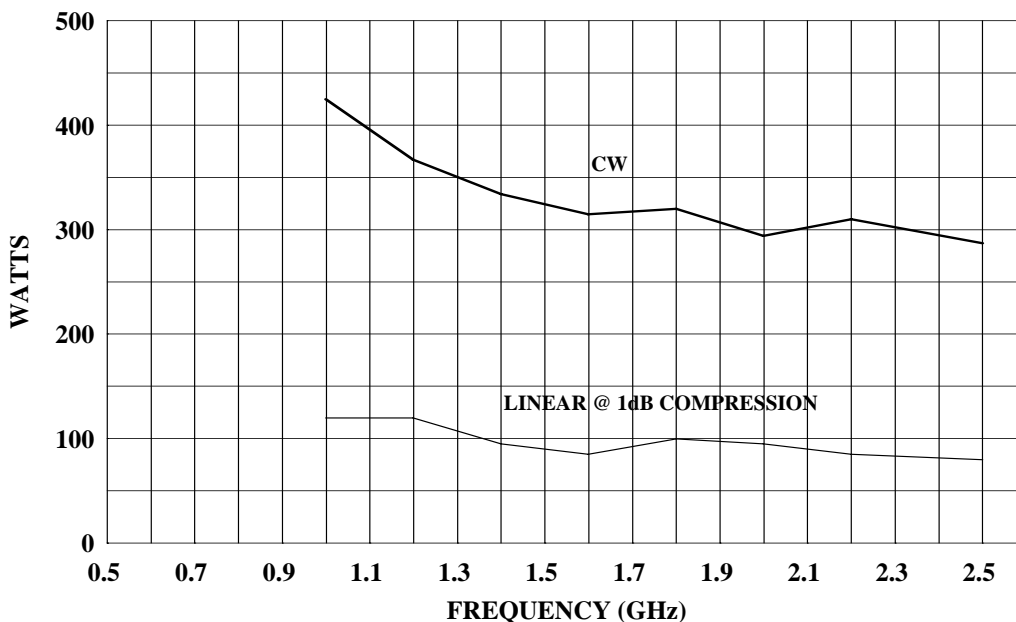
The amplifier's front panel digital display shows forward and reflected output plus extensive system status information accessed through a series of menus via soft keys. Status indicators include power on, warm-up, standby, operate, faults, excess reflected power warning and remote. Standard features include a built-in IEEE-488 (GPIB) interface, 0dBm input, VSWR protection, gain control, external video pulsing, 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. 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 250T1G3 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 packaging alternatives and special features.

250T1G3 TYPICAL POWER OUTPUT



SPECIFICATIONS, MODEL 250T1G3

POWER (fundamental), CW, @ OUTPUT CONNECTOR

Nominal	300 watts
Minimum	250 watts
Linear @ 1 dB Compression	70 watts minimum

FLATNESS ± 12 dB maximum, equalized for ± 5 dB maximum at rated power

FREQUENCY RESPONSE 1-2.5 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 50 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)	100KHz max
RF Rise and Fall	30 ns max (10% to 90%)
Delay	300 ns max from pulse input to RF90%
Pulse width distortion	± 30 ns max (50% points of output pulse width compared to 50% points of input pulse width)

NOISE POWER DENSITY

(pulse on)	Minus 72 dBm/Hz (maximum)
	Minus 77 dBm/Hz (typical)
(pulse off)	Minus 140 dBm/Hz (typical)

HARMONIC DISTORTION Minus 3 dBc maximum, Minus 4.5 dBc typical

PRIMARY POWER 190 – 260VAC
50/60 Hz, single phase
2.5 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
GPIB	IEEE-488 (f)
Interlock	DB-15 female on rear panel
Video	BNC-female on rear panel

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

MODEL CONFIGURATIONS

Model	Description	Weight	Size (W x H x D)	Features
250T1G3	With removable enclosure	59 kg (130 lb)	50.3 x 29.7 x 76.2 cm 19.8 x 11.7 x 30 in	
250T1G3M1	Shipped without an outer cabinet	46 kg (100 lb)	48.3 x 26.7 x 76.2 cm 19.0 x 10.5 x 30 in	
250T1G3M2	Enclosure removed for rack mounting - slides and front handles installed	48 kg (105 lb)	48.3 x 26.7 x 76.2 cm 19.0 x 10.5 x 30 in	
250T1G3M3	With removable enclosure	59 kg (130 lb)	50.3 x 29.7 x 76.2 cm 19.8 x 11.7 x 30 in	1
250T1G3M4	Shipped without an outer cabinet	46 kg (100 lb)	48.3 x 26.7 x 76.2 cm 19.0 x 10.5 x 30 in	1
250T1G3M5	Enclosure removed for rack mounting - slides and front handles installed	48 kg (105 lb)	48.3 x 26.7 x 76.2 cm 19.0 x 10.5 x 30 in	1

Feature 1: Reflected power port, type N female connector on rear panel. Forward and reflected sample port calibration data supplied on disk in Excel format at 51 points, evenly spaced over specified frequency response.