rf/microwave instrumentation

Model 50T4G18
50 Watts CW
M1 through M6
4.2–18GHz

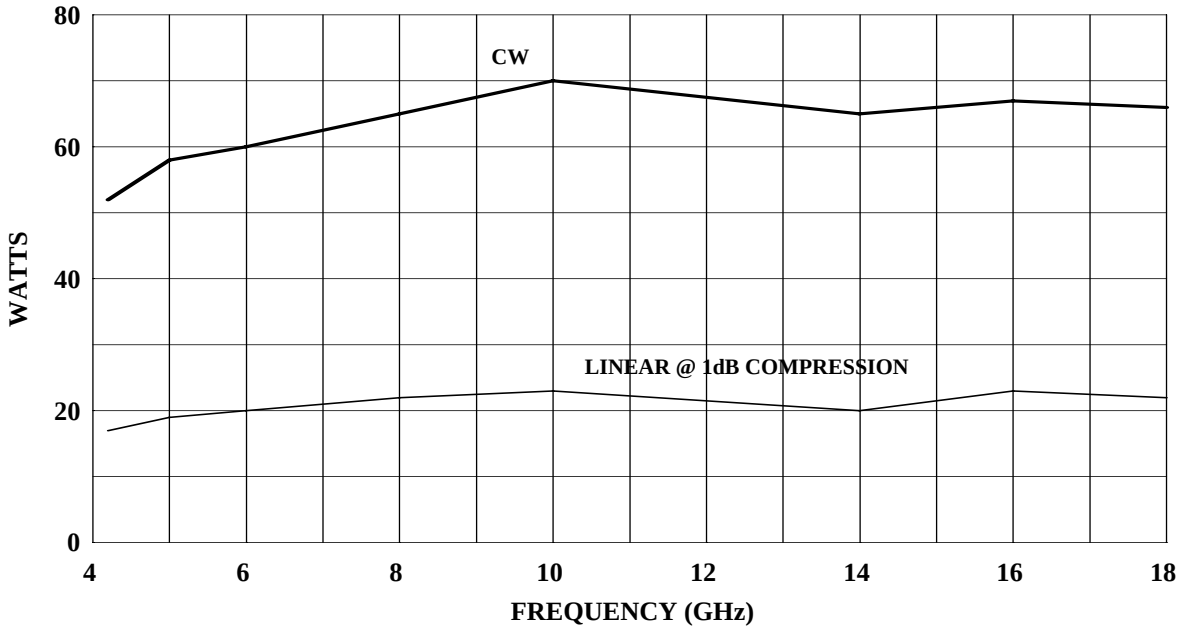
The Model 50T4G18 is a self contained, forced air cooled, broadband traveling wave tube (TWT) microwave amplifier designed for applications where wide instantaneous bandwidth, high gain and moderate power output are required. A reliable TWT provides a conservative 50 watts minimum at the amplifier output 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, 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 this unit is designed for benchtop use but can be removed from the cabinet for rack mounting. The Model 50T4G18 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 Configurations for package alternatives and other special features.

50T4G18 TYPICAL POWER OUTPUT



SPECIFICATIONS, MODEL 50T4G18

POWER (fundamental), CW, @ OUTPUT CONNECTOR
- Nominal ..... 60 watts
- Minimum ..... 50 watts
- Linear @ 1dB Compression ..... 10 watts minimum

FLATNESS ..... ±10 dB maximum, 4.2 - 18 GHz

FREQUENCY RESPONSE ..... 4.2-18 GHz instantaneously

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

GAIN (at maximum setting) ..... 47 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 20 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.

NOISE POWER DENSITY ..... Minus 80 dBm/Hz (maximum)
Minus 90 dBm/Hz (typical)

HARMONIC DISTORTION (at 50 watts) ..... 4.2-4.5 GHz; Plus 2.5 dBc maximum, Minus 0 dBc typical
4.5-6 GHz; Plus 0.5 dBc maximum, Minus 1 dBc typical
6-8 GHz; Minus 4 dBc maximum, Minus 6 dBc typical
8-10 GHz; Minus 6 dBc maximum, Minus 9 dBc typical
Above 10 GHz; Minus 10 dBc maximum, Minus 15 dBc typical

PRIMARY POWER ..... 99-260 VAC
50/60 Hz single phase,
800 VA maximum

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

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

SIZE (W x H x D) ..... 19.8 x 6.5 x 27 in., 50.3 x 16.5 x 68.6 cm.

WEIGHT (approximate) ..... 70 lbs, 32 kg

MODEL CONFIGURATIONS

E **Package Alternatives.** May select an alternative from the following [E1C or (E1C and E2S) and/or E3H]:

E1C **Cabinet**: Without outer enclosure for rack mounting, size (W x H x D) 48.3 x 13.3 (3U) x 68.6 cm, 19.0 x 5.25 (3U) x 27 in, Subtract approximately 7 kg, 15 lbs, for removal of outer enclosure.

E2S **Slides:** slides installed, add approximately 2 kg, 5 lbs.

E3H **Handles:** Front pull handles installed.

S **Special Features:** May select a special feature (extra cost) from the following [S1R]:

S1R **Reflected Power Port**: Type N precision female connector on rear panel.

Model Number	Features	
	E	S
50T4G18	Base model	–
M1	E1C	–
M2	E3H	–
M3	E1C & E3H	–
M4	E1C & E2S	–
M5	E1C & E2S & E3H	–
M6	–	S1R

Model number example: Model 50T4G18M2 would have option E3H front pull handles installed.