Amplifiers

Model 250T6G18

Features:

- 250 W CW, 6 - 18 GHz
- TWT amplifier
- 100% mismatch tolerant
- Built-in fault monitoring and protection
- Remote control: GPIB
- Modular design for easy maintenance and service

Applications:

- EMC (military, aviation, automotive, commercial)
- Radiated and conducted EMC testing
- General purpose, antenna, and component testing

To view our full amplifier portfolio visit: https://arworld.us/twt-amplifiers/

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ISO 9001:2015 Certified
ISO 17025 :2017 Accredited

The Model 250T6G18 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 300 watt TWT provides a conservative 250 watts minimum at the amplifier output flange. Stated power specifications are at the 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, 0 dBm input, VSWR protection, gain control, RF output sample port, plus monitoring of TWT helix current, cathode voltage, collector voltage, external video pulsing, 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 250T6G18 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 package alternatives and other special features.

The export classification for this equipment is EAR99. 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.

Electrical Specifications

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Rated Power Output (6.0 - 18 GHz)	PSAT	250	300		W
Input for Rated Output	Pin			1.0	mW
				0	dBm
Operating Frequency	BW	6		18	GHz
Gain (Small Signal)		54			dB
Gain Reduction Adjustment (when below compression)		35			dB
Flatness	ΔG			±6	dB
Input Impedance	Z in			50	Ohm
				2.5:1	VSWR
Output Impedance	Z out		50		Ohm
			2.5:1		
Noise Power Density – pulse on	NPD		-70	-65	dBm/Hz
Noise Power Density – pulse off			-140		dBm/Hz
Harmonic Distortion @ 250 W	H2, H3		-8	-5	dBc
Spurious					dBc
Power Consumption	PD			2	kVa
Modulation Capability	AM, FM or Pulse				

Absolute Maximum Rating

Exceeding any of the limits listed here may result in permanent damage to the device.

Parameter	Minimum	Typical	Maximum	Unit
RF Drive				dBm
RF Load				VSWR
RF Load Reflected Will operate without damage or oscillation when connected to any load impedance.	Warning at 40	Foldback at 50	Shutdown at 80	W
AC Power - Voltage (single phase)	190		260	VAC
AC Power - Frequency	50		60	Hz
Ambient Temperature	0		+40	°C
Storage Temperature	-40		+70	°C
Altitude (derate 2°C/1000 ft over 30000 ft)			10000	ft
Shock/Vibration	Normal Truck Transport			

Mechanical Specifications		
Parameters		**Unit**
Dimensions (With Cabinet) (W x H x D)	50.3 x 29.7 x 68.5	cm
	19.8 x 11.7 x 27	in
Dimensions (No Cabinet) – xU for 19" Rack	48.3 x 26.7 x 63.5	cm
	19 x 10.5 x 25	in
Weight (With Cabinet)	53	kg
	115	lb
Weight (No Cabinet)	39	kg
	85	lb
Cooling	Forced air (self-contained fans) Air entry and exit at rear	

Regulatory Compliance	
Type	**Standard**
Low Voltage Directive	2014/35/EU
EMC	2014/30/EU
	EN 61000-6-2:2005 +AC:2005
	EN 61000-6-4:2007 +A1:2011
Safety	EN 60215:1989 + A1:1992, + A2:1994
	EN 61010-1:2010
WEEE	2012/19/EC
Export	EAR99

Connector interfaces	
Function	**Type**
RF input	N female (50 Ω), rear
RF output	WRD-650 waveguide, rear
RF output sample	N female (50 Ω), rear
IEEE-488	24-pin female, rear
Interlock	DB15 female, rear
Video	BNC female, rear

Video Pulse Capability	
Function	**Value**
Pulse width	1.0 microseconds min
Pulse Rate (PRF)	100 kHz max
RF Rise and Fall	30 ns max (10% to 90%)
Delay	300 ns max from pulse input to RF 90%
Pulse Width Distortion	±30 ns max (50% points of output pulse width compared to 50% points of input pulse width

Ordering Options

Model Configurations	
Model	**Features**
250T6G18	Base model
M1	E1C
M2	E3H
M3	E1C & E3H
M4	E1C & E2S
M5	E1C & E2S & E3H
M6	S1R
M7	S2F

Code	Feature
E	
E1C	**Cabinet:** without outer enclosure, size 48.3 x 26.7 x 63.5 cm, 19 x 10.5 x 25 in. Subtract approximately 14 kg (30 lbs), for removal of outer enclosure.
E2S	**Slides:** slides installed; add approximately 2kg (5 lbs).
E3H	**Handles:** Front handles installed.
S	
S1R	Reflected sample port on rear panel, type N female connector.
S2F	RF input, RF output, RF output sample port, and video pulse connectors on front panel

TYPICAL PSAT POWER @ 0dBm INPUT