Model 40T18G26A
M1 through M10
40 Watts CW
18GHz–26.5GHz

The Model 40T18G26A 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 40 watts minimum at the amplifier output connector. Stated power specifications are at the fundamental frequency.

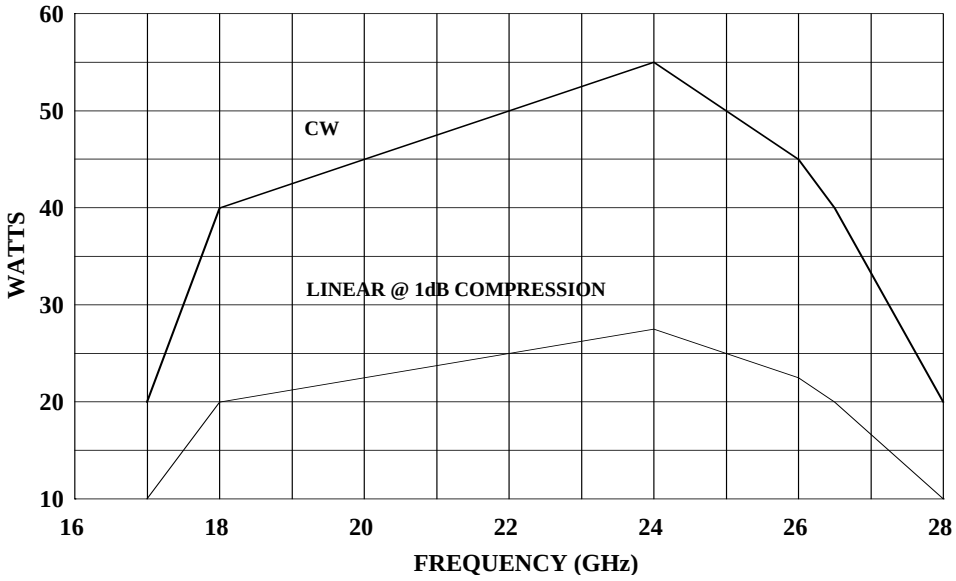
The amplifier's front panel digital display shows forward and reflected output plus extensive system status information accessed through a series of menus via soft keys. Status indicators include power on, warm-up, standby, operate, faults, excess reflected power warning and remote. Standard features include a built-in IEEE-488 (GPIB) interface, 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, the unit is designed for benchtop use but can be removed from the cabinet for rack mounting. The Model 40T18G26A 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. These sub-octave amplifiers feature moderate harmonic content.

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.

Refer to Model Configuration Chart for alternative configurations and special features.

40T18G26A TYPICAL POWER OUTUPUT



SPECIFICATIONS, 40T18G26A

POWER (fundamental), CW, @ OUTPUT CONNECTOR	
Nominal	45 watts
Minimum	40 watts
Linear @ 1 dB Compression	10 watts minimum
FLATNESS	± 8 dB maximum
FREQUENCY RESPONSE	18 – 26.5 GHz instantaneously
INPUT FOR RATED OUTPUT	1.0 milliwatt maximum
GAIN (at maximum setting)	46 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 10 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 (S2V OPTION)	
Pulse Width:	0.1 microseconds min
Pulse Rate (PRF):	10 kHz max
Duty Cycle:	Some restrictions apply. Contact AR with application requirements.
RF Rise and Fall:	100 ns max (10% to 90%)
Delay:	500 ns max from pulse input to RF90%
Pulse width distortion:	200 ns max (50% points of output pulse width compared to 50% points of input pulse width)
Noise Power Density, (pulse off):	Minus 140 dBm/Hz (typical)
Pulse Off Isolation:	80 dB minimum, 90 dB typical
Pulse Input:	TTL Level, 50 Ohm nominal termination, high level enables RF when video pulsing mode is selected.
NOISE POWER DENSITY	Minus 60 dBm/Hz (maximum) Minus 65 dBm/Hz (typical) See Model Configurations
HARMONIC DISTORTION	Minus 20 dBc maximum Minus 28 dBc typical
PRIMARY POWER	See Model Configurations
CONNECTORS	
RF input	Type K female on rear panel
RF output	Type WR-42 waveguide flange on rear panel
RF output sample port	Type K female on rear panel
Pulse input (S2V option)	Type BNC female on rear panel
GPIB	IEEE-488 on rear panel
Interlock	DB-15 female on rear panel
COOLING	Forced air (self contained fans), air entry and exit in rear
WEIGHT	30 kg, 65 lbs
SIZE (W x H x D)	50.3 x 16.5 x 68.6 cm, 19.8 x 6.5 x 27 in
EXPORT CLASSIFICATION	EAR99

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.

P **Primary Power** must select one primary power from the following options [P1 or P2]:

P1 **99-260 VAC**, 50/60 Hz, single phase, 850VA max.

P2 **400V Europe 360-435 VAC**, 3 phase, WYE (5 wire) 50/60 Hz, 850 VA max. CE marked to comply with EMC European Directive 89/336/EEC for operation inside a shielded room.

S **Special Features:** May select a special feature (extra cost) from the following [(S1R or S3F) and/or S2F and/or S5F and/or S4F]:

S1R **Reflected Power Port**: Type K 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.

S2F **Flatness**: Flatness ± 4 dB max at rated power.

S2V **Video Pulse capability**

S3F **Reflected power port**: type K female connector on front panel. Forward and reflected sample port calibration data supplied on disk in Excel format at 51 points, evenly spaced over specified frequency response.

S4F **RF input connector**: On front panel, not on rear panel.

S5F **Forward output sample port**: On front panel, not on rear panel.

S6F **RF output connector**: on front panel.

Model Number	Features E	P	S
40T18G26A	Base model	P1	–
M1	E1C	P1	–
M2	E1C & E2S & E3H	P1	–
M3	See individual Specification Sheet		
M4	E1C	P1	S2F
M5	-	P1	S1R
M6	E1C	P1	S1R
M7	E1C & E2S & E3H	P1	S1R
M8	-	P1	S2V
M9	E1C & E2S & E3H	P2	S3F, S5F, S6F
M10	E1C & E2S	P1	S1R, S2F

Model number example: Model 40T18G26AM1 would have option E1C, no outer enclosure.