



**Model 40T18G26A**  
**M1 through M9**  
**40 Watts CW**  
**18GHz–26.5GHz**

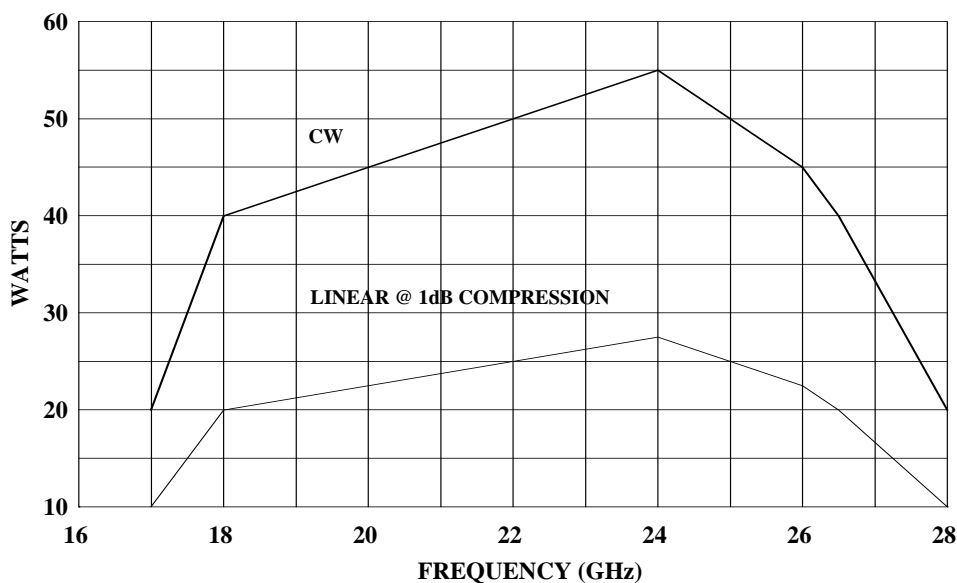
The Model 40T18G26A is a self contained, forced air cooled, broadband traveling wave tube (TWT) microwave amplifier designed for applications where wide instantaneous bandwidth, high gain and moderate power output are required. A reliable TWT provides a conservative 40 watts minimum at the amplifier 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.

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

**40T18G26A TYPICAL POWER OUTPUT**



## 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

## 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  $\pm 4$  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             |
| <b>40T18G26A</b> | Base model                         | P1 | -             |
| <b>M1</b>        | E1C                                | P1 | -             |
| <b>M2</b>        | E1C & E2S & E3H                    | P1 | -             |
| <b>M3</b>        | See individual Specification Sheet |    |               |
| <b>M4</b>        | E1C                                | P1 | S2F           |
| <b>M5</b>        | -                                  | P1 | S1R           |
| <b>M6</b>        | E1C                                | P1 | S1R           |
| <b>M7</b>        | E1C & E2S & E3H                    | P1 | S1R           |
| <b>M8</b>        | -                                  | P1 | S2V           |
| <b>M9</b>        | E1C & E2S & E3H                    | P2 | S3F, S5F, S6F |

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