



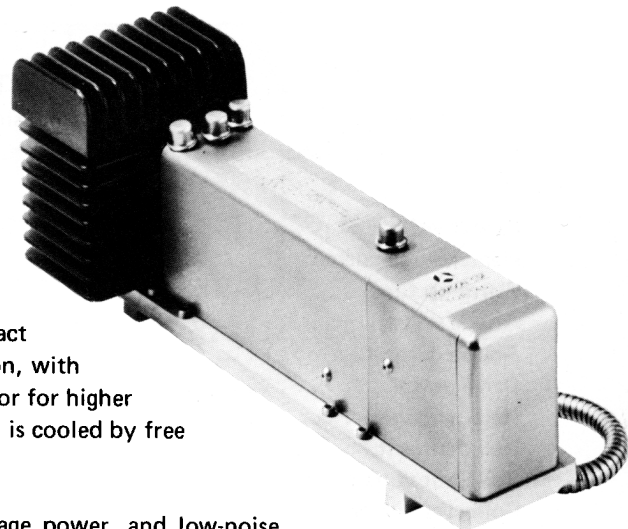
TOP 1401 25 W PPM-FOCUSED TWT

The TOP 1401 is a medium-power, helix-type, wideband traveling-wave tube, well-suited for pre-amplifier or power amplifier use in the earth stations of satellite communications systems. Operating in C band, in the range 5.9 to 6.5 GHz, it delivers more than 25 watts of CW power at the output, with minimum small-signal gain equal to 35 dB.

A periodic permanent magnet beam-focusing assembly is an integral part of the TOP 1401. This compact and lightweight TWT may be mounted in any orientation, with no degradation in performance. Using a depressed collector for higher efficiency and reduced power consumption, the TOP 1401 is cooled by free convection alone.

Its wideband, helical slow-wave circuit, good average power, and low-noise characteristics make the TOP 1401 also an excellent choice for microwave radio-link applications.

Based on extensive actual operating experience, a useful operating life of 30,000 hours or more can be expected from this TWT.



GENERAL CHARACTERISTICS

Electrical

| | | |
|-----------------------------------|------------------|-----|
| Frequency range | 5. 925 to 6. 425 | GHz |
| Output power, at saturation | ≥ 25 | W |
| Gain at rated power | ≥ 35 | dB |
| Efficiency | ≥ 20 | % |
| Noise figure | 28 | dB |
| Heater current | 0. 8 to 1. 2 | A |
| Anode voltage, maximum | 1. 80 | kV |
| Helix voltage | 3. 60 to 3. 95 | kV |
| Collector voltage | 2. 30 to 2. 40 | kV |
| Collector current | 45 to 55 | mA |



Mechanical

| | |
|--------------------------------|---------------------|
| Operating position | Any |
| Dimensions | See outline drawing |
| Weight (approx.) | 8 kg |
| RF Connections | UG 344/U Flanges |
| Power supply connections | Flying leads |
| Cooling | By convection |

ABSOLUTE RATINGS
(non-simultaneous)

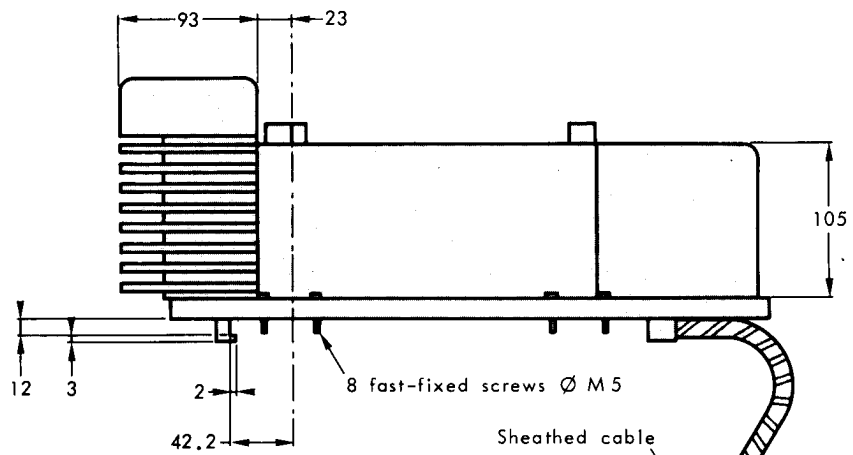
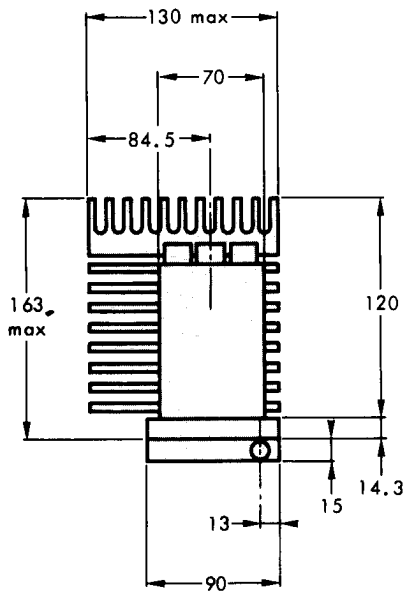
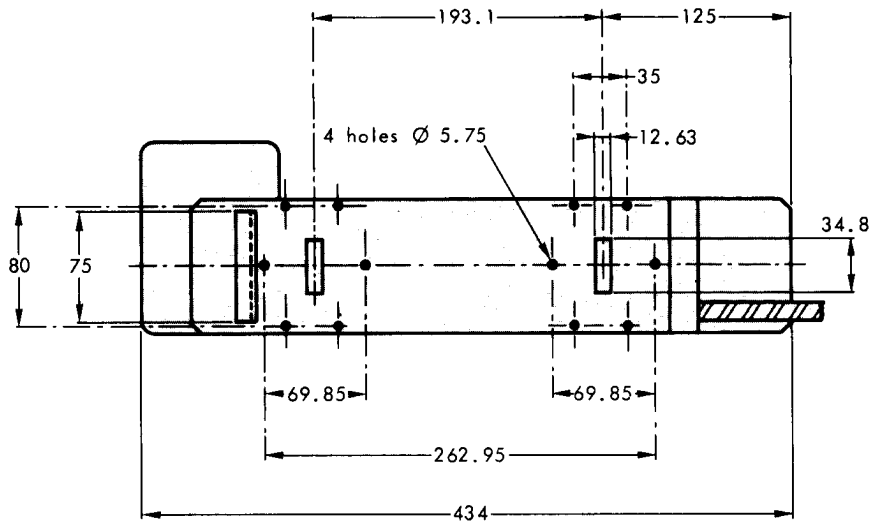
| | Min. | Max. | Units |
|-----------------------------|------|-------|-------|
| Heater voltage | 6.2 | 6.6 | V |
| Heater surge current | — | 2.0 | A |
| Warm-up time | 3 | — | mn |
| Anode voltage | — | 2.0 | kV |
| Anode current | - 1 | + 1 | mA |
| Drive power | — | 10 | mW |
| Helix voltage | 3.5 | 4.0 | kV |
| Helix current | — | 4 | mA |
| Collector voltage | 2.2 | 2.7 | kV |
| Collector current | — | 60 | mA |
| Collector dissipation | — | 140 | W |
| Ambient temperature | - 10 | + 50 | °C |
| Load VSWR | — | 2 : 1 | |

TYPICAL OPERATION

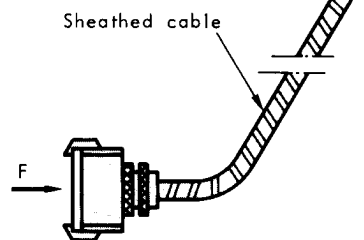
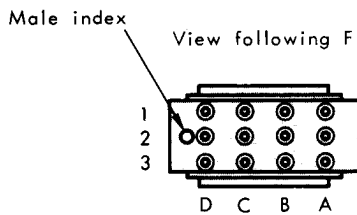
| | | |
|-------------------------|------|-----|
| Frequency | 6 | GHz |
| Output power | 25 | W |
| Gain | 38 | dB |
| Anode voltage | 1.55 | kV |
| Anode current | 0 | mA |
| Helix voltage | 3.85 | kV |
| Helix current | 0.6 | mA |
| Collector voltage | 2.30 | kV |
| Collector current | 50 | mA |



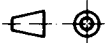
OUTLINE DRAWING



| PIN IDENTIFICATION | |
|--------------------|------------------------------|
| A1 | - Helix |
| A3 | - Heater |
| B1 | - Collector - Ground |
| C1 - D1 | - Protection circuit |
| C3 | - Anode |
| D3 | - Heater - Cathode - Wehnelt |



Dimensions nominal, in mm.



TOP 1401



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