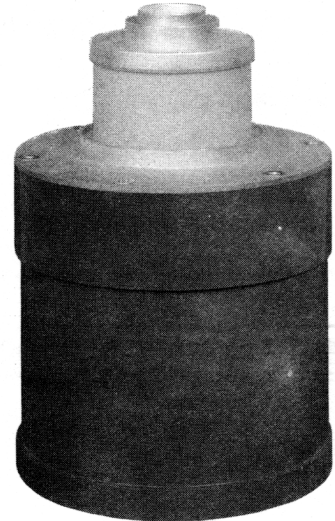




TH 591 TRIODE HYPER - VAPOTRON

The TH 591 is a ceramic metal triode designed for pulse operation at frequency up to 500 MHz. It can deliver 190 kW peak output power into the load. When used with proper cavities, a bandwidth of 12 % can be obtained. The anode cooler of special design (THOMSON patents) can dissipate 60 kW. The corresponding energy is transferred by vaporization and immediate condensation to a distilled water circuit which can be used in a secondary circuit at a temperature of 100 °C.



GENERAL CHARACTERISTICS

Electrical

Type of cathode	thoriated tungsten
Type of heating	direct
Filament voltage	10 V
Filament current	190 A
Maximum surge current	500 A
Interelectrode capacitances :	
- cathode-grid (cold)	100 pF
- cathode-anode	0.7 pF
- grid-anode	17 pF
Amplification factor	60
Transconductance	130 mA/V

Mechanical

Operating position	vertical
Anode cooling	vapor
Maximum temperature of envelope and electrode terminals	150 °C
Electrode terminal cooling	forced air
Net weight, approximate	15 kg
Dimensions	see drawing



MAXIMUM RATINGS AND TYPICAL OPERATIONS

Maximum ratings

D.C. anode voltage	18	kV
D.C. grid voltage	1000	V
Peak cathode current	120	A
Anode dissipation	60	kW
Grid dissipation	350	W
Frequency	500	MHz

Typical operations

NARROW BANDWIDTH

D.C. anode voltage	15	kV
D.C. grid voltage	-260	V
D.C. anode current during pulse	20	A
D.C. grid current during pulse	7	A
Peak driving power	18	kW
Peak input power	300	kW
Peak output power (1)	190	kW
Average dissipation power	20	kW
Pulse duration	4	ms
Repetition rate	40	Hz
Operating frequency	450	MHz

(1) Useful power at tube output.

WIDE BANDWIDTH*

D.C. anode voltage	13	kV
D.C. grid voltage	-250	V
D.C. anode current during pulse	31	A
D.C. grid current during pulse	6.5	A
Peak driving power	16	kW
Peak input power	403	kW
Peak output power (2)	135	kW
Average dissipation power	45	kW
Pulse duration	4	ms
Bandwidth at 1 dB	50	MHz
Repetition rate	40	Hz

* with 3 coupled circuit mounting of special design.

(2) Useful power at tube output.



OUTLINE DRAWING

