

TRIODE THYRATRON

XH25-500

500 mA triode hydrogen-filled thyatron primarily designed for pulse operation at high repetition frequencies, high peak currents and high voltages.

PRELIMINARY DATA

This data should be read in conjunction with DEFINITIONS AND GENERAL OPERATIONAL RECOMMENDATIONS - THYRATRONS, preceding this section of the handbook.

LIMITING VALUES (absolute ratings, not design centre)

It is important that these limits are never exceeded and such variations as mains fluctuations, component tolerances and switching surges must be taken into consideration in arriving at actual valve operating conditions.

Max. peak anode voltage (pulse modulator service)		
*Inverse	25	kV
†Forward	25	kV
Min. anode supply voltage	5.0	kV
Min. peak anode voltage		
Inverse	5.0	% of forward voltage
Forward	10	kV
Max. cathode current		
Peak	500	A
Average	500	mA
Max. negative grid voltage	450	V
Grid drive limits (measured with grid disconnected)		
Max. peak grid voltage	1.0	kV
Min. peak grid voltage	550	V
Rate of rise	1.8	kV/ μ s
Min. grid pulse duration	2.0	μ s
Max. impedance of drive circuit	200	Ω
Min. impedance of drive circuit	50	Ω
Max. pulse repetition frequency	See note ‡	
Max. rate of rise of current	2500	A/ μ s
Max. anode delay time	1.0	μ s
Typical anode delay time	0.3	μ s
Max. jitter time	0.01	μ s
Heater voltage limits	6.0 to 6.6	V
Min. cathode heating time	15	min
Ambient temperature limits	-55 to +75	$^{\circ}$ C

*In pulsed operation the peak inverse anode voltage should not exceed 5kV during the first 25 μ s after the anode pulse.

†For instantaneous starting applications where the anode voltage is applied instantaneously the maximum initial permissible forward voltage is 18kV and shall not be obtained in less than 0.04s.

‡The product of pulse repetition frequency, peak forward anode voltage and peak cathode current must not be greater than 6.25×10^9 .

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CHARACTERISTICS

Electrical

Heater voltage	6.3	V
Heater current at 6.3V		
Minimum	15	A
Maximum	22	A
*Replenisher voltage		
Minimum	3.0	V
Maximum	5.5	V
Replenisher current at 4.5V		
Minimum	2.0	A
Maximum	5.0	A

*The nominal value of replenisher voltage will be marked on the valve and the voltage must be maintained within $\pm 5\%$ of this value.

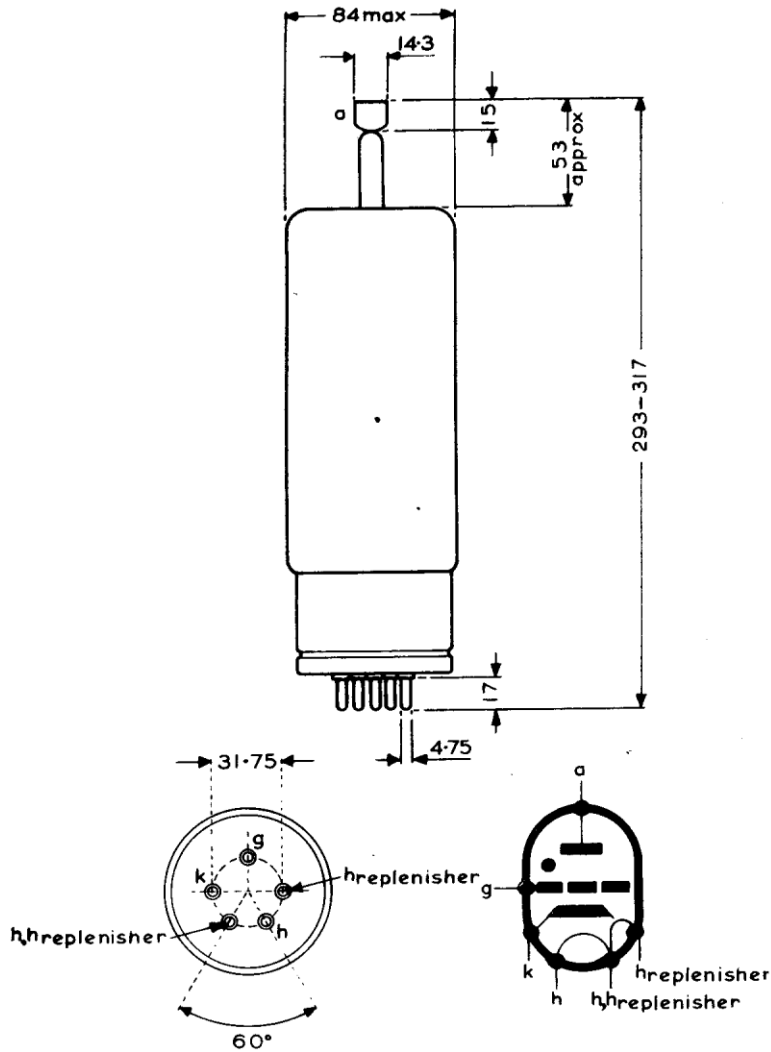
Mechanical

Type of cooling	Convection
Cooling of the anode lead is permissible but no air blast should be directly applied to the valve envelope.	
Mounting position	Any

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All dimensions in mm