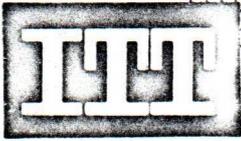


engineering TUBE DATA

Kuthe



Components Division

TYPE 6587 HYDROGEN THYRATRON

GENERAL DATA

DESCRIPTION:

The 6587 is a unipotential cathode, three element hydrogen filled thyatron[®] designed for network discharge service. In such service it is suitable for producing pulse outputs of more than 2 megawatts at an average power level of more than 1.6 KW.

The special features of the 6587 include an internal hydrogen reservoir connected across the filament and capable of producing and maintaining the hydrogen pressure throughout the useful life of the tube. Further features are the high peak voltage and current ratings and the ruggedized construction.

Electrical Data, General	Nom.	Min.	Max.
Heater voltage	6.3	5.9	6.7 Volts a.c.
Heater current. $E_H = 6.3$ volts		9.6	11.6 Amperes
Minimum heating time		3	Minutes

Mechanical Data, General	
Mounting position	Any
Base	Super Jumbo 4-pin with Bayonet A4-18 with ceramic insert
Anode Cap	Medium Metal, C1-5 with corona flare
Cooling	Note 1
Net Weight	10 Ounces

Dimensions

See outline drawing

Ratings

Max. peak anode voltage, forward	16.0 Kilovolts
Max. peak anode voltage, inverse	
(Note 2)	16.0 Kilovolts
Min. anode supply voltage	3.5 Kilovolts d.c.
Max. peak average anode current	325 Amperes
Max. average anode current	225 Milliampers
Max. RMS anode current (Note 3)	6.3 Amperes a.c.
Max. epy x ib x prr	3.9×10^6
Max. anode current rate of rise	1500 Amperes/ μ second

Peak trigger voltage	Note 4
Max. peak inverse trigger voltage	200 Volts

	Initial Limit	End of Life Limit
Max. anode delay time (Note 5)	0.6	0.6 Microsecond
Max. anode delay time drift	0.1	0.1 Microsecond
Max. time jitter (Note 6)	0.005	0.01 Microsecond

Ambient temperature	-50° to $+90^\circ$ Cent.
Shock rating	24° Navy (Flyweight) Shock machine

Typical Operation as Pulse Modulator,

DC Resonant Charging

Peak network voltage	16.0	12.0	Kilovolts
Pulse repetition rate	1000	2500	Pulses/second
Pulse length	1.0	0.4	Microsecond
Pulse forming network impedance	48	48	Ohms
Trigger voltage	200	200	Volts
Peak power output (Resistive load			
92% Zn)	1.31	.736	Megawatt
Peak anode current	175	130	Amperes
Average anode current	0.175	0.13	Amperes d.c.

Note 1

Cooling permitted. However, there shall be no air blast directly on the bulb.

Note 2

The peak inverse anode voltage shall not exceed 5.0 kv during the first 25 microseconds after the pulse.

Note 3

The root mean square anode current shall be computed as the square root of the product of the peak current and the average current.

Note 4

The Driver pulse, measured at the tube socket with the thyatron grid disconnected, shall have the following characteristics:

- A. Voltage 200-300 Volts
- B. Duration 2 Microseconds (at 70% points)
- C. Rate of rise 200 Volts/microsecond (min.)
- D. Impedance 50-500 Ohms

The limits of anode time delay and anode time jitter are based on the minimum trigger. Using the highest permissible trigger voltage and lowest trigger source impedance materially reduces these values below the limits specified.

Note 5

The time of anode delay is measured between the 26 percent point on the rising portion of the unloaded grid voltage pulse and the point at which evidence of anode conduction first appears on the loaded grid pulse.

Note 6

Time jitter is measured at the 50 percent point on the anode current pulse.

