The E-37B 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 350 kW at an average power level of more than 400 Watts. It is especially suitable for compact, airborne radar systems.

The special features of the E-37B include the high peak voltage and current ratings, its very compact size and an internal hydrogen reservoir capable of maintaining the hydrogen pressure throughout the useful life of the tube.

**ELECTRICAL DATA**

- Heater voltage 6.3 \( \pm 7.5\% \) voltage
- Heater current 6.5 amperes
- Reservoir Connected across filament
- Minimum heating time 3 minutes

**MECHANICAL DATA**

- Mounting position Any
- Overall length 4.375\( ^\prime \) max.
- Greatest diameter 1.5 \( \pm 0.06\% \)
- Wafer, pin dimensions and alignment as per JAN A4-9 Base Small Metal, C1-1
- Cap Note 4
- Cooling Note 5
- Clamping

**RATINGS**

- Anode supply voltage 2.5 KV DC (min.)
- Peak anode forward voltage (Note 6) 8.0 KV (max.)
- Peak anode inverse voltage (Note 1) 8.0 KV (max.)
- Peak anode current 83 amperes (max.)
- Average anode current 100 ma. (max.)
- Anode current rate of rise 1200 amperes/microsecond
- Grid drive voltage (Note 2) 175 V (min.)

**TYPICAL OPERATION AS PULSE MODULATOR, DC RESONANCE CHARGING**

- Anode supply voltage 4.0 KV (D.C.)
- Pulse repetition rate 4500 pps
- Pulse length .25 usec
- Pulse forming network, impedance 2n 50 ohms
- Load impedance 46 ohms
- Trigger voltage 200 volts
- Peak power output 310 KW
- Average power output 33C Watts
- Average anode current 98 ma.

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NOTE 1

The peak inverse voltage should not exceed 8 KV during the first 25 microseconds after the pulse.

NOTE 2

The driver pulse, measured at the tube socket with the thyratron grid disconnected should have the following characteristics:

A. Voltage
B. Duration
C. Impedance
D. Rate of rise

175 volts (min.)
2 microseconds (min.)
1500 ohms (max.)
0.5 us (max.)

NOTE 4

Cooling of the anode lead is permissible, but there shall be no air blast directly on the bulb.

NOTE 5

Clamps used on the bulb shall be insulated from ground.

NOTE 6

For instantaneous starting application, where the plate voltage is applied instantaneously, the maximum permissible epy is 7000 volt and shall not be attained in less than 0.04 sec.