

KUTHE LABORATORIES, INC.

5956 (E36A) HYDROGEN THYRATRON

The 5956/E-36 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 5956/E-36 include the high peak voltage and current rating, the very compact size, and a hydrogen reservoir connected internally across the filament, capable of maintaining the hydrogen pressure throughout the useful life of the tube; also an improved and stronger top seal.

ELECTRICAL DATA, GENERAL

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

MECHANICAL DATA, GENERAL

Mounting position	Any
Overall length	4 11/16 $\pm$ 5/16
Greatest diameter	1.7" max.
Base	Per outline
Anode connector	.080" tungsten wire

RATINGS

Anode supply voltage	2.5 KV (min)
Peak anode voltage forward	8 KV (max)
Peak anode voltage inverse (Note 1)	8 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
Pulse repetition rate	4500	PPS
Pulse length	.25	usec.
Pulse forming network, impedance Z_n	50	ohms
Load impedance	46	ohms
Trigger voltage	200	volts
Peak power output	310	KW
Average power output	350	watts
Anode current	90	ma
Time jitter	.01	us

NOTE 1

The peak inverse voltage should not exceed 2.5 KV during the first 25 microseconds after conduction.

NOTE 2

The voltage between grid and cathode terminals of the socket with the tube removed should have the following characteristics.

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|---------------------|------------------------------|
| a. voltage | 175 - 250 volts |
| b. duration | 2 usec. min. (at 70% points) |
| c. Source impedance | 1500 ohms (max) |
| d. rate of rise | 1000 volts/microsecond |