



IGNITRON

DC SHORT-CIRCUITING-SWITCH SERVICE

CAPACITOR-DISCHARGE SERVICE

35,000 AMPERES PEAK

The GL-7171 is a sealed, stainless-steel jacketed ignitron for use as a switch in capacitor-discharge circuits operating up to 10,000 volts. In this service

the tube will carry peak currents up to 35,000 amperes.

GENERAL

Electrical

- Cathode Excitation—Cyclic
- Cathode Spot Starting—Ignitor
- Number of Electrodes.....1
- Main Anodes.....1
- Main Cathodes.....1
- Ignitors.....1
- Arc Drop.....20 Volts
- At 4000 Amperes.....55 Volts
- At 30,000 Amperes.....10,000 Volts
- Peak Inverse Voltage, maximum.....2 Pounds

Mechanical

- Envelope Material—Stainless Steel
- Mounting Position—Axis Vertical, Anode Lead Up
- Net Weight.....25 C

Thermal

- Type of Cooling—Convection
- Ambient Temperature, minimum.....35 C
- Cathode Temperature, maximum.....55 C
- Anode-Header Temperature, maximum*

GENERAL ELECTRIC

Supersedes ET-T1512 dated 12-58

MAXIMUM RATINGS AND TYPICAL OPERATION

Capacitor-Discharge Service, Pulse Duty, Sinusoidal Current

Peak Anode Voltage		
Forward.....	10,000	Volts
Inverse.....	10,000	Volts
Critical Anode Starting Voltage, minimum.....	100	Volts
Anode Current (See Curve K-69087-72A858 for Details)		
Peak†.....	35,000	Amperes
Average.....	0.1	Amperes
Maximum Averaging Time.....	1	Cycle
Fault.....	35,000	Amperes
Maximum Duration.....	0.002	Seconds
Rate of Rise of Current		
Maximum.....	5600	Amperes per Micro-second
Minimum.....	1400	Amperes per Micro-second
Frequency of Current Conduction Periods, maximum.....	1	Per Minute
Ionization Time.....	0.5	Microseconds

DC Short-Circuiting-Switch Service

Peak Anode Voltage		
Forward.....	10,000	Volts
Inverse.....	10,000	Volts
Critical Anode Starting Voltage, minimum.....	100	Volts
Anode Current (See Curve K-69087-72A858 for Details)		
Peak†.....	35,000	Amperes
Average.....	0.25	Amperes
Maximum Averaging Time.....	1	Cycle
Fault.....	35,000	Amperes
Maximum Duration.....	0.002	Seconds
Rate of Rise of Current		
Maximum.....	5600	Amperes per Micro-second
Minimum.....	1400	Amperes per Micro-second
Frequency of Current Conduction Periods, maximum.....	1	Per Minute
Ionization Time.....	0.5	Microseconds

Ignitor Ratings

Minimum Maximum

Separate Excitation

Ignitor Voltage

Forward Open Circuit.....1500 3000 Volts

Inverse, maximum..... — 5 Volts

Ignitor Current Short Circuit..... 200 250 Amperes

Length of Firing Pulse, sine wave..... 5 10 Microseconds

Anode Firing

Ignitor Voltage

Forward, maximum.....3000 Volts

Inverse, maximum..... 5 Volts

Peak Ignitor Current..... 200 250 Amperes

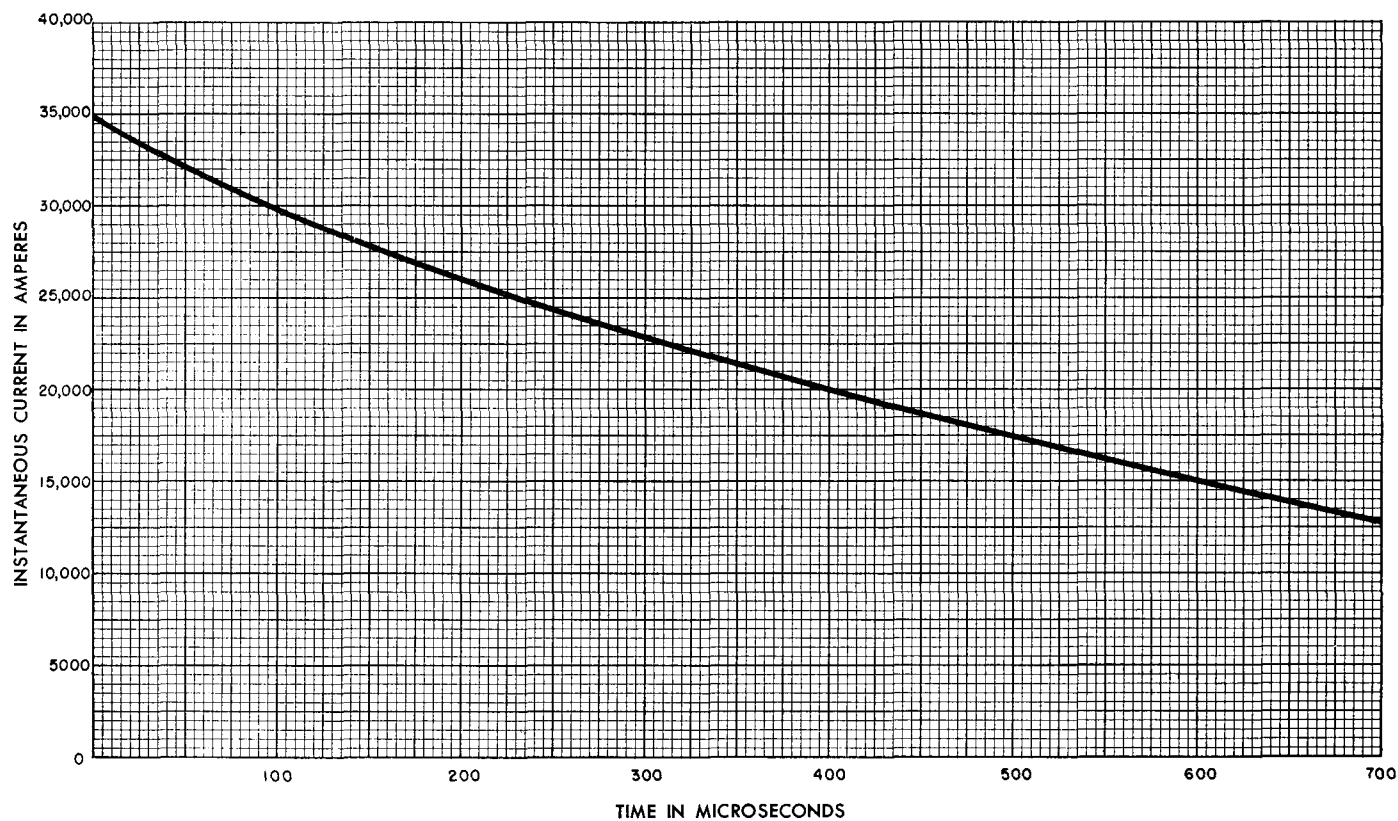
*To prevent mercury condensation, the anode-header temperature should be higher than the cathode temperature at all times. Mercury must be kept away from the anode and anode seals. Before tube operation, the anode seals must be warmed, with respect to the cathode, long enough to vaporize all mercury from the seal area.

†Dampened oscillations are permissible provided the dampening coefficient is less than the value shown on the current-waveform curve. The peak of the oscillation must not exceed 48,000 amperes.

‡Tube must be operated within the area specified on the current-waveform curve.

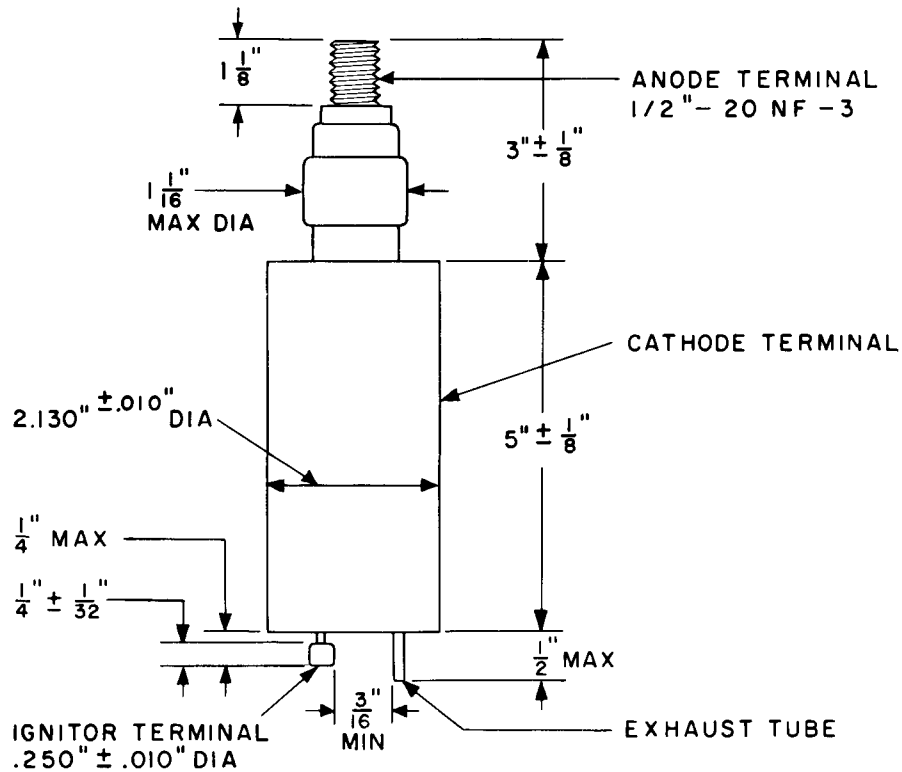
CURRENT-WAVEFORM CURVE

MAXIMUM PERMISSIBLE CURRENT

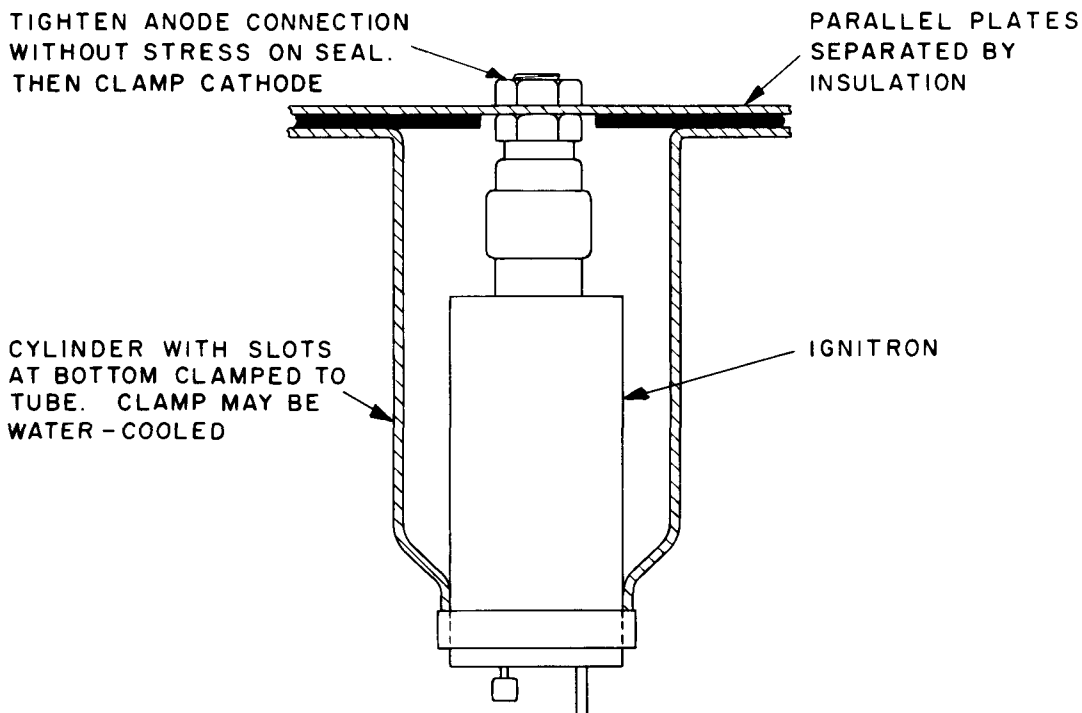


K-69087-72A858

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COAXIAL MOUNTING



K-69087-72A819

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