

IGNITRON

CAPACITOR-DISCHARGE SERVICE

DC SHORT-CIRCUITING-SWITCH 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	
Main Anodes	1
Main Cathodes	1
Ignitors	1
Arc Drop	
At 4000 Amperes	20 Volts
At 30,000 Amperes	55 Volts
Peak Inverse Voltage, maximum	10,000 Volts

Mechanical

Envelope Material—Stainless Steel	
Mounting Position—Axis Vertical, Anode Lead Up	
Net Weight	2 Pounds

Thermal

Type of Cooling—Convection	
Ambient Temperature, minimum	25 C
Cathode Temperature, maximum	35 C
Anode-Header Temperature, maximum*	55 C



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 Microsecond
Minimum	1400	Amperes per Microsecond
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 Microsecond
Minimum	1400	Amperes per Microsecond
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
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Length of Firing Pulse, sine wave	5	10	Microseconds
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Anode Firing

Ignitor Voltage

Forward, maximum	3000	Volts
Inverse, maximum	5	Volts

Peak Ignitor Current	200	250	Amperes
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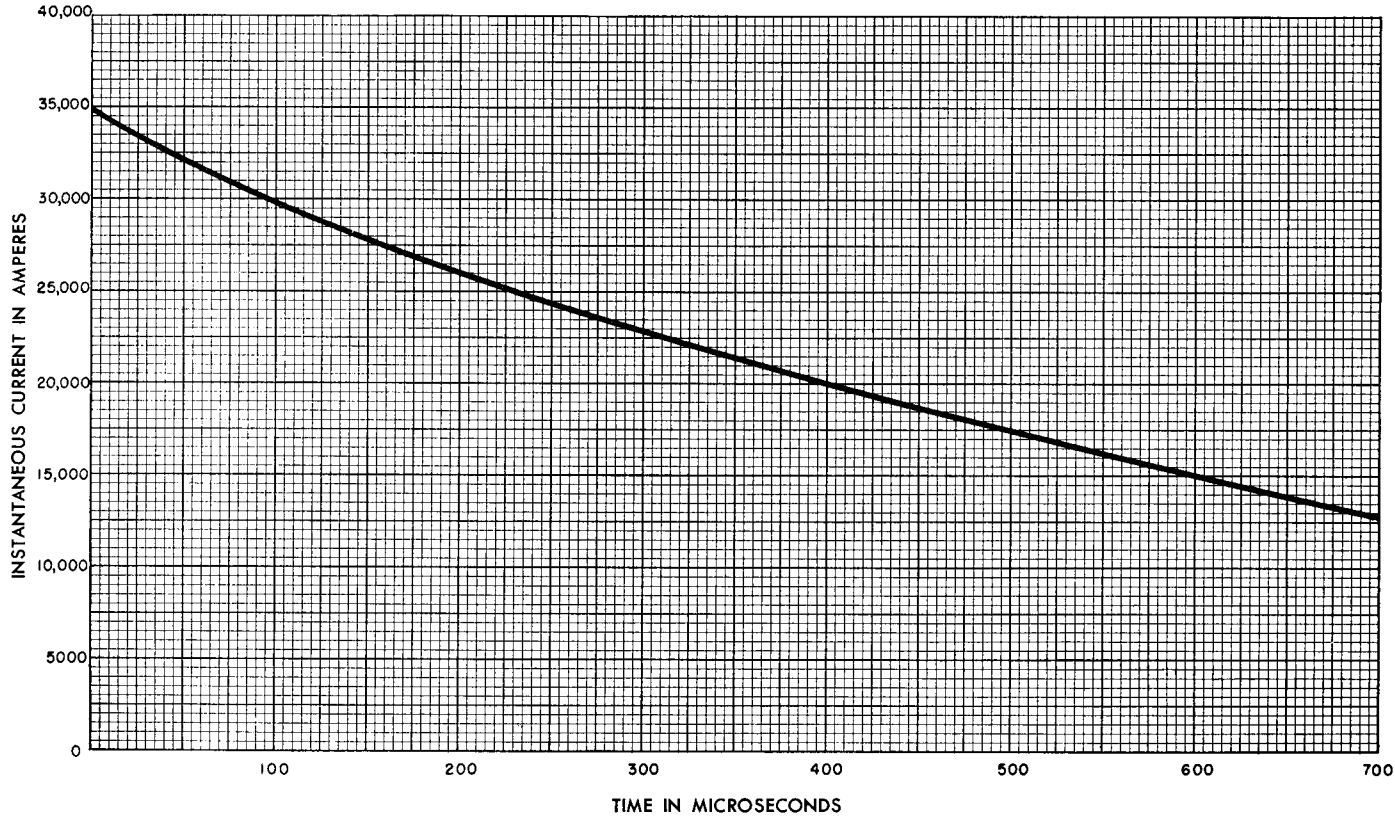
*To prevent mercury condensation, the anode-header temperature should be higher than the cathode temperature at all times. Mercury must be kept away from the anode and anode seals. Before tube operation, the anode seals must be warmed, with respect to the cathode, long enough to vaporize all mercury 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.

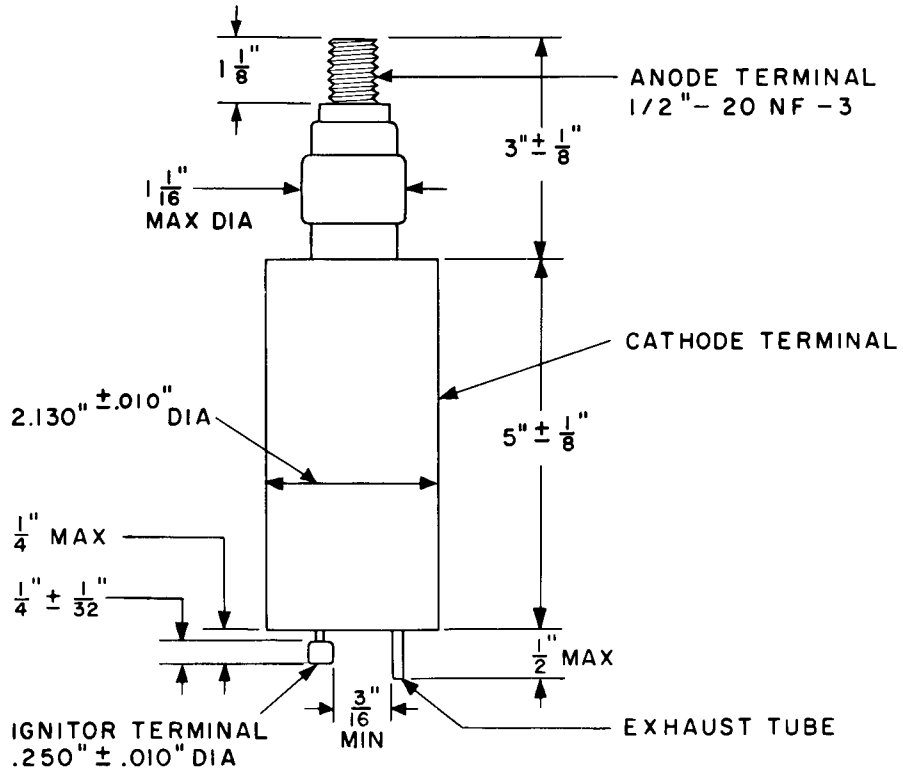
CURRENT-WAVEFORM CURVE

MAXIMUM PERMISSIBLE CURRENT



K-69087-72A858

12-6-60



COAXIAL MOUNTING

TIGHTEN ANODE CONNECTION WITHOUT STRESS ON SEAL. THEN CLAMP CATHODE

PARALLEL PLATES SEPARATED BY INSULATION

CYLINDER WITH SLOTS AT BOTTOM CLAMPED TO TUBE. CLAMP MAY BE WATER-COOLED

IGNITRON

