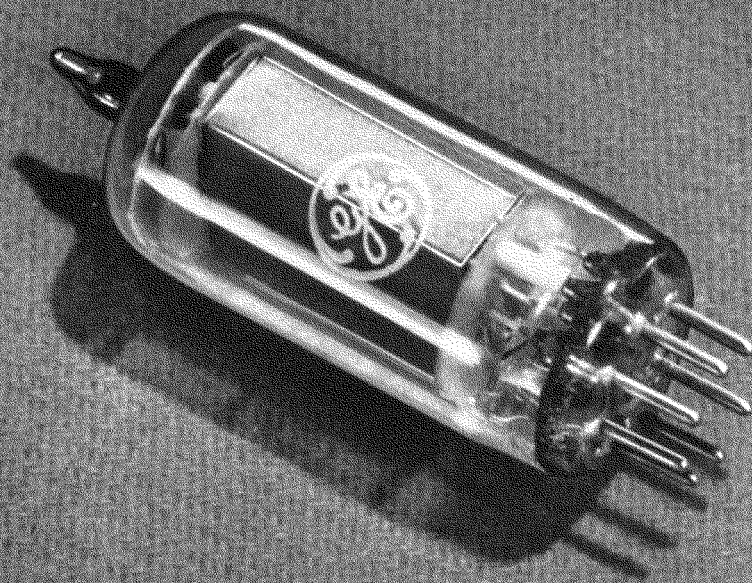




THYRATRON

DESCRIPTION

The GL-5727 is a miniature, four-electrode, inert-gas-filled thyatron with negative control characteristics which is suitable for use in relay and grid-controlled-rectifier applications. Operating characteristics of the tube include a high-control ratio essentially independent of temperature over a wide range, low grid-anode capacitance, and very low

grid current. The GL-5727 is specially designed to assure dependable life and reliable service under the exacting conditions encountered in mobile and aircraft applications. Features include a high degree of mechanical strength and a heater-cathode construction designed to withstand many-thousand cycles of intermittent operation.

TECHNICAL INFORMATION

GENERAL

Electrical Data

	Minimum	Bogey	Maximum
Heater Voltage.....	5.7	6.3	6.9 Volts
Heater Current, $E_f = 6.3$ volts.....		0.60	0.66 Ampere
Cathode Heating Time.....	10		Seconds
Anode-to-Control-Grid Capacitance.....		0.026	uuf
Control-Grid to Cathode and Shield-Grid Capacitance.....		2.4	uuf
Deionization Time, approximate			
$E_{bb} = 125$ volts d-c, $I_b = 0.1$ ampere d-c			
$E_{c1} = -100$ volts d-c.....		35	Microseconds
$E_{c1} = -11$ volts d-c.....		75	Microseconds
Ionization Time, approximate.....		0.5	Microseconds
Anode Voltage Drop.....		8	Volts
Critical Grid Current, $E_{bb} = 460$ volts rms.....		0.5	Microampere



TECHNICAL INFORMATION (CONT'D)**Mechanical Data**

Type of Cooling—Air

Mounting Position—Any

Net Weight, maximum.....0.3 Ounce

MAXIMUM RATINGS, Absolute Values**GRID-CONTROLLED RECTIFIER SERVICE**

Maximum Peak Anode Voltage

Inverse.....1300 Volts

Forward.....650 Volts

Maximum Cathode Current

Peak.....0.5 Ampere

Average.....0.1 Ampere

Maximum Averaging Time.....30 Seconds

Fault, Maximum Duration 0.1 Second.....10 Amperes

Maximum Negative Control-Grid Voltage

Before Conduction.....-100 Volts

During Conduction.....-10 Volts

Maximum Positive Control-Grid Current

Average, Averaging Time, One Cycle.....10 Milliamperes

Maximum Negative Shield-Grid Voltage

Before Conduction.....-100 Volts

During Conduction.....-10 Volts

Maximum Positive Shield-Grid Current

Average, Averaging Time, One Cycle.....10 Milliamperes

Maximum Heater-Cathode Voltage

Heater Negative.....-100 Volts

Heater Positive.....+25 Volts

Maximum Control-Grid Circuit Resistance.....0.1 Megohm

Ambient Temperature Limits.....-75 to +90 C

PULSE-MODULATOR SERVICE

Maximum Peak Anode Voltage

Inverse.....100 Volts

Forward†.....500 Volts

Maximum Cathode Current

Peak.....10 Amperes

Average.....0.01 Ampere

Maximum Negative Control-Grid Voltage

Before Conduction.....-100 Volts

During Conduction.....-10 Volts

Maximum Positive Control-Grid Current

Peak.....20 Milliamperes

Maximum Negative Shield-Grid Voltage

Before Conduction.....-50 Volts

During Conduction.....-10 Volts

Maximum Positive Shield-Grid Current

Peak.....20 Milliamperes

Maximum Pulse Duration.....5 Microseconds

Maximum Pulse Recurrence Rate.....500 Pulses per Second

Maximum Duty Cycle.....0.001

Maximum Rate of Change of Cathode Current.....100 Amperes per Microsecond

Maximum Heater-Cathode Voltage.....0 Volt

Maximum Shield-Grid Circuit Resistance.....25000 Ohms

Minimum Shield-Grid Circuit Resistance.....2000 Ohms

Maximum Control-Grid Circuit Resistance.....0.5 Megohm

Ambient Temperature Limits.....-75 to +90 C

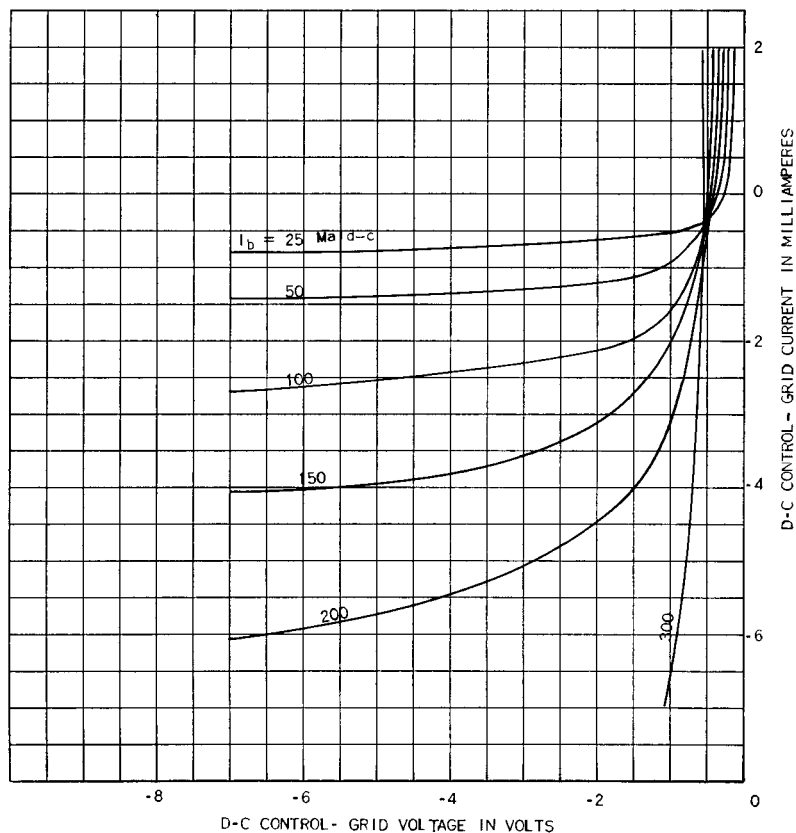
Maximum Impact Acceleration in Any Direction.....750 G

† After the completion of a pulse, a 20-microsecond delay is required before a positive voltage of more than 10 volts is applied to the tube.

AVERAGE GRID CHARACTERISTICS DURING ANODE CONDUCTION

$E_f = 6.3$ VOLTS

SHIELD-GRID VOLTS = 0



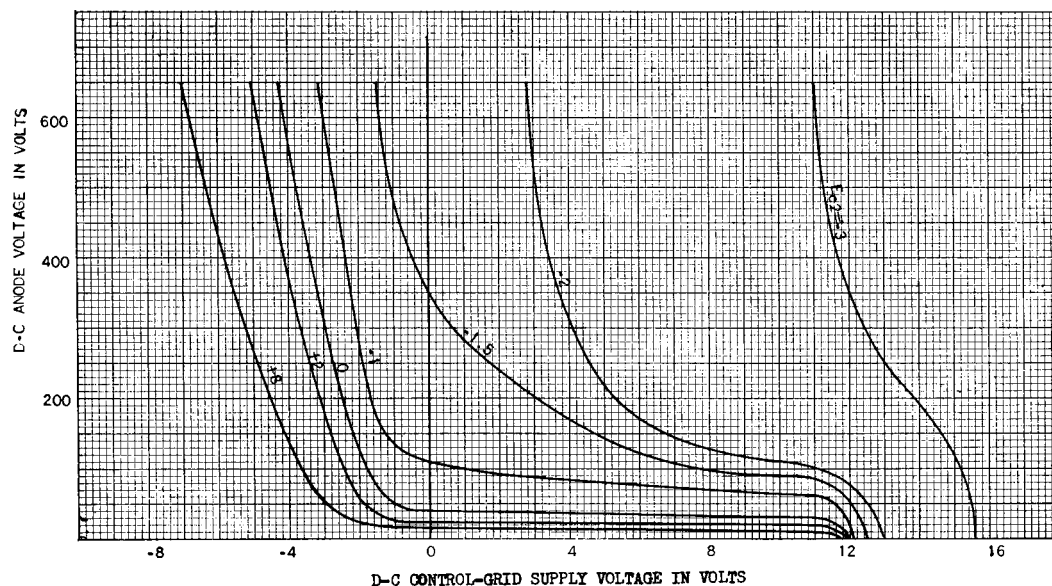
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AVERAGE CONTROL CHARACTERISTICS

$E_f = 6.3$ VOLTS

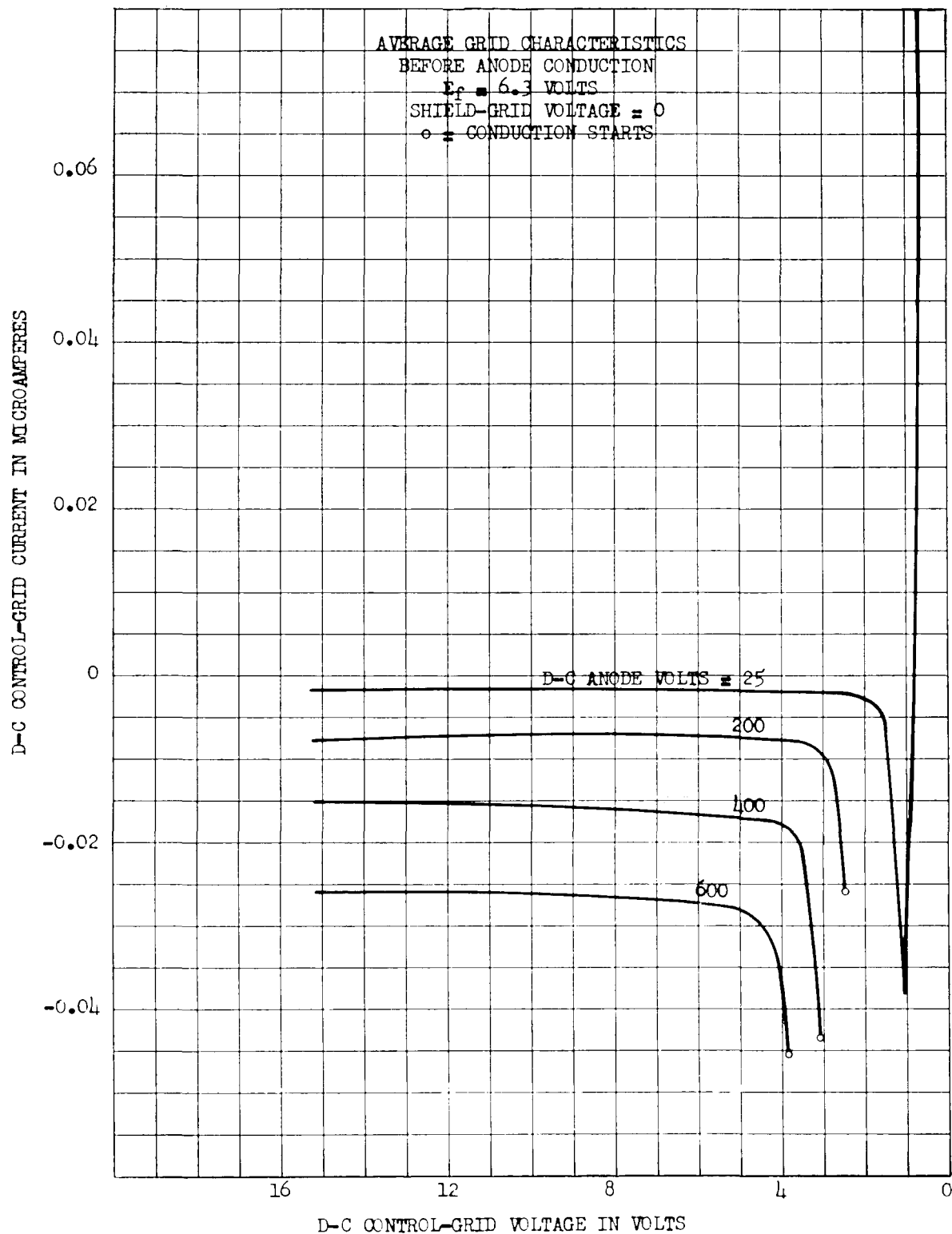
GRID RESISTOR = 0.1 MEGOHM



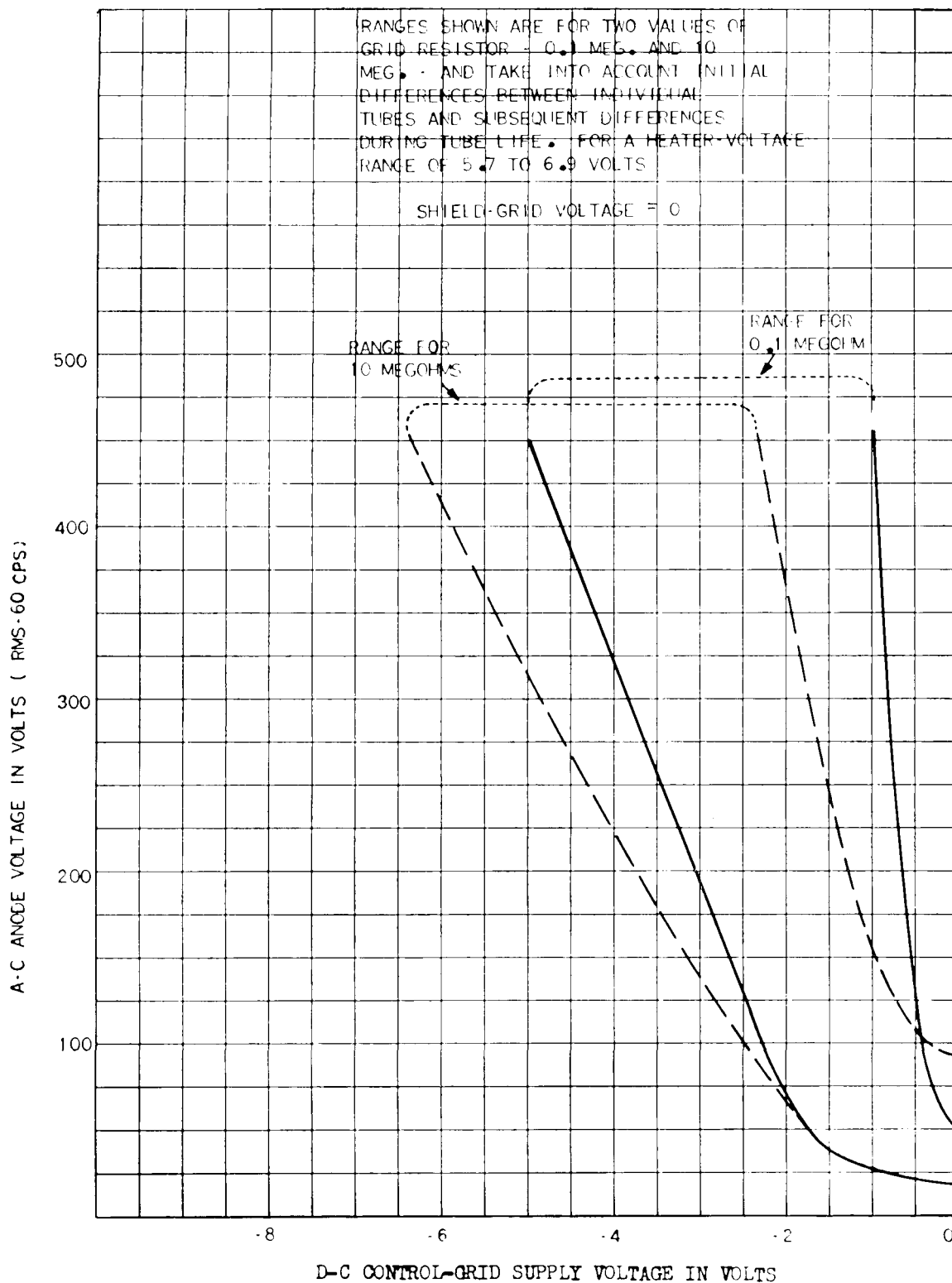
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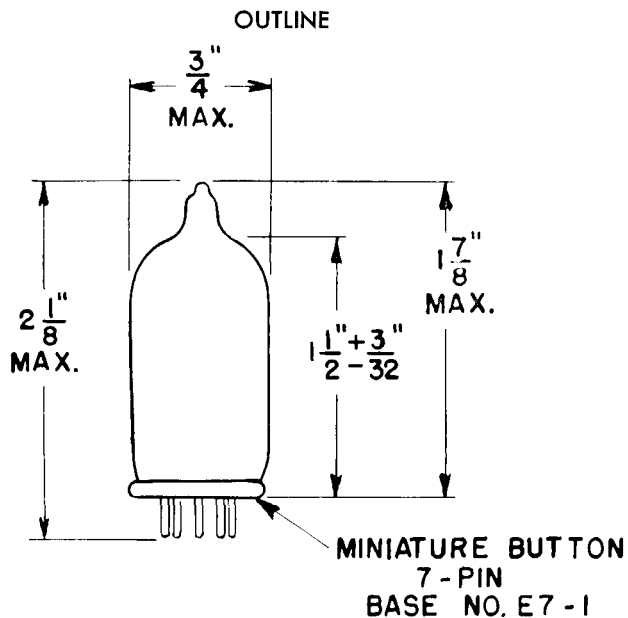
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AVERAGE GRID CHARACTERISTICS
BEFORE ANODE CONDUCTION

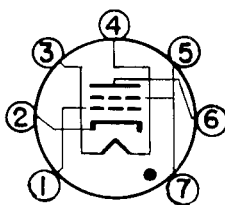


OPERATIONAL RANGE OF CRITICAL GRID VOLTAGE





BASING DIAGRAM



7BN

- PIN 1: GRID NO.1
- PIN 2: CATHODE
- PIN 3: HEATER
- PIN 4: HEATER
- PIN 5: GRID NO.2
- PIN 6: ANODE
- PIN 7: GRID NO.2

K-69087-72A481

8-22-51

Tube Department

GENERAL  ELECTRIC

Schenectady, N. Y.