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THYRATRON

MERCURY-VAPOR TRIODE

GENERAL DATA

Electrical:

Filament, Coated:

Voltage	5	volts
Current	10	amp

Minimum Heating Time:

At initial installation without anode voltage, for proper distribution of condensed mercury 15 minutes

During subsequent operation and prior to conduction, for bringing condensed-mercury temperature within operating range. } { Not less than 60 seconds to provide adequate filament heating; longer, if required by low ambient temperatures.

Direct Interelectrode Capacitances:^o

Grid to Anode	10 max.	μ mf
Grid to Cathode	20 max.	μ mf
Ionization Time	10 approx.	μ seconds
Deionization Time	1000 approx.	μ seconds
Anode Voltage Drop	15 approx.	volts
Grid Control Ratio [▲]	200 approx.	

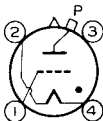
^o With no external shield.

Mechanical:

Mounting Position	Vertical, base down
Overall Length	10-1/8" to 11-1/16"
Maximum Diameter	3-7/8"
Cooling	Convection
Bulb	T-24
Cap	Skirted Medium No. 3985
Base	Medium-Metal-Shell Jumbo 4-Pin, Bayonet

BOTTOM VIEW

Pin 1 - Grid
Pin 2 - Filament,
Internal
Shield



Pin 3 - No
Connection
Pin 4 - Filament
Cap - Anode

Maximum Ratings, Absolute Values:

For Anode-Supply Frequencies between 25 and 150 cps

COND. MERCURY TEMP. RANGE [□]	25 - 55	25 - 50	^o C
PEAK ANODE VOLTAGE:			
Forward	10000 max.	15000 max.	volts
Inverse	10000 max.	15000 max.	volts
GRID VOLTAGE:			
Before Anode			
Conduction (Peak or DC)	-500 max.	-500 max.	volts
During Anode			
Conduction (Average) [●]	-10 max.	-10 max.	volts

[▲], [□], [●]: See next page.

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CATHODE CURRENT:

Peak	10 max.	6.4 max.	amp
Average	1.8 max.	1.6 max.	amp
Surge, for max. duration of 0.1 second . . .	200 max.	200 max.	amp
Averaging Time	1	1	cycle

GRID CURRENT:

Peak	+1 max.	+1 max.	amp
Average	+0.1 max.	+0.1 max.	amp
Averaging Time	1	1	cycle

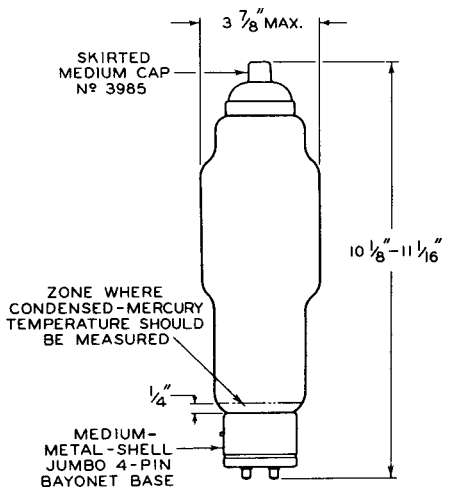
Maximum Circuit Values:

Grid-Circuit Resistance. 0.1 max. 0.1 max. megohm

▲ For conditions with 0.1-megohm grid resistor, circuit returns to pin No. 2 as datum of potential, and filament voltage at pin No. 4 180° out of phase with the anode voltage.

□ Recommended operating value is $40^{\circ} \pm 5^{\circ}\text{C}$.

● Averaged over one conducting cycle.



92CS-6832

JUNE 20, 1947

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

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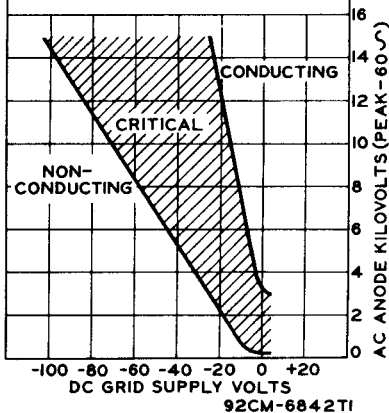
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OPERATIONAL RANGE OF CRITICAL GRID VOLTAGE

TYPE 5563

RANGE IS FOR CONDITIONS WHERE:

$E_f = 5$ VOLTS AC $\pm 5\%$; CIRCUIT RE RETURNS TO PIN N^o2; FIL. VOLTAGE AT PIN N^o4 IS (-) WHEN ANODE VOLTAGE IS (+). THE RANGE INCLUDES INITIAL & LIFE VARIATIONS OF INDIVIDUAL TUBES. GRID RESISTOR = 10000 TO 100000 OHMS. COND. MERCURY TEMPERATURE = 25° TO 50°C.



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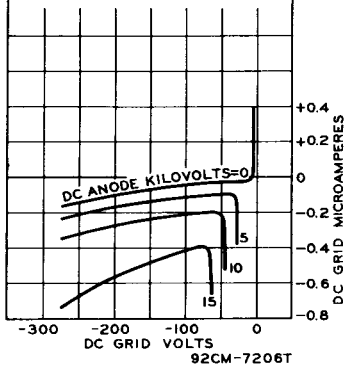
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AVERAGE GRID CHARACTERISTICS BEFORE ANODE CONDUCTION

TYPE 5563

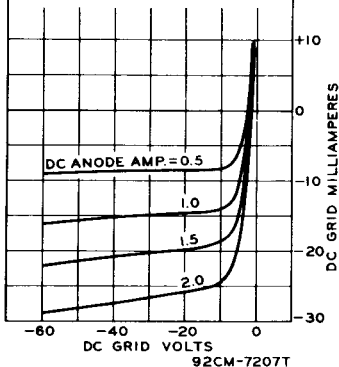
$E_f = 5$ VOLTS AC; CIRCUIT RETURNS TO PIN N^o2; FILAMENT VOLTAGE AT PIN N^o4 IS (+) WHEN ANODE VOLTAGE IS (+); GRID RESISTOR (OHMS)=0; CONDENSED-MERCURY TEMPERATURE = 46°C.



AVERAGE GRID CHARACTERISTICS DURING ANODE CONDUCTION

TYPE 5563

$E_f = 5$ VOLTS AC; CIRCUIT RETURNS TO PIN N^o2; FILAMENT VOLTAGE AT PIN N^o4 IS (+) WHEN ANODE VOLTAGE IS (+); GRID RESISTOR (OHMS)=0; CONDENSED-MERCURY TEMPERATURE = 46°C.





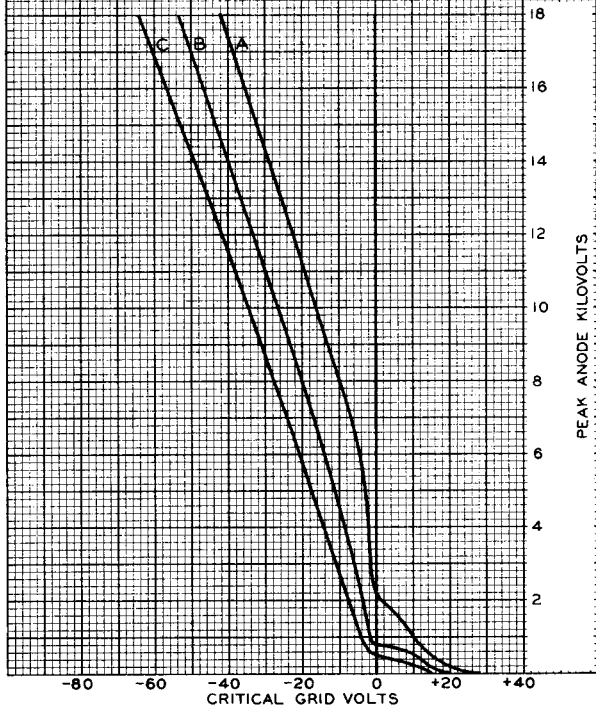
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AVERAGE CONTROL CHARACTERISTICS

$E_f = 5$ VOLTS AC
CIRCUIT RETURNS TO PIN №2.
FILAMENT VOLTAGE AT PIN №4
IS (+) WHEN ANODE VOLTAGE IS (+).
GRID RESISTOR = 25000 OHMS.

CURVE	CONDENSED MERCURY TEMPERATURE
A	25°C
B	40°C
C	55°C



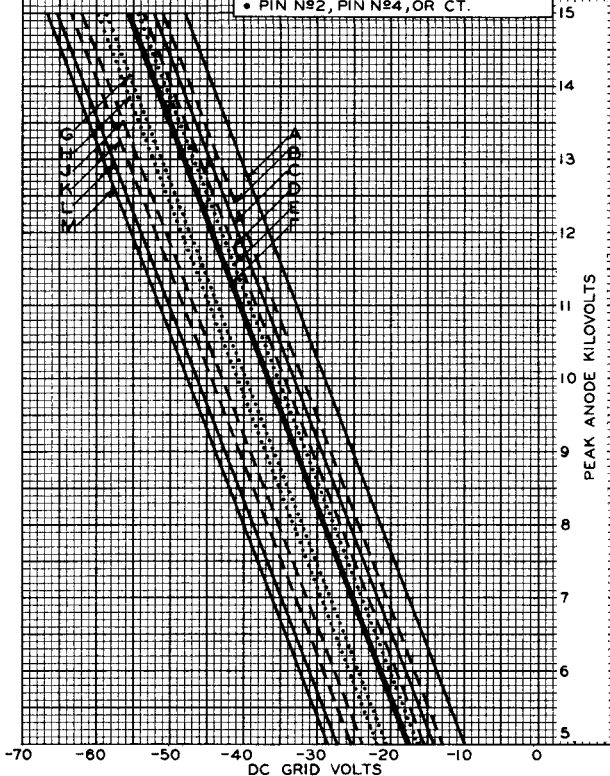


SHIFT OF AVERAGE CONTROL CHARACTERISTICS WITH CHANGE IN FILAMENT PHASING AND CIRCUIT RETURN

 $E_f = 5 \text{ VOLTS AC}$

CURVE	PHASE ANGLE DEGREES*	CIRCUIT RETURN	CURVE	PHASE ANGLE DEGREES*	CIRCUIT RETURN
A ———	0	PIN N ^o 2	G	135	PIN N ^o 4
B - - -	0	CT ^o	H	180	PIN N ^o 4
C ———	45	PIN N ^o 2	J - - -	135	CT ^o
D - - -	45	CT ^o	K - - -	180	CT ^o
E	0	PIN N ^o 4	L ———	135	PIN N ^o 2
F ———	90	ANY ^o	M ———	180	PIN N ^o 2

- * BETWEEN FILAMENT VOLTAGE AT PIN N^o4 AND ANODE VOLTAGE
 ◻ CENTER TAP OF FILAMENT TRANSFORMER
 • PIN N^o2, PIN N^o4, OR CT.

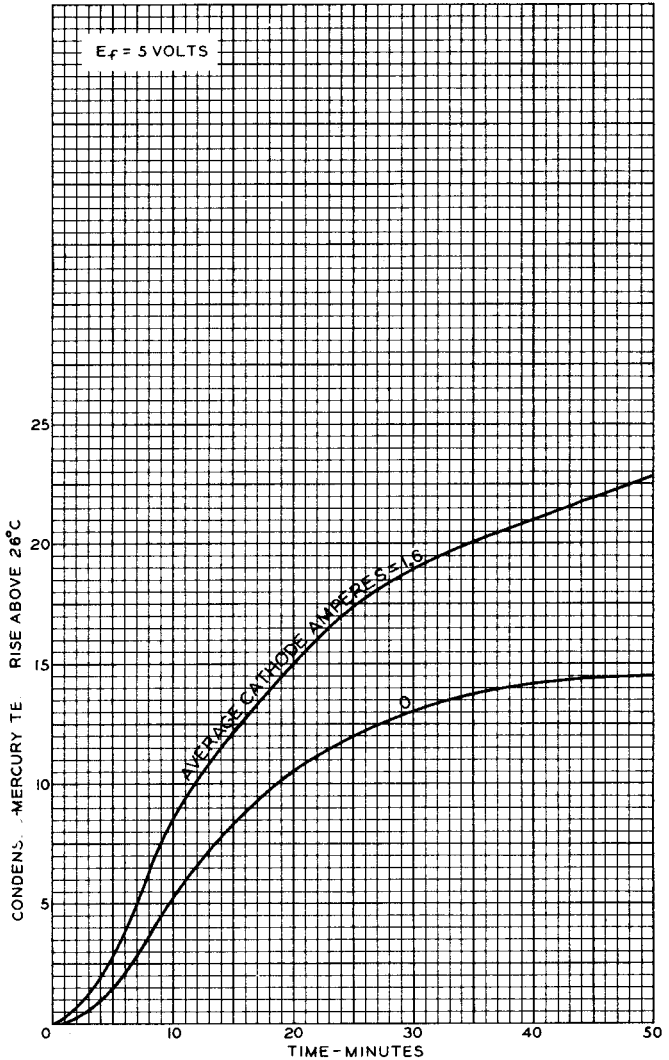




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OPERATION CHARACTERISTICS



MAY 4, 1949

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