



5563

THYRATRON

MERCURY-VAPOR TRIODE

5563

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:⁰Grid to Anode. 10 max. μ fGrid to Cathode. 20 max. μ fIonization Time. 10 approx. μ secondsDeionization Time 1000 approx. μ seconds

Anode Voltage Drop 15 approx. volts

Grid Control Ratio[▲] 200 approx.⁰ 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 VIEWPin 1-Grid
Pin 2-Filament,
Internal
ShieldPin 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 °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.

JUNE 20, 1947

TUBE DEPARTMENT

RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

TENTATIVE DATA

5563



5563

THYRATRON

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

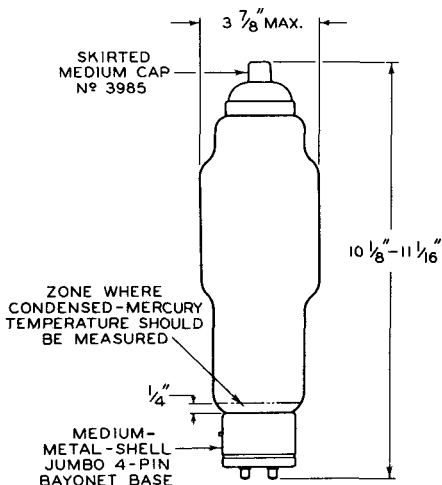
GRID CURRENT:

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

CE-6832



5563

THYRATRON

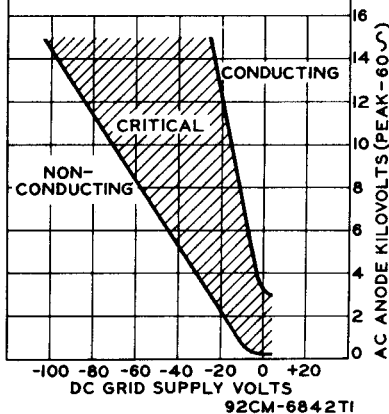
5563

OPERATIONAL RANGE
OF CRITICAL GRID VOLTAGE

TYPE 5563

RANGE IS FOR CONDITIONS WHERE:

$E_f = 5$ VOLTS AC $\pm 5\%$; CIRCUIT RETURNS TO
PIN N $\circ$ 2; FIL. VOLTAGE AT PIN N $\circ$ 4 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.





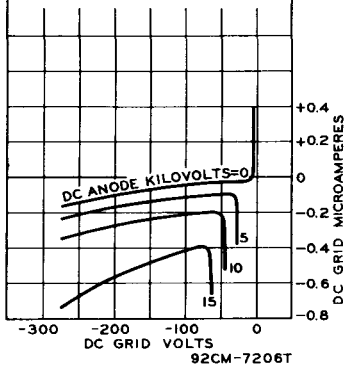
5563

THYRATRON

AVERAGE GRID CHARACTERISTICS
BEFORE ANODE CONDUCTION

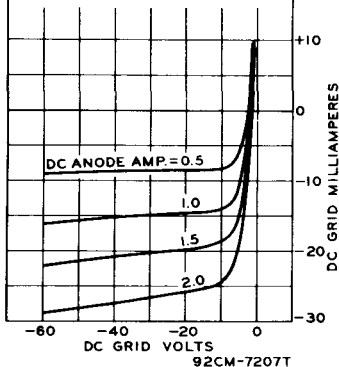
TYPE 5563

$E_f = 5$ 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.





5563

5563

AVERAGE CONTROL CHARACTERISTICS

 $E_f = 5$ VOLTS AC

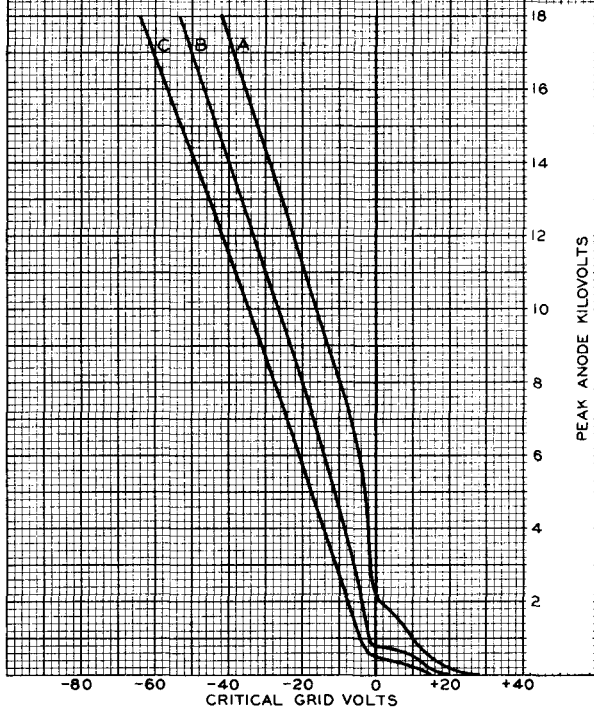
CIRCUIT RETURNS TO PIN №2.

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

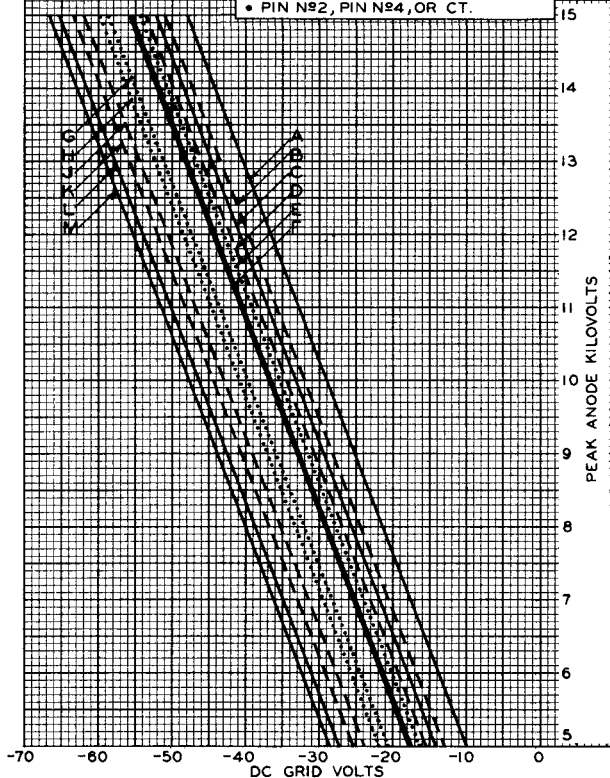
 $E_f = 5 \text{ VOLTS AC}$

CURVE	PHASE ANGLE DEGREES*	CIRCUIT RETURN	CURVE	PHASE ANGLE DEGREES*	CIRCUIT RETURN
A ———	0	PIN N ^o 2	G 135	135	PIN N ^o 4
B - - -	0	CT ^o	H 180	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	0	PIN N ^o 4	L ———	135	PIN N ^o 2
F ———	90	ANY*	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.

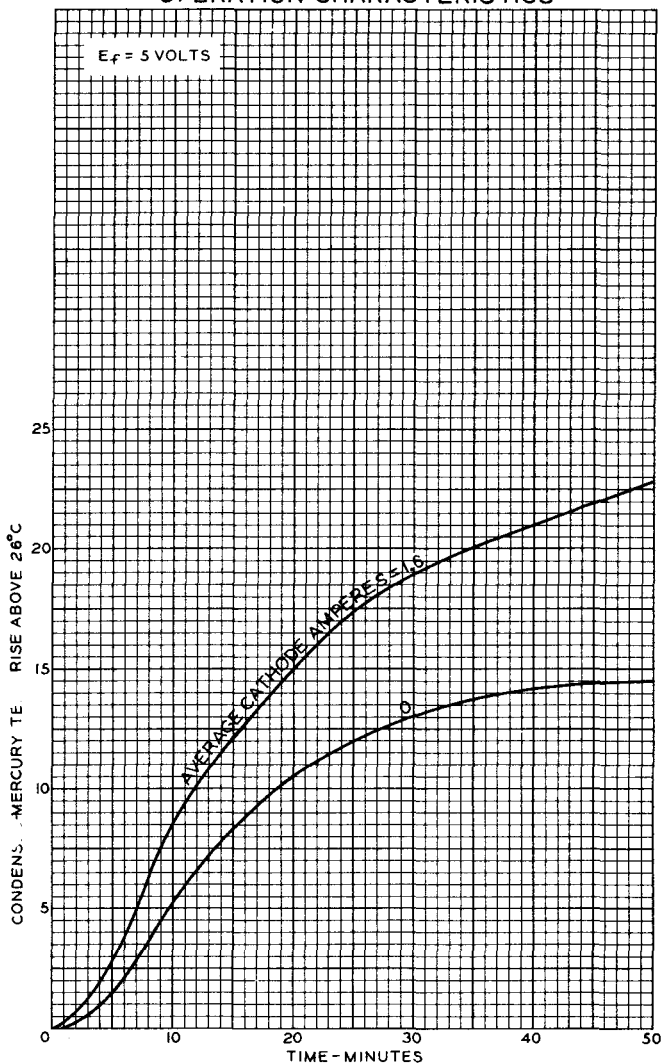




5563

5563

OPERATION CHARACTERISTICS



MAY 4, 1949

TUBE DEPARTMENT
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

92CM-7267