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# THYRATRON

MERCURY-VAPOR TRIODE

## DATA

### Electrical:

Heater, for Unipotential Cathode:

Voltage. . . . .	5.0	volts
Current. . . . .	4.5	amp

Cathode:

Minimum Heating Time, prior to tube conduction . . . . .	5	minutes
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Direct Interelectrode Capacitances (Approx.):

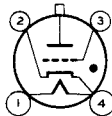
Grid to Anode. . . . .	2.5	$\mu$ f
Grid to Cathode. . . . .	10	$\mu$ f
Ionization Time (Approx.). . . . .	10	$\mu$ sec
Deionization Time (Approx.) . . . . .	1000	$\mu$ sec
Anode Voltage Drop (Approx.) . . . . .	16	volts

Grid-No.1 Control Ratio (Approx.) with grid-No.1 resistor (megohms) = 0 . . . . .	220
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### Mechanical:

Mounting Position. . . . .	Vertical, Base Down
Overall Length . . . . .	7" $\pm$ 1/4"
Seated Length. . . . .	6-3/8" $\pm$ 1/4"
Maximum Diameter . . . . .	3"
Bulb . . . . .	ST-23
Cap. . . . .	Medium
Base . . . . .	Medium-Shell Small 4-Pin, Bayonet
Basing Designation for BOTTOM VIEW . . . . .	4BL

Pin 1-Heater  
 Pin 2-Cathode;  
 Circuit  
 Returns



Pin 3-Grid  
 Pin 4-Heater,  
 Cathode  
 Cap-Anode

### Maximum Ratings, Absolute Values:

PEAK ANODE VOLTAGE:		
Forward. . . . .	1000 max.	volts
Inverse. . . . .	1000 max.	volts
GRID VOLTAGE:		
Before Conduction. . . . .	-500 max.	volts
During Conduction. . . . .	-10 max.	volts
CATHODE CURRENT:		
Peak . . . . .	15 max.	amp
Average** . . . . .	2.5 max.	amp
Fault, for 0.1 sec. maximum. . . . .	200 max.	amp
GRID CURRENT:		
Average** . . . . .	+0.25 max.	amp
COND.-MERCURY TEMPERATURE RANGE <sup>▲</sup> . . . . .	+40 to +80	$^{\circ}$ C
OPERATING FREQUENCY. . . . .	150 max.	cps

\*\* Averaged over any interval of 15 sec. max.  
 ▲ Recommended operating temperature is 40 $^{\circ}$ C.

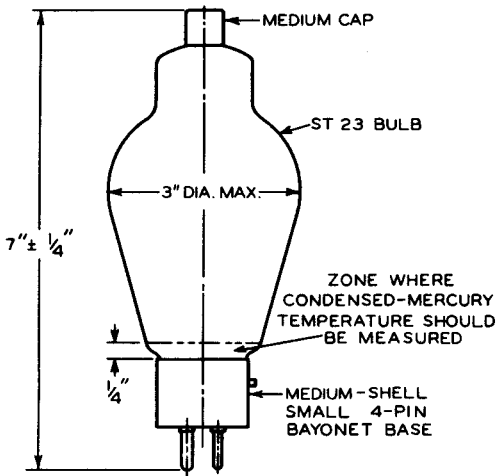
← Indicates a change.

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92CS-6743R1



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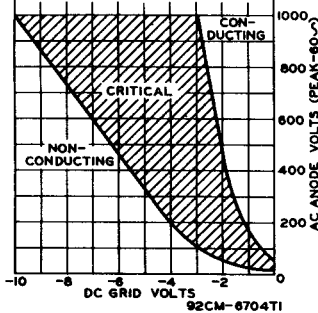
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## OPERATIONAL RANGE OF CRITICAL GRID VOLTAGE

### TYPE 5559

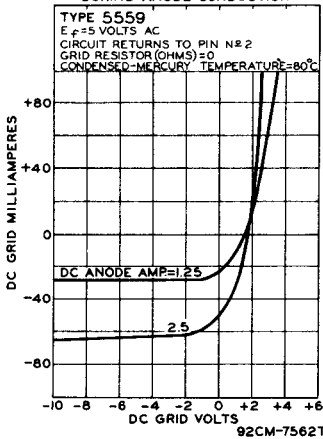
RANGE IS FOR CONDITIONS WHERE:  
 $E_p = 5$  VOLTS AC  $\pm 5\%$ ; CIRCUIT RETURNS TO PIN N $\#$  2. THE RANGE INCLUDES INITIAL & LIFE VARIATIONS OF INDIVIDUAL TUBES, AS WELL AS CHANGE IN CHARACTERISTICS DUE TO HEATER PHASING. GRID RESISTOR (OHMS) = 0 COND-MERCURY TEMPERATURE =  $40^\circ\text{C}$



## AVERAGE GRID CHARACTERISTICS DURING ANODE CONDUCTION

### TYPE 5559

$E_f = 5$  VOLTS AC  
 CIRCUIT RETURNS TO PIN N $\#$  2  
 GRID RESISTOR (OHMS) = 0  
 CONDENSED-MERCURY TEMPERATURE =  $80^\circ\text{C}$



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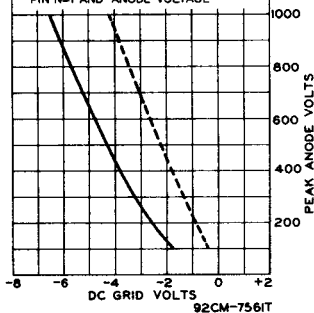
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## SHIFT OF AVERAGE CONTROL CHARACTERISTIC WITH CHANGE IN HEATER PHASING

TYPE 5559  $E_f = 5$  VOLTS AC  
CONDENSED-MERCURY TEMPERATURE =  $40^\circ\text{C}$   
GRID RESISTOR (OHMS) = 0

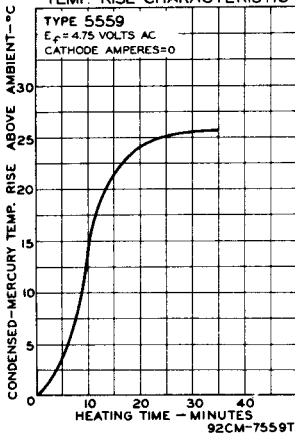
CURVE	PHASE ANGLE DEGREES *	CIRCUIT RETURN
—	$180^\circ$	PIN N#2
- - -	$0^\circ$	PIN N#2

\* BETWEEN HEATER VOLTAGE AT PIN N#1 AND ANODE VOLTAGE



## TEMP.-RISE CHARACTERISTIC

TYPE 5559  
 $E_f = 4.75$  VOLTS AC  
CATHODE AMPERES = 0



MARCH 1, 1951

TUBE DEPARTMENT  
RADIO CORPORATION OF AMERICA, HARRISON, NEW JERSEY

CE-7561T-7559T