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# MERCURY-VAPOR THYRATRON

NEGATIVE-CONTROL TETRODE TYPE

## GENERAL DATA

### Electrical:

Heater, for Unipotential Cathode:

Voltage . . . . .	5 <sup>•</sup>	. . . . .	ac or dc volts
Current . . . . .	5	. . . . .	amp

Cathode:

Minimum heating time prior to tube conduction . . . . .	5	minutes
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Direct Interelectrode Capacitances (Approx.):

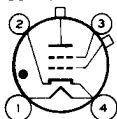
Grid No.1 to anode . . . . .	0.04	$\mu$ f
Grid No.2 to anode . . . . .	3	$\mu$ f
Ionization Time (Approx.) . . . . .	10	$\mu$ sec
Deionization Time (Approx.) . . . . .	1000	$\mu$ sec
Maximum Critical Grid-No.1 Current . . . . .	2	$\mu$ amp
Anode Voltage Drop (Approx.) . . . . .	12	volts

### Mechanical:

Mounting Position . . . . .	Vertical, base down
Maximum Overall Length . . . . .	8-5/16"
Seated Length . . . . .	7-1/2" $\pm$ 1/4"
Maximum Radius (Including side cap) . . . . .	1-3/4"
Weight (Approx.) . . . . .	9 oz
Bulb . . . . .	T-18
Top Cap . . . . .	Skirted Medium (JETEC No.C1-29)
Side Cap . . . . .	Saddle Medium
Base . . . . .	Skirted-Medium-Shell Small 4-Pin with Bayonet (JETEC No.A4-71)

Basing Designation for BOTTOM VIEW. . . . . 4CD

Pin 1-Heater  
 Pin 2-Cathode,  
 Circuit  
 Returns  
 Pin 3-Grid No.2



Pin 4-Heater,  
 Cathode  
 Top Cap-Anode  
 Side Cap-Grid No.1

### Temperature Control:

**Heating**--When the ambient temperature is so low that the normal rise of condensed-mercury temperature above the ambient temperature will not bring the condensed-mercury temperature up to the minimum value of the operating range specified under *Maximum Ratings*, some form of heat-conserving enclosure or auxiliary heater will be required.

**Cooling**--When the operating conditions are such that the maximum value of the operating condensed-mercury temperature is exceeded, provision should be made for forced-air cooling sufficient to prevent exceeding the maximum value.

<sup>•</sup> Under operating conditions where the average anode current does not exceed 0.5 ampere, the heater voltage may be increased to 5.5 volts.



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# MERCURY-VAPOR THYRATRON

## IGNITOR-FIRING AND GRID-CONTROLLED RECTIFIER SERVICE

### Maximum Ratings, Absolute Values:

For anode-supply frequency of 60 cps

Operating Condensed-Mercury  
Temperature Range  
40° to 80°C<sup>■</sup>

### PEAK ANODE VOLTAGE:

Forward . . . . .	1500 max.	volts
Inverse . . . . .	1500 max.	volts

### GRID-No.2 (SHIELD-GRID) VOLTAGE:

Peak, before tube conduction . . . . .	-300 max.	volts
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### GRID-No.1 (CONTROL-GRID) VOLTAGE:

Peak, before tube conduction . . . . .	-1000 max.	volts
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### CATHODE CURRENT:

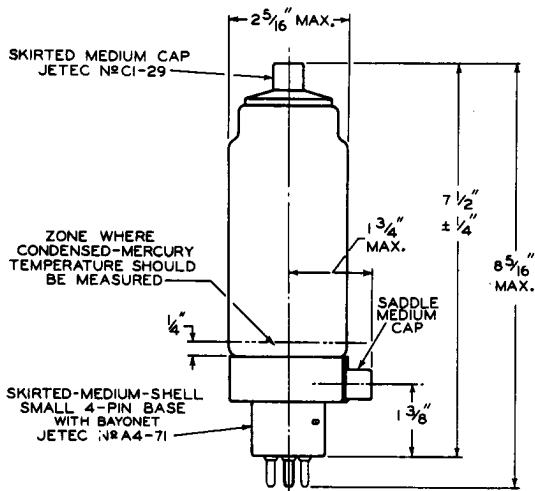
Peak . . . . .	30 max.	amp
Average* . . . . .	2.5 max.	amp
Fault, for duration of 0.1 second max. . . . .	150 max.	amp

AVERAGE GRID-No.2 CURRENT* . . . . .	+0.25 max.	amp
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AVERAGE GRID-No.1 CURRENT* . . . . .	+0.25 max.	amp
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<sup>■</sup> Recommended temperature range of condensed mercury is 45° to 50°C.

\* Averaged over any interval of 30 seconds maximum.





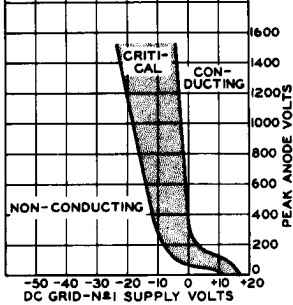
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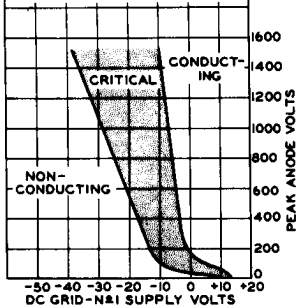
## OPERATIONAL RANGES OF CRITICAL GRID-N#2 VOLTAGE

$E_f = 5$  VOLTS  
 GRID-N#2 (SHIELD) VOLTS = 0  
 RANGE SHOWN TAKES INTO AC-  
 COUNT INITIAL DIFFERENCES  
 BETWEEN INDIVIDUAL TUBES  
 AND SUBSEQUENT DIFFER-  
 ENCES DURING TUBE LIFE.  
 GRID RESISTOR = 0 OHMS  
 CONDENSED-MERCURY TEMP-  
 ERATURE = 40° TO 80° C



92CS-9008T

$E_f = 5$  VOLTS  
 GRID-N#2 (SHIELD) VOLTS = 10  
 RANGE SHOWN TAKES INTO AC-  
 COUNT INITIAL DIFFERENCES  
 BETWEEN INDIVIDUAL TUBES  
 AND SUBSEQUENT DIFFER-  
 ENCES DURING TUBE LIFE.  
 GRID RESISTOR = 0 OHMS  
 CONDENSED-MERCURY TEMPER-  
 ATURE RANGE = 40° TO 80° C



92CS-9007T