

# Vacuum Phototube

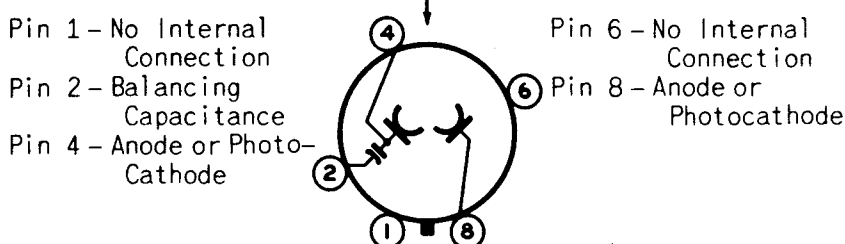
## COMPOSITE-ANODE-CATHODE, SIDE-ON TYPE HAVING S-4 RESPONSE

### DATA

#### General:

|                                                          |                                                                                            |
|----------------------------------------------------------|--------------------------------------------------------------------------------------------|
| Spectral Response . . . . .                              | S-4                                                                                        |
| Wavelength of Maximum Response. . . . .                  | 4000 $\pm$ 500 angstroms                                                                   |
| Cathode:                                                 |                                                                                            |
| Shape . . . . .                                          | Flat                                                                                       |
| Minimum projected length <sup>a</sup> . . . . .          | 19/32"                                                                                     |
| Minimum projected width <sup>a</sup> . . . . .           | 1/4"                                                                                       |
| Direct Interelectrode Capacitances (Approx.):            |                                                                                            |
| Between base pins 4 and 8 ( $C_1$ ) . . . . .            | 1 $\mu$ f                                                                                  |
| Balancing capacitance ( $C_2$ ) <sup>b</sup> . . . . .   | 1 $\mu$ f                                                                                  |
| Capacitance Difference between $C_1$ and $C_2$ . . . . . | 0.3 max. $\mu$ f                                                                           |
| Maximum Overall Length. . . . .                          | 2-7/8"                                                                                     |
| Maximum Seated Length . . . . .                          | 2-5/16"                                                                                    |
| Seated Length to Center of Cathode. . . . .              | 1-5/8" $\pm$ 3/32"                                                                         |
| Maximum Diameter. . . . .                                | 1-9/32"                                                                                    |
| Operating Position. . . . .                              | Any                                                                                        |
| Weight (Approx.) . . . . .                               | 1 oz $\leftarrow$                                                                          |
| Bulb. . . . .                                            | T9                                                                                         |
| Socket. . . . .                                          | Cinch No.8JM-1, or equivalent $\leftarrow$                                                 |
| Base. . . . .                                            | Intermediate-Shell Octal 5-Pin, Arrangement 1<br>(JEDEC Group 1, No.B5-10) Non-hygroscopic |
| Basing Designation for BOTTOM VIEW. . . . .              | 2AB                                                                                        |

#### DIRECTION OF LIGHT



#### Maximum Ratings, Absolute-Maximum Values:

|                                                      |          |                |
|------------------------------------------------------|----------|----------------|
| ANODE-SUPPLY VOLTAGE (DC or Peak AC) . . .           | 250 max. | volts          |
| AVERAGE CATHODE-CURRENT DENSITY <sup>c</sup> . . . . | 30 max.  | $\mu$ a/sq.in. |
| AVERAGE CATHODE CURRENT <sup>c</sup> . . . . .       | 4 max.   | $\mu$ a        |
| AMBIENT TEMPERATURE . . . . .                        | 75 max.  | $^{\circ}$ C   |

#### Characteristics:

With an anode-supply voltage of 250 volts  
Min. Median Max.

|                                                 |      |       |      |               |
|-------------------------------------------------|------|-------|------|---------------|
| Sensitivity:                                    |      |       |      |               |
| Radiant, at 4400 angstroms. . . . .             | -    | 0.044 | -    | amp/watt      |
| Luminous <sup>d</sup> . . . . .                 | 19   | 45    | 70   | $\mu$ a/lumen |
| Ratio of Cathode Luminous                       |      |       |      |               |
| Sensitivities . . . . .                         | 0.42 | 1.0   | 2.4  |               |
| Anode Dark Current at 25 $^{\circ}$ C . . . . . | -    | -     | 0.01 | $\mu$ a       |

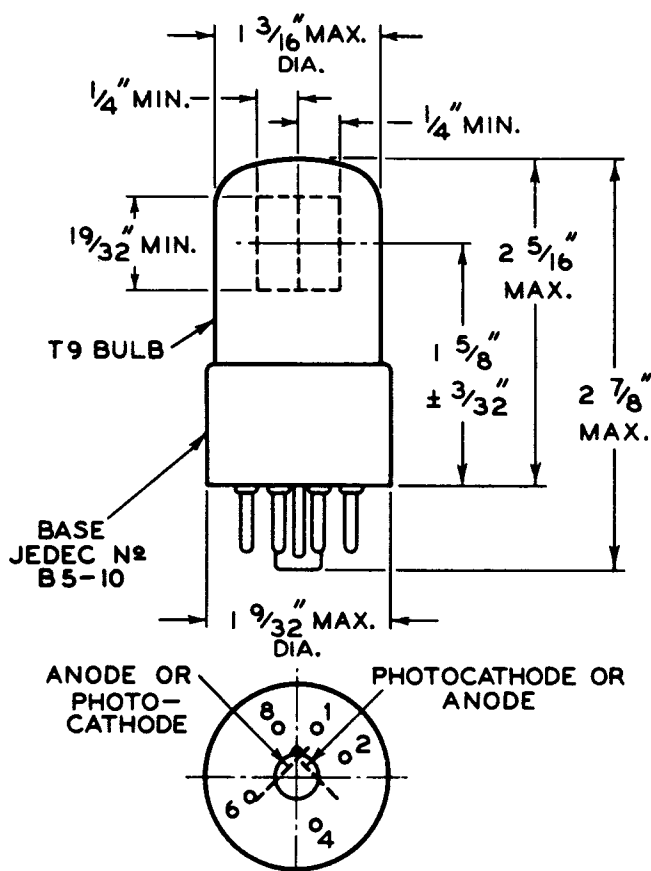
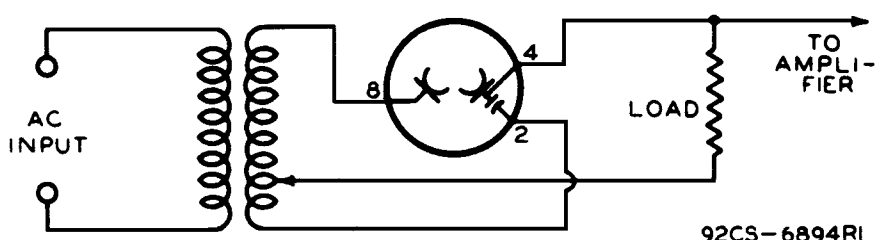
$\leftarrow$  Indicates a change.



- a On plane perpendicular to indicated direction of incident light.
- b Measured between pins 2 and 4.
- c Averaged over any interval of 30 seconds maximum.
- d For conditions where the light source is a tungsten-filament lamp operated at a color temperature of 2870° K. A 1-megohm load resistor and a light input of 0.02 lumen are used.

## SPECTRAL-SENSITIVITY CHARACTERISTIC OF PHOTOSENSITIVE DEVICE HAVING S-4 RESPONSE is shown at the front of this section

### TYPICAL CIRCUIT



# TYPICAL OPERATION CHARACTERISTICS

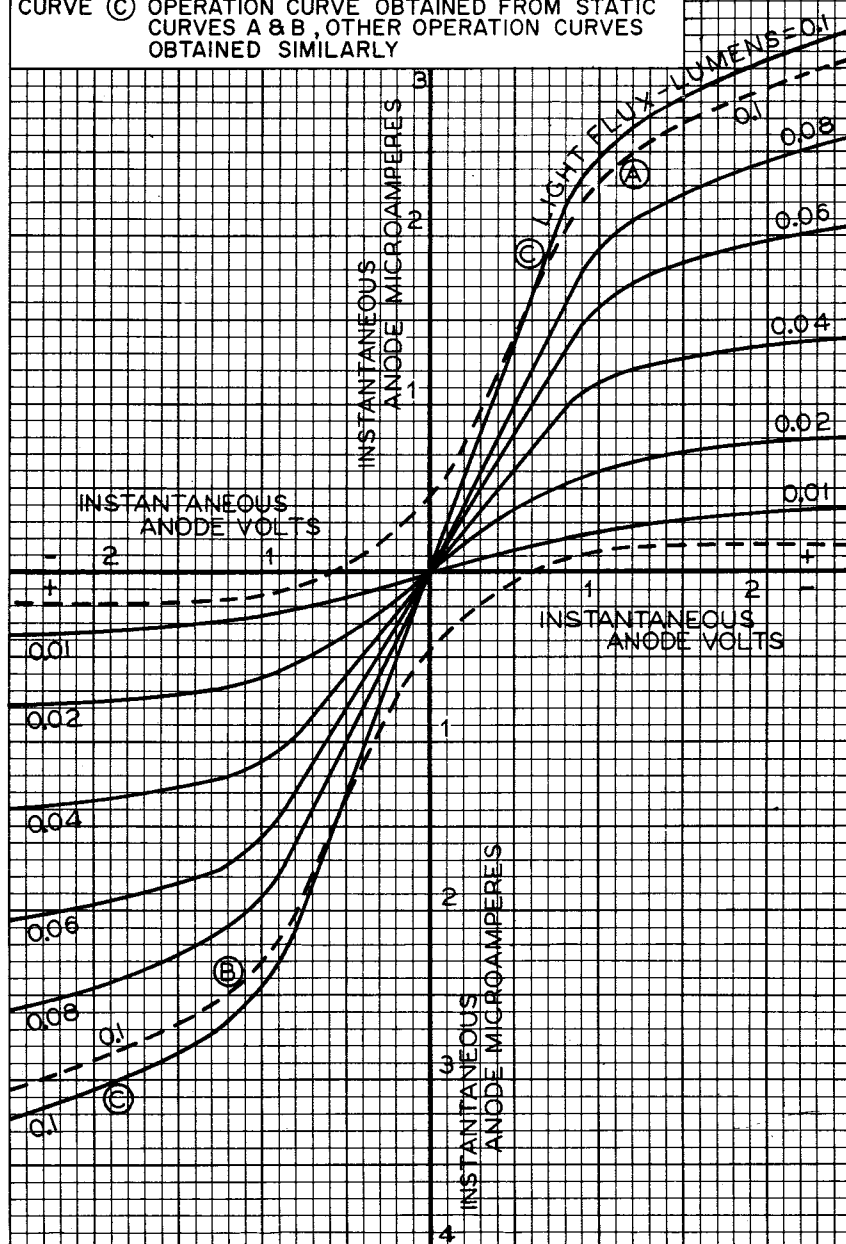
With AC Voltage Applied Between the Two Electrodes

LIGHT SOURCE IS A TUNGSTEN-FILAMENT LAMP  
OPERATED AT A COLOR TEMPERATURE OF 2870° K.  
LOAD RESISTANCE : ZERO

DASHED CURVE (A) STATIC CHARACTERISTIC FOR ONE  
ELECTRODE WITH 0.1 LUMEN

DASHED CURVE (B) STATIC CHARACTERISTIC FOR OTHER  
ELECTRODE WITH 0.1 LUMEN

CURVE (C) OPERATION CURVE OBTAINED FROM STATIC  
CURVES A & B, OTHER OPERATION CURVES  
OBTAINED SIMILARLY



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DATA 2  
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