

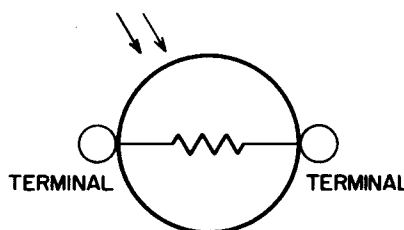
Photoconductive Cell

CADMIUM-SULFIDE, HEAD-ON TYPE

DATA

General:

Spectral Response.	S-15
Wavelength of Maximum Response	5800 $\pm$ 500 angstroms
Sensitive Surface, Including Metallic Strips:	
Shape.	Rectangular
Length (Minimum)	0.65 in.
Width (Minimum)	0.54 in.
Area (Minimum)	0.35 sq. in.
Maximum Overall Length	0.9"
Greatest Diameter.	1.24" $\pm$ 0.02"
Seated Length.	0.28" $\pm$ 0.06"
Maximum Axial Distance from External Surface of Window to Sensitive Surface.	0.15"
Case	Metal
Envelope Seals	Hermetic
Operating Position	Any
Weight (Approx.)	0.4 oz
Base	JEDEC No. E2-47



DIRECTION OF LIGHT:
INTO FACE OF CELL

↘ indicates that the primary characteristic of the element within the envelope symbol is designed to vary under the influence of light.

Maximum Ratings, Absolute-Maximum Values:

VOLTAGE BETWEEN TERMINALS		
(DC or Peak AC)	250 max.	volts
POWER DISSIPATION:		
Sensitive surface fully illuminated:		
Continuous service	0.3 max.	watt
Demand service ^a	0.5 max.	watt
Sensitive surface partially illuminated:		
Continuous service	0.85 max.	watt/sq. in.
Demand service ^a	1.42 max.	watt/sq. in.
PHOTOCURRENT	50 max.	ma
AMBIENT-TEMPERATURE RANGE.	-75 to +60	°C

↔ Indicates a change.



Characteristics:

Under conditions with ac voltage (rms) of 50 volts, 60 cps between terminals and ambient temperature of 25° C

Min. Median Max.

Sensitivity:

Radiant^b, at 5800 angstroms. — 290 — amp/watt

Luminous^c, at 0 cps. — 0.82 — amp/lumen

Illumination^{d, e}. 1 2 3 ma/fc

Decay Current^{d, f}. — — 40 μ a

Photocurrent:

Rise See accompanying *Curve*

Decay. See accompanying *Curve*

^a The demand rating may be utilized twice every 24 hours for a period of 20 minutes each time provided the interval between demand periods is not less than 4 hours.

^b For conditions where the incident power is 6.9 μ watt.

^c For conditions where light flux from a tungsten-filament lamp operated at 2870° K is transmitted through a filter (Corning No.C.S. 1-62, Glass No.5900 which has an effective transmission of luminous flux of 13.3 per cent) onto the sensitive surface. The value of illumination incident on the sensitive surface is 7.5 footcandles measured before positioning the filter between the lamp and the cell. Area of illuminated sensitive surface is approx. 0.35 sq. in.

^d This characteristic is determined after the 7163 has been exposed to 500 footcandle illumination (white fluorescent light) for a period of 16 to 24 hours.

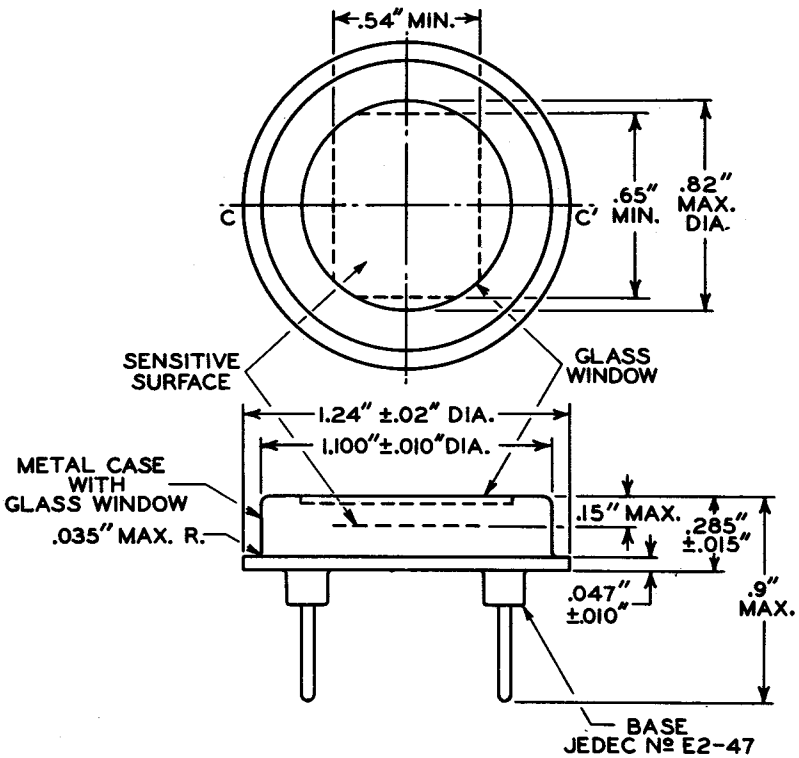
^e For conditions where light flux from a tungsten-filament lamp operated at 2870° K is transmitted through a filter (Corning No.C.S. 1-62, Glass No.5900 which has an effective transmission of luminous flux of 13.3 per cent) onto the sensitive surface. The value of illumination incident on the sensitive surface is 7.5 footcandles measured before positioning the filter between the lamp and the cell. The sensitive surface of the cell is fully illuminated.

^f Measured 10 seconds after removal of incident-illumination level as established in (e).

OPERATING CONSIDERATIONS

Electrical connection can be made to the base pins of the 7163 by soldering directly to the pins. Soldering of connections to the pins may be made close to the pin seals provided care is taken to conduct excessive heat away from the pin seal. Otherwise, the heat of the soldering operation will crack the glass seals of the pins and damage the cell. Connection can also be made to the base pins by use of insulated clips.

**SPECTRAL-SENSITIVITY CHARACTERISTIC
OF PHOTOSENSITIVE DEVICE HAVING S-15 RESPONSE
is shown at front of this section**

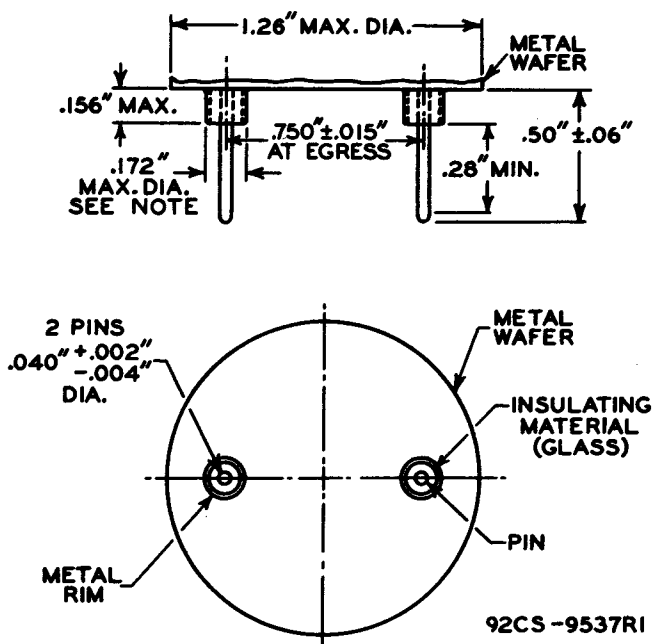


92CS-9536R3

PLANE THROUGH MINOR AXIS (CC') OF SENSITIVE SURFACE AND THE CELL AXIS MAY VARY FROM PLANE THROUGH CELL AXIS AND THE TWO PINS BY AN ANGULAR TOLERANCE (MEASURED ABOUT THE CELL AXIS) OF $\pm 10^\circ$.

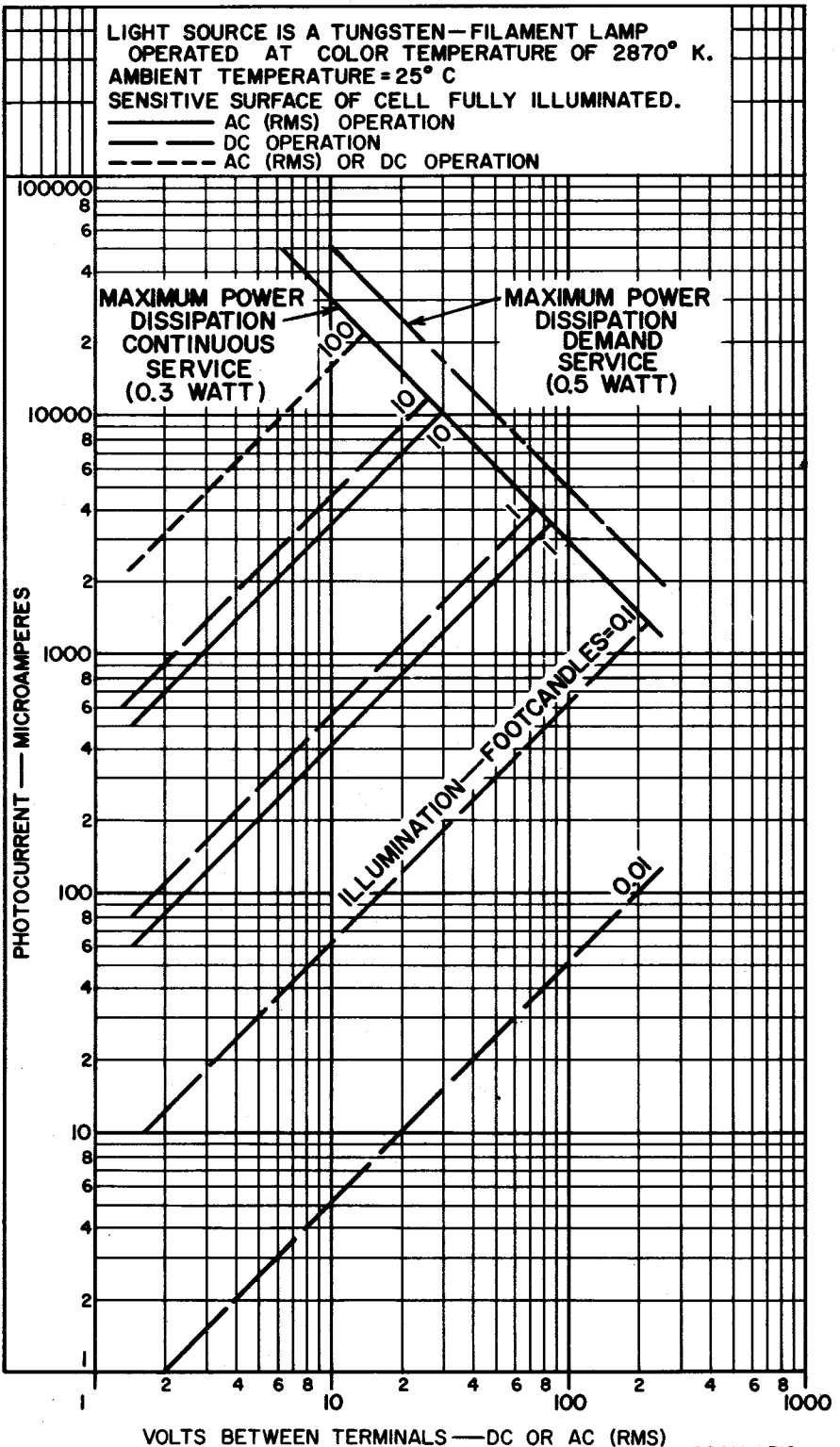


2-PIN BASE JEDEC No. E2-47



NOTE: FOR SOCKET DESIGN, PROVIDE CLEARANCE HOLE HAVING MINIMUM DIAMETER OF $0.188''$.

AVERAGE CHARACTERISTICS

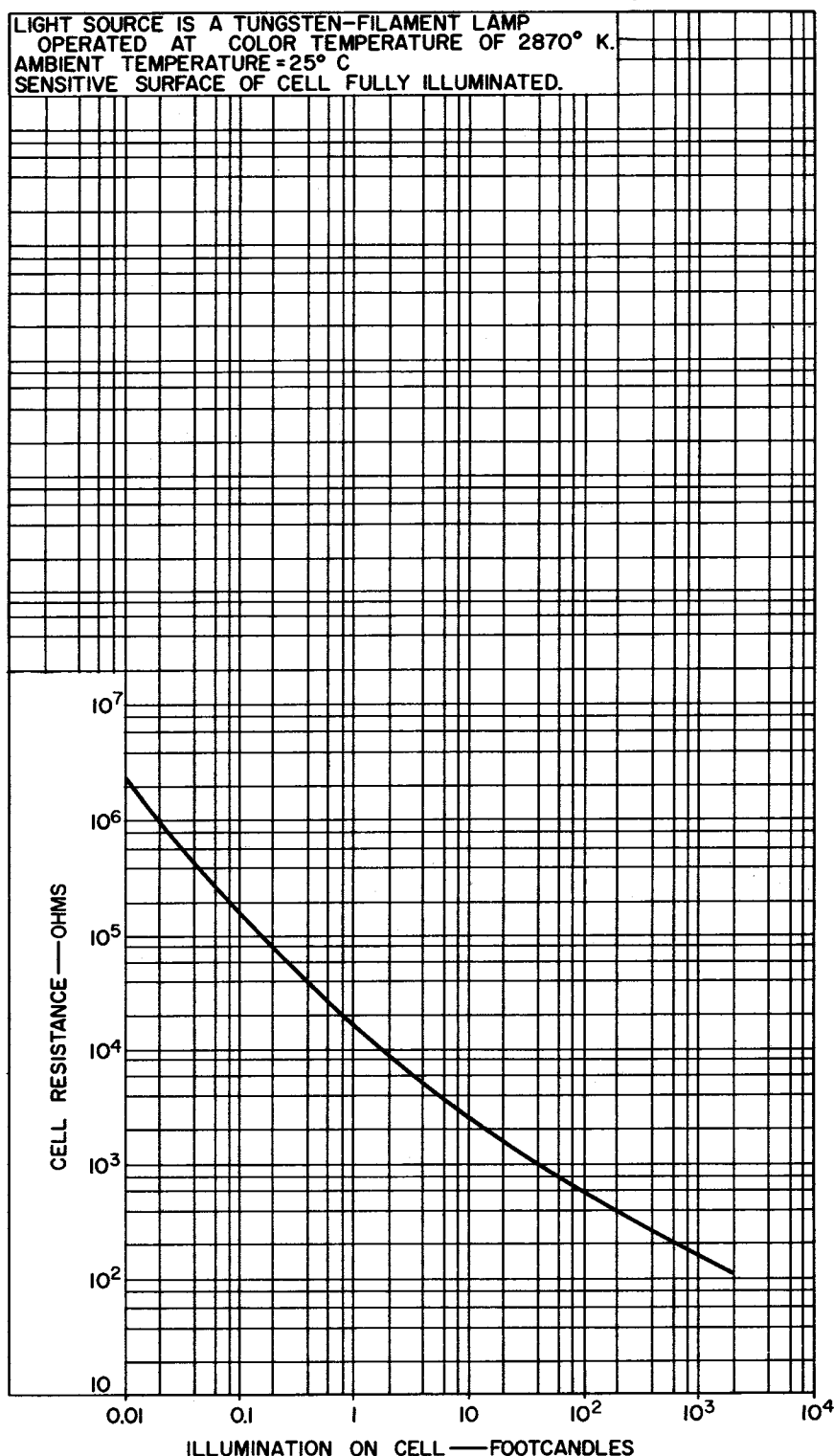


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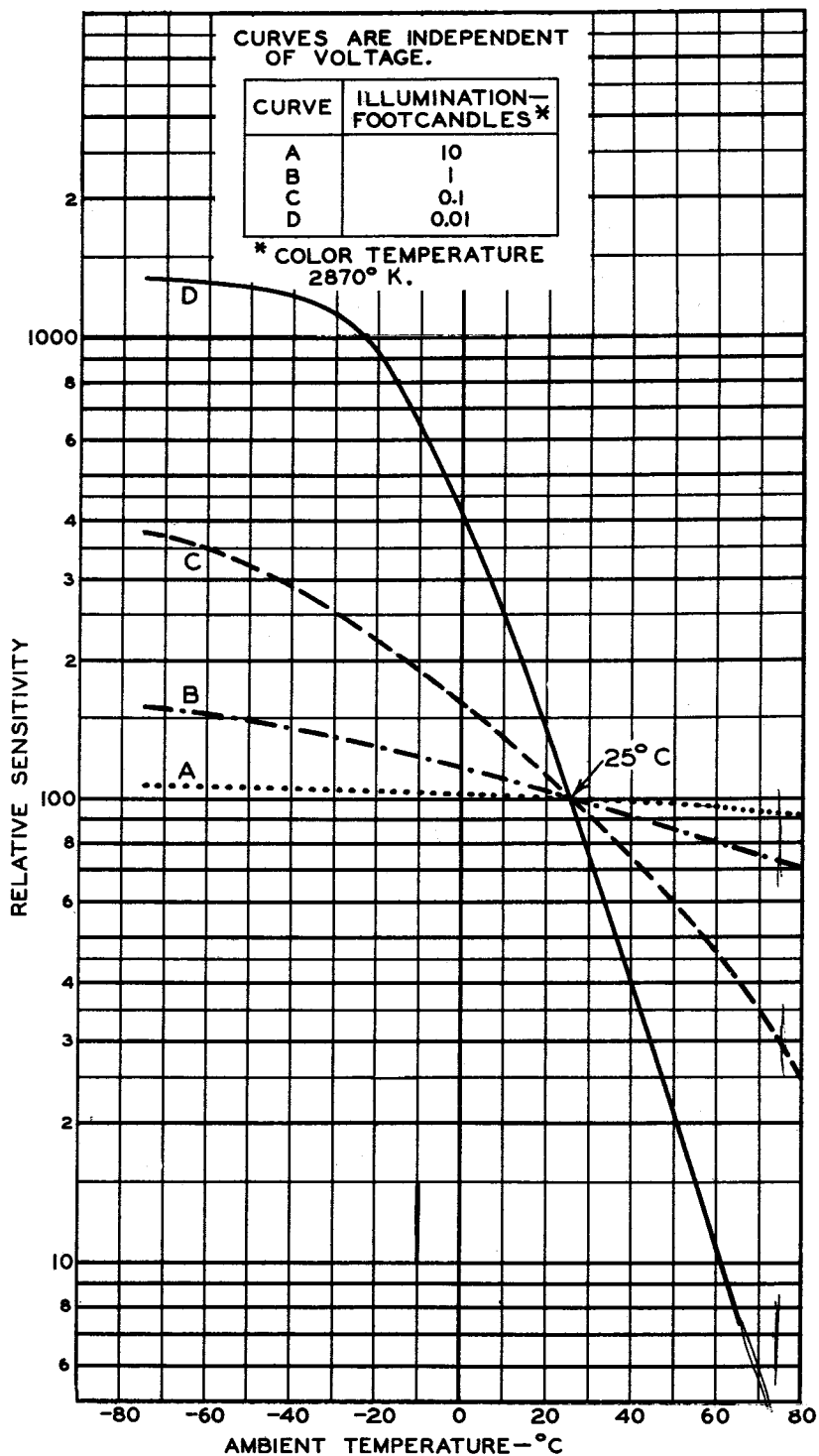
AVERAGE CELL RESISTANCE (DC)

LIGHT SOURCE IS A TUNGSTEN-FILAMENT LAMP
OPERATED AT COLOR TEMPERATURE OF 2870° K.
AMBIENT TEMPERATURE = 25° C.
SENSITIVE SURFACE OF CELL FULLY ILLUMINATED.



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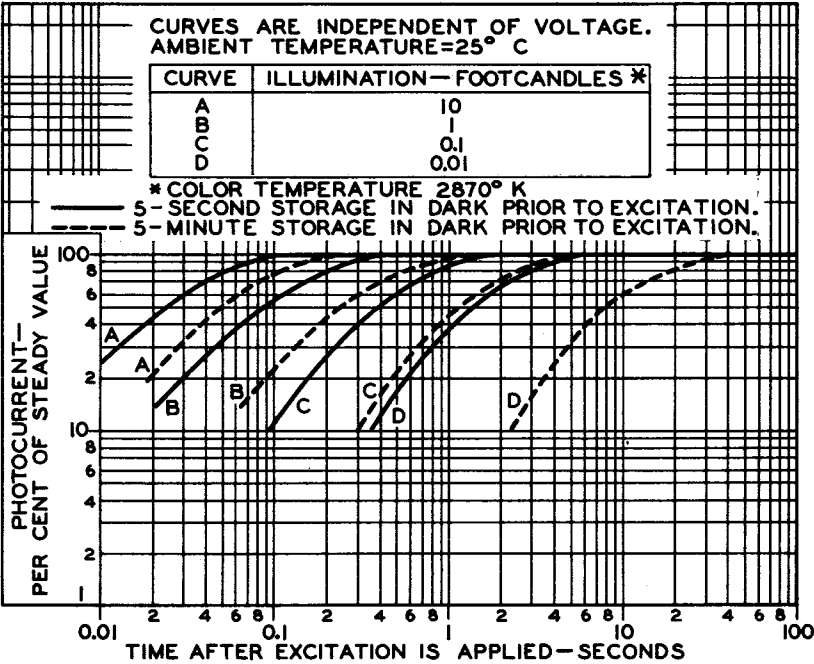
TYPICAL CHARACTERISTICS



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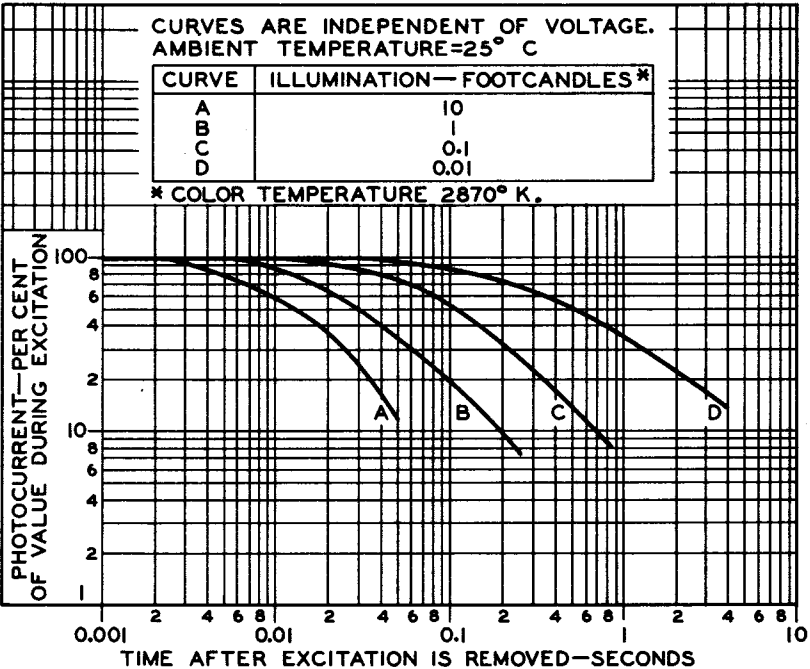


TYPICAL RISE CHARACTERISTICS



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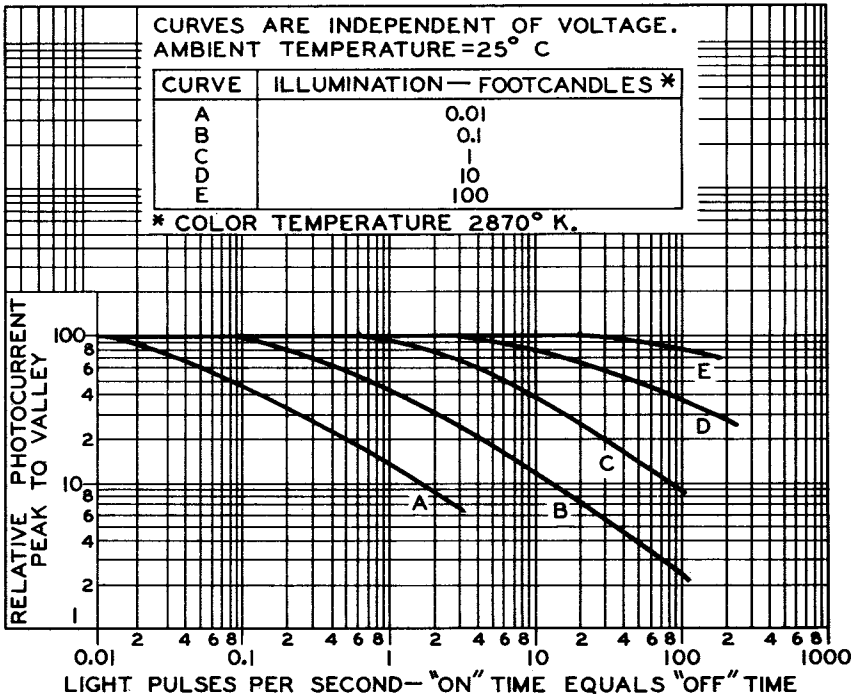
TYPICAL DECAY CHARACTERISTICS



92CS-9533



RESPONSE CHARACTERISTICS



92CS-9534

