7467

PHOTOJUNCTION CELL

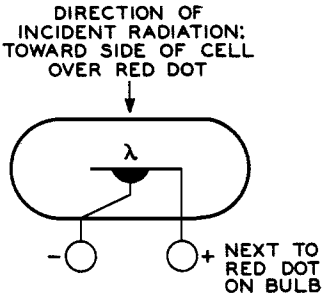
GERMANIUM P–N ALLOY JUNCTION, SIDE-ON TYPE
HAVING S-14 RESPONSE

For sound-pickup-from-film and computer applications

DATA

General:

Spectral Response	S-14
Wavelength of Maximum Response	15000 angstroms
Sensitive Area:	
Shape	Circular
Diameter (Minimum)	0.045"
Maximum Length (Excluding flexible leads)	0.875"
Distance From Flat End of Bulb to Center of Sensitive Area (Maximum)	0.175"
Maximum Diameter	0.35"
Envelope	Glass
Envelope Seals	Hermetic
Operating Position	Any
Weight (Approx.)	1 gram
Leads, Flexible	2
Minimum length	1.5"
Diameter and polarity	*See Dimensional Outline*



λ *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:*

POLARIZING VOLTAGE	50 max.	volts
POWER DISSIPATION	0.03 max.	watt
AMBIENT-TEMPERATURE RANGE (During operation)	-40 to +50	°C
STORAGE-TEMPERATURE RANGE	-65 to +75	°C

Characteristics:

With polarizing voltage of 45 volts and ambient temperature of 25° C

	Min.	*Median*	*Max.*	
Sensitivity:				
Radiant, at 15000 angstroms	–	0.52	–	μa/μw
Luminous#	–	14	–	ma/lumen

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	Min.	Median	Max.	
Illumination#†	0.5	0.7	–	μa/fc
Dark Current	–	–	35	μa
Photocurrent:				
Rise				*See Curve*
Decay				*See Curve*

For conditions where the light source is a tungsten-filament lamp operated at a color temperature of 2870° K.

† The value of illumination incident on the sensitive area is 73 foot-candles.

OPERATING CONSIDERATIONS

The *flexible leads* of the 7467 are usually soldered to the circuit elements. Soldering of the leads may be made close to the glass stem provided care is taken to conduct excessive heat away from the lead seals. Otherwise, the heat of the soldering operation will crack the glass seals of the leads and damage the cell.

A *clamp* around the glass envelope may be used to hold the cell in position. However, care must be taken in clamping to avoid cracking the glass envelope or introducing strains in the envelope which could lead to eventual breakage.

The cell must be *polarized* by connecting the positive voltage to the lead indexed by the red dot on the glass envelope.

The use of an optical system to *focus the incident radiation* onto the sensitive area of the cell is suggested, especially when the incident-radiation level is low. For high values of incident radiation, the entire side of the cell may be irradiated, but only that radiation intercepted by the sensitive area is effective in producing photocurrent.

Exposure of the 7467 to intense radiation, such as focused sunlight, should be avoided under all conditions including the condition when no voltage is applied to the cell. Permanent damage to the cell may result if it is exposed to radiant energy so intense as to cause excessive heating of the cell.

With no radiation on the sensitive area of the cell, some *dark current* will flow across the junction. This current can be reduced, as shown in the accompanying curve, by operation of the cell at reduced ambient temperature.

SPECTRAL-SENSITIVITY CHARACTERISTIC of Photojunction Cell having S-14 Response is shown at the front of this Section

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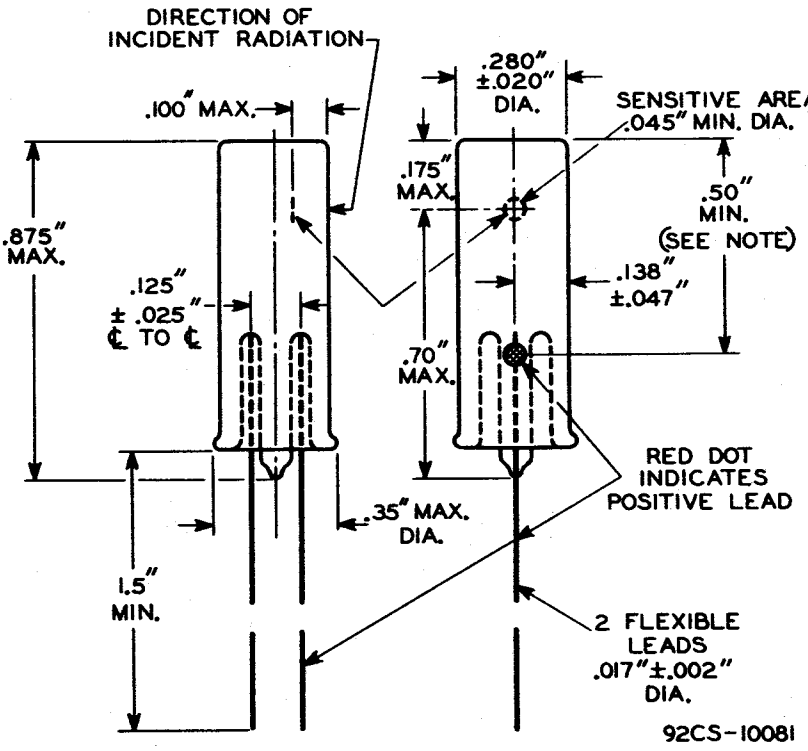

NOTE: BULB DIAMETER OF 0.280" ± 0.020" IS MAINTAINED FOR A DISTANCE OF AT LEAST 0.50" FROM FLAT END OF BULB.

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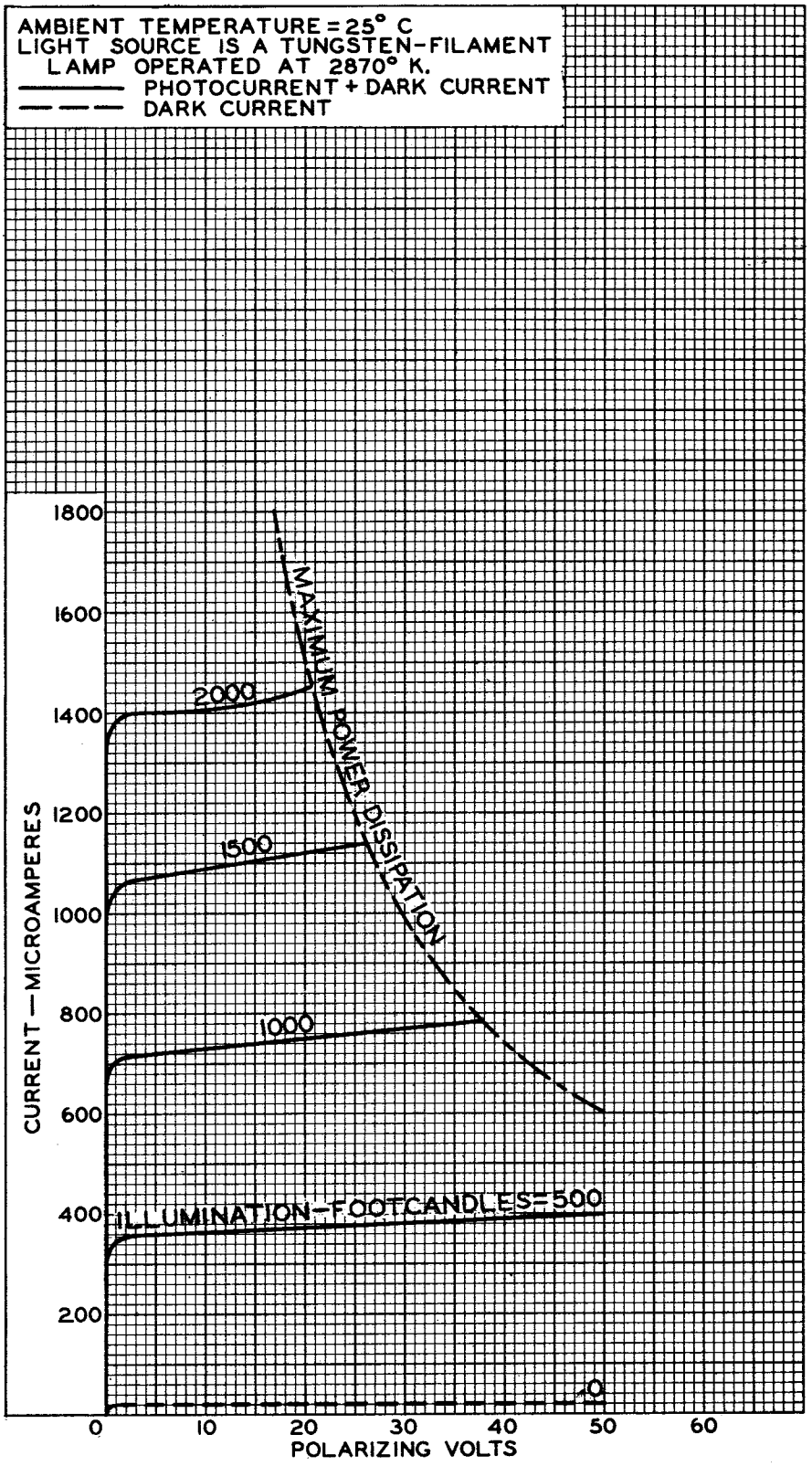
AVERAGE CHARACTERISTICS



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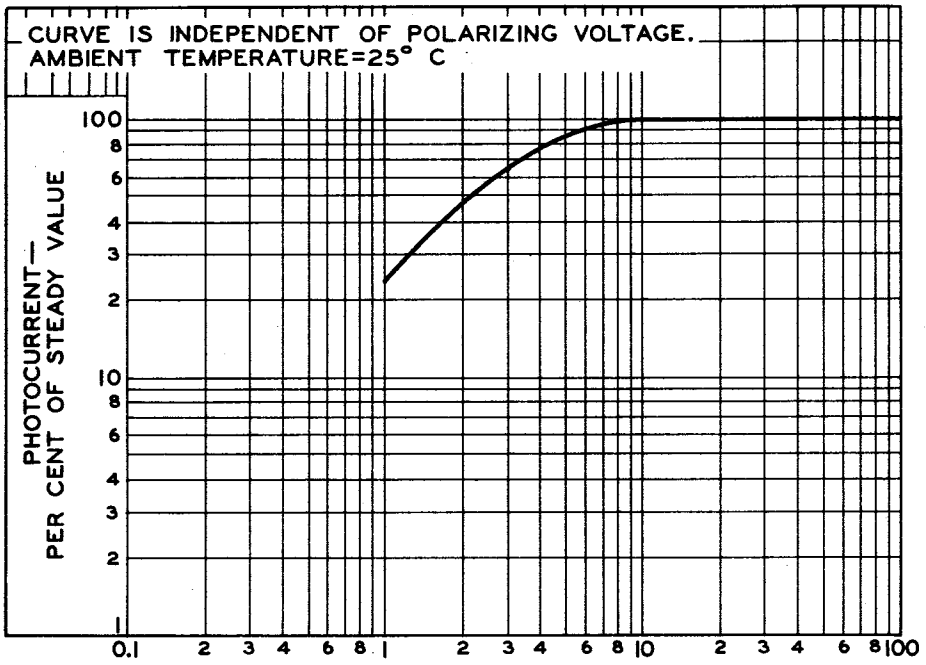
TYPICAL RISE CHARACTERISTIC



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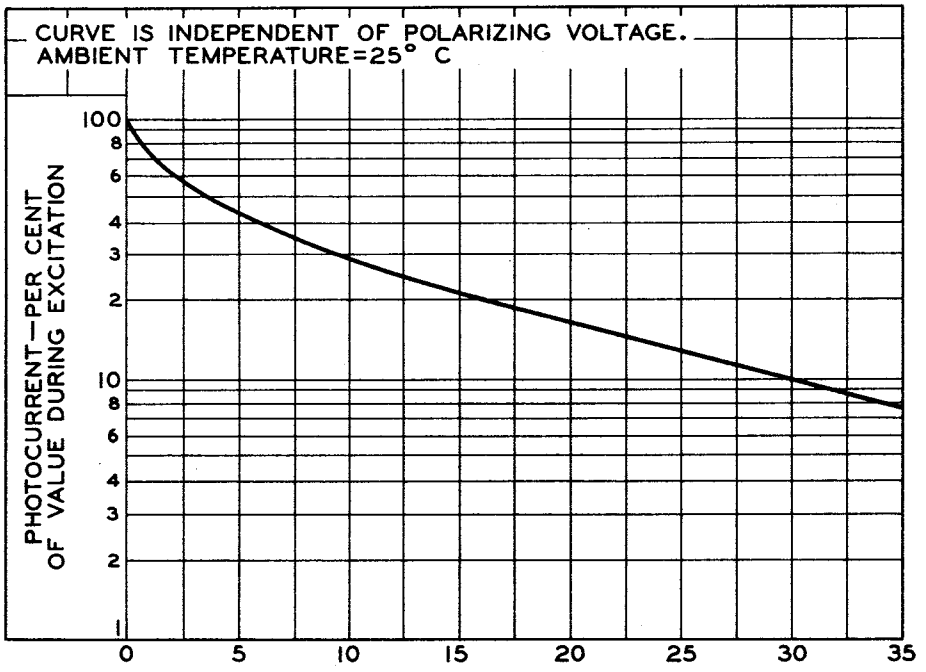
TYPICAL DECAY CHARACTERISTIC



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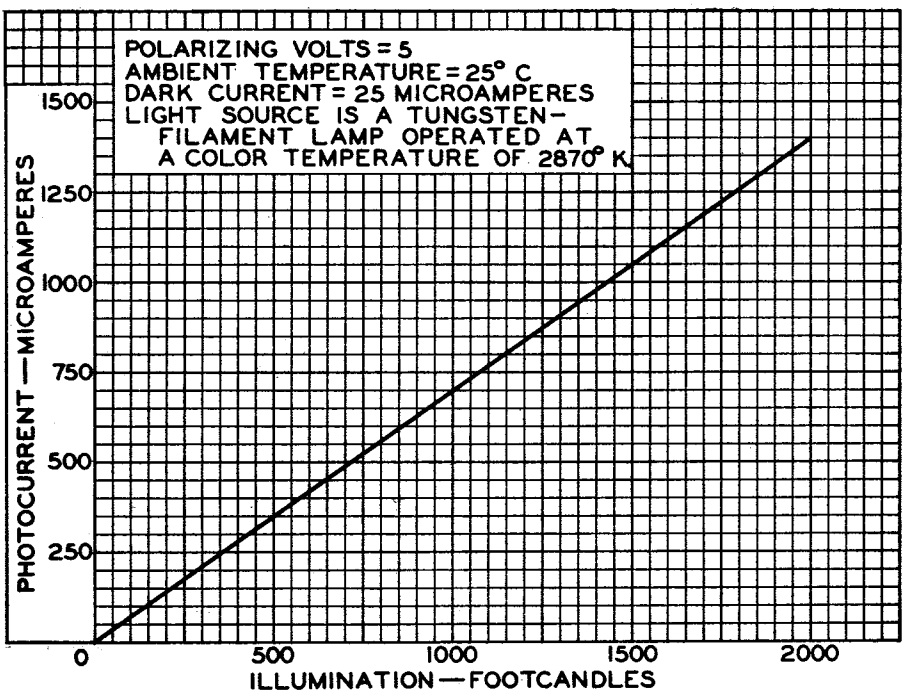
TYPICAL CHARACTERISTIC



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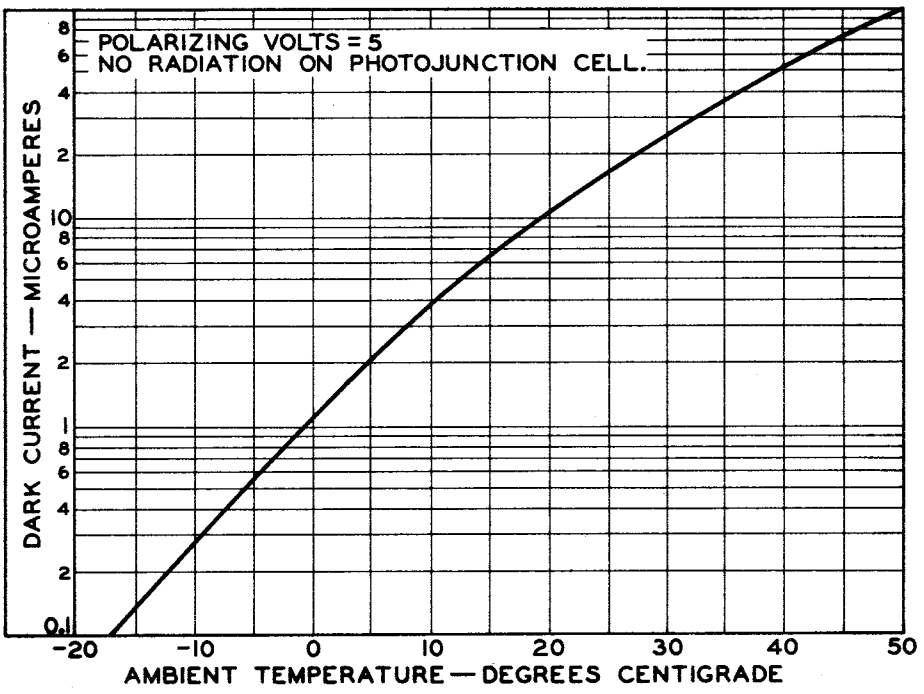
TYPICAL DARK-CURRENT CHARACTERISTIC



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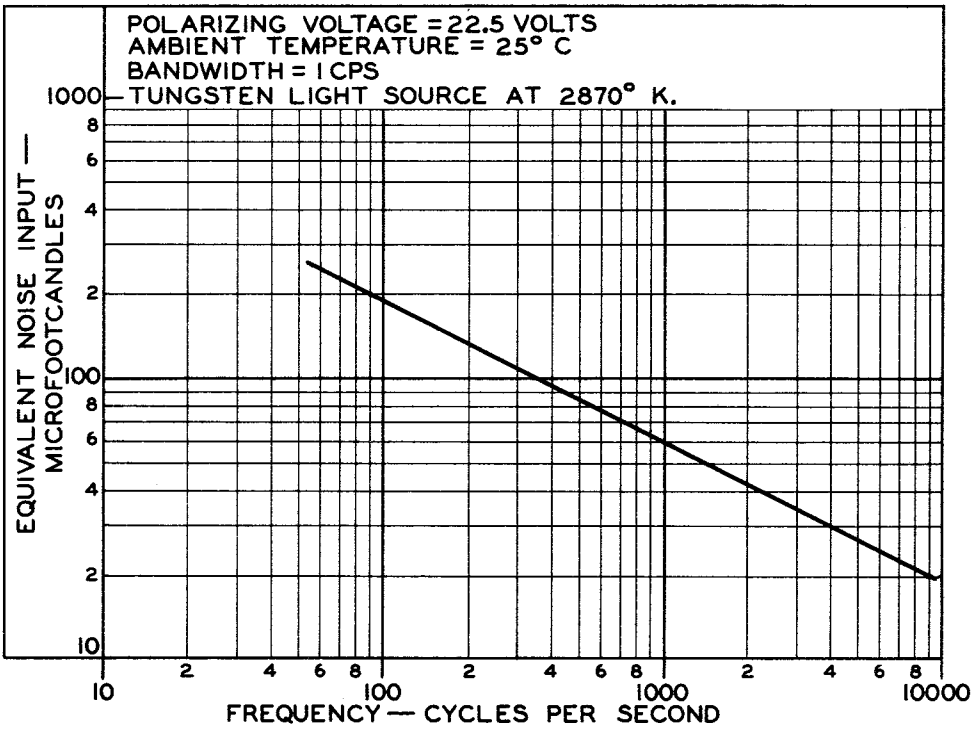
EQUIVALENT NOISE-INPUT CHARACTERISTIC



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