

FEATURES

- Wide photocathode
- High infrared sensitivity
- Excellent spatial uniformity
- Fast time response

APPLICATIONS

- Near infrared spectrophotometer
- Raman spectrophotometer
- Photo luminescence measurement

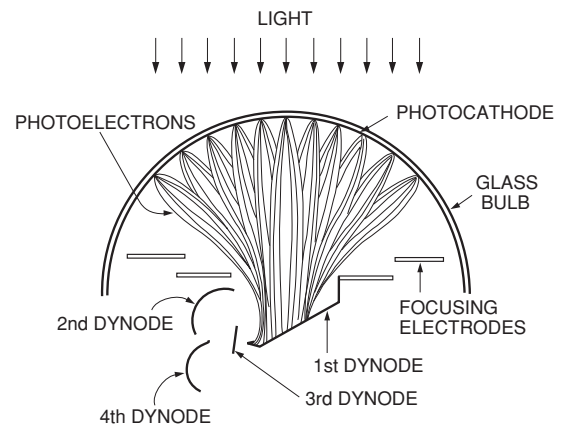


SPECIFICATIONS

GENERAL

| Parameter | Description / Value | Unit |
|------------------------------------|--------------------------------|---------------|
| Spectral response | 400 to 1200 | nm |
| Wavelength of maximum response | 800 | nm |
| Photocathode | Material | Ag-O-Cs |
| | Minimum effective area (H × W) | 16 × 18 |
| Window material | Borosilicate glass | — |
| Dynode | Structure | Circular-cage |
| | Number of stages | 9 |
| Direct interelectrode capacitances | Anode to last dynode | 4 |
| | Anode to all other electrodes | 6 |
| Base | 11-pin base | — |
| Weight | Approx. 40.5 | g |
| Operating ambient temperature | -30 to +50 | °C |
| Storage temperature | -30 to +50 | °C |
| Suitable socket | E678-11A (sold separately) | — |
| Applicable socket assembly | E717-63 (sold separately) | — |

Figure 1: Electron trajectories



TPMSC0003EB

PHOTOMULTIPLIER TUBE R5108

MAXIMUM RATINGS (Absolute maximum values)

| Parameter | | Value | Unit |
|--------------------------------------|-------------------------------|-------|------|
| Supply voltage | Between anode and cathode | 1500 | V |
| | Between anode and last dynode | 250 | V |
| Average anode current ^(A) | | 0.1 | mA |

CHARACTERISTICS (at 25 °C)

| Parameter | | Min. | Typ. | Max. | Unit |
|---|--------------------------------------|------|-----------------------|------|-------|
| Cathode sensitivity | Quantum efficiency at 1060 nm | — | 0.04 | — | % |
| | Luminous ^(B) | 10 | 25 | — | μA/lm |
| | Radiant at 800 nm | — | 2.2 | — | mA/W |
| Anode sensitivity | Luminous ^(C) | 3.5 | 7.5 | — | A/lm |
| Gain ^(C) | | — | 3.0 × 10 ⁵ | — | — |
| Anode dark current ^(D) (after 30 min storage in the darkness) | | — | 350 | 1000 | nA |
| Time response ^(C) | Anode pulse rise time ^(E) | — | 1.1 | — | ns |
| | Electron transit time ^(F) | — | 17 | — | ns |

NOTES

- (A) Averaged over any interval of 30 maximum.
- (B) The light source is a tungsten filament lamp operated at a distribution temperature of 2856 K.
Supply voltage is 100 V between the cathode and all other electrodes connected together as anode.
- (C) Measured with the voltage distribution ratio shown in Table 1 below.

- (D) Measured at the voltage which gives anode luminous sensitivity of 4 A/lm.
- (E) The rise time is the time for the output pulse to rise from 10 % to 90 % of the peak amplitude when the entire photocathode is illuminated by a delta function light pulse.
- (F) The electron transit time is the interval between the arrival of delta function light pulse at the entrance window of the tube and the time when the anode output reaches the peak amplitude. In measurement, the whole photocathode is illuminated.

Table 1: Voltage distribution ratio

| Electrode | K | Dy1 | Dy2 | Dy3 | Dy4 | Dy5 | Dy6 | Dy7 | Dy8 | Dy9 | P |
|--------------------|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|
| Distribution ratio | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

Supply voltage : 1250 V, K : Cathode, Dy : Dynode, P : Anode

Figure 2: Typical spatial uniformity

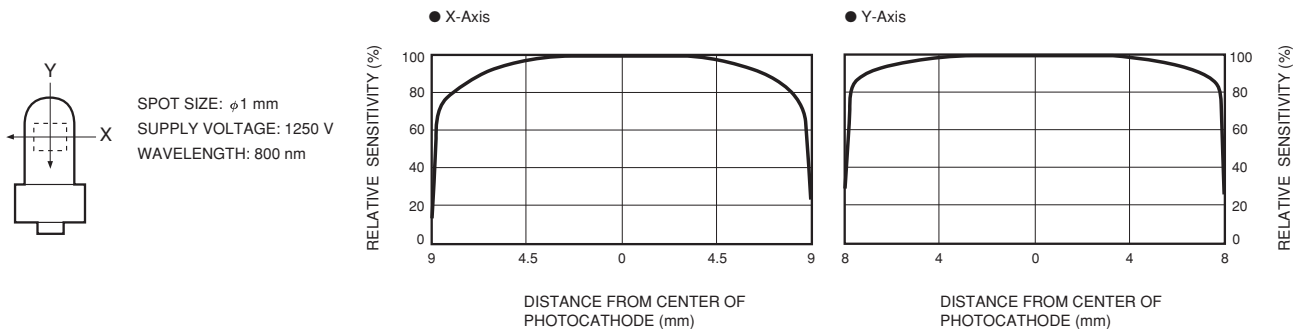


Figure 3: Typical spectral response

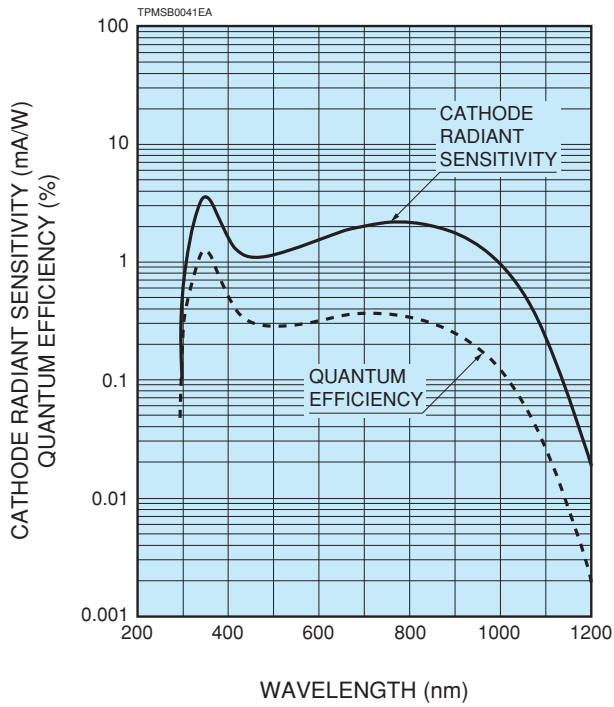


Figure 4: Typical time response

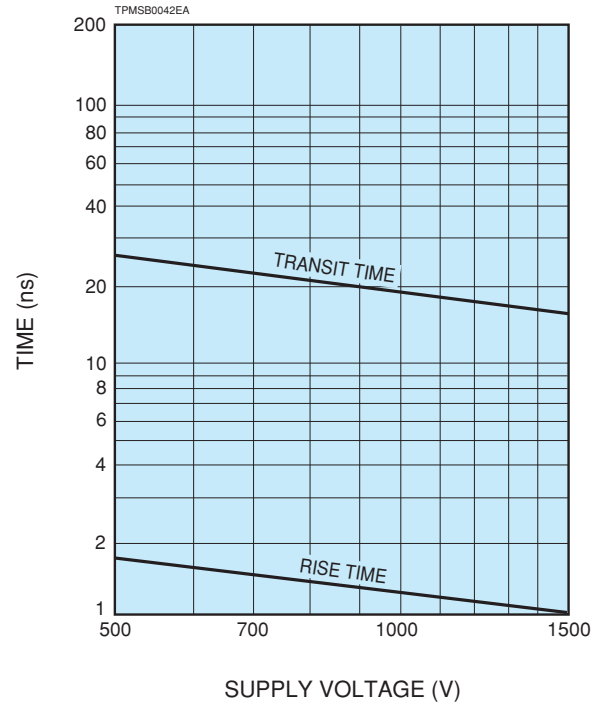


Figure 5: Typical gain and anode dark current

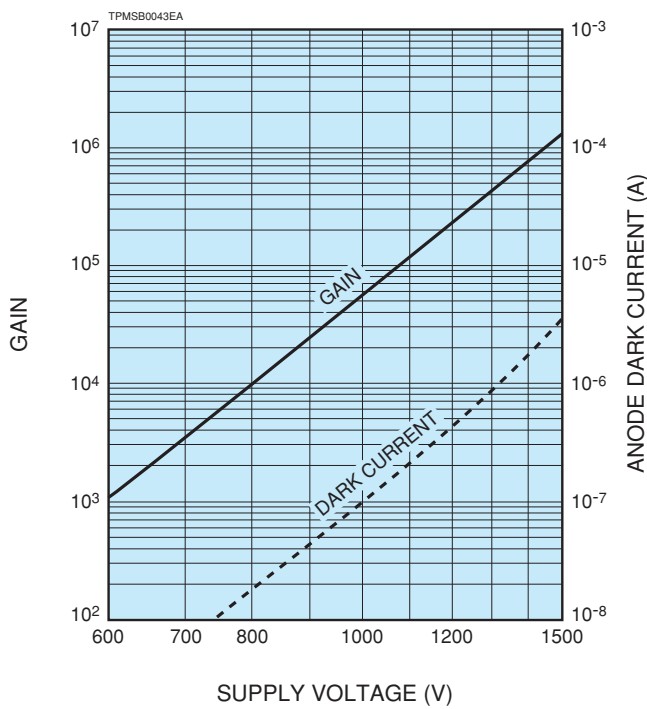
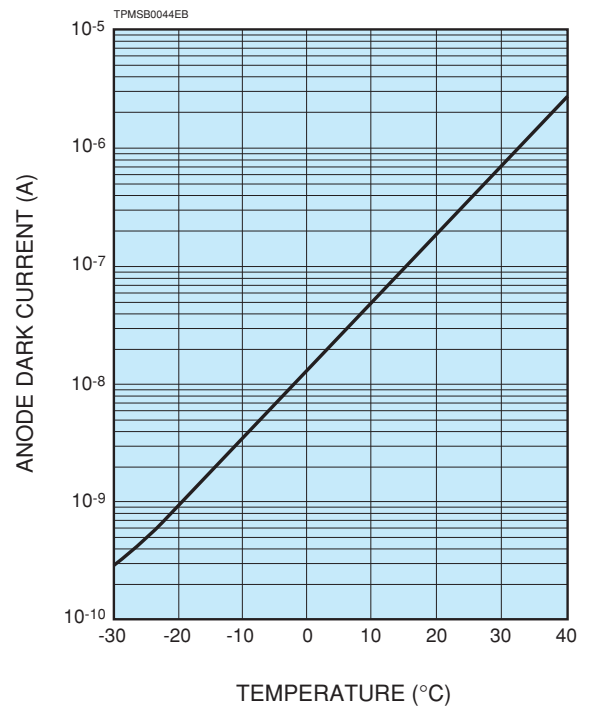
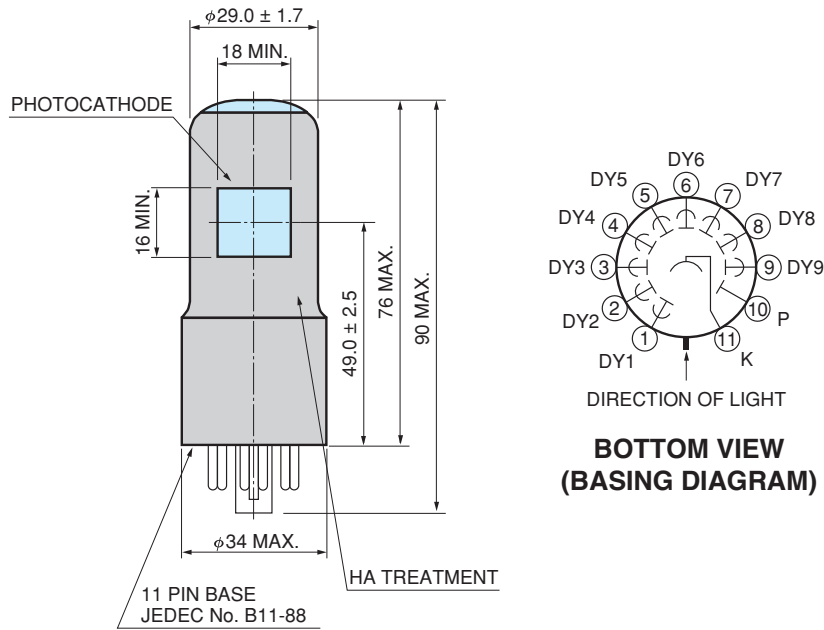


Figure 6: Typical temperature characteristics of anode dark current (at 4 A/lm)



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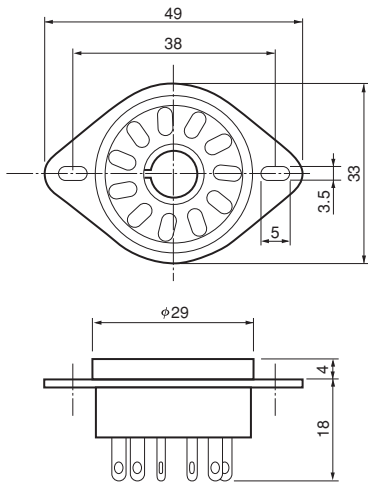
Figure 7: Dimensional outline and basing diagram (Unit: mm)



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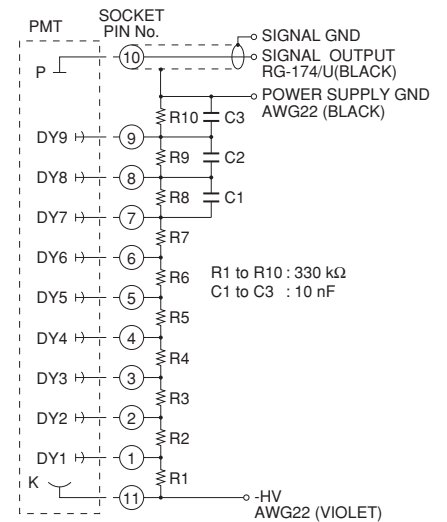
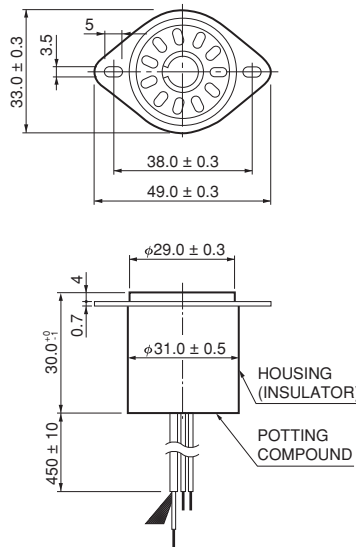
Figure 8: Accessories (Unit: mm)

Socket E678-11A (Sold separately)



TACCA0064EA

D type socket assembly E717-63 (Sold separately)



TACCA0002EH

* Hamamatsu also provides C13890, C11152 series compact high voltage power supplies and C12597-01, C8991-01 DP type socket assemblies which incorporate a DC to DC converter type high voltage power supply.

Warning—Personal Safety Hazards

Electrical Shock—Operating voltages applied to this device present a shock hazard.

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