

Extremely Improved Solar Blind Photocathode for Aerospace and General Photometric Applications, 25 mm (1 Inch) Diameter, Ruggedized Low Profile Tube, Cs-Te Photocathode, 10-Stage, Head-on

FEATURES

- High Quantum Efficiency 14 % at 254 nm Typ.
- Ruggedized, Low Profile Structure 300 m/s² vibration
43 mm in bulb length



SPECIFICATIONS

GENERAL

| Parameter | | Description / Value | Unit |
|--------------------------------|------------------------|------------------------------|------|
| Spectral Response | | 160 to 320 | nm |
| Wavelength of Maximum Response | | 240 | nm |
| Photocathode | Material | Cs-Te | — |
| | Minimum Effective Area | φ21 | mm |
| Window Material | | Quartz | — |
| Dynode | Structure | Circular cage | — |
| | Number of Stages | 10 | — |
| Base (temporary) | | 12-pin base JEDEC No. B12-13 | — |
| Operating Ambient Temperature | | -40 to +80 | — |
| Storage Temperature | | -40 to +80 | °C |
| Suitable Socket | | E678-12A (supplied) | °C |

MAXIMUM RATINGS (Absolute Maximum Values)

| Parameter | | Value | Unit |
|-----------------------|-------------------------------|-------|------|
| Supply Voltage | Between Anode and Cathode | 2000 | V |
| | Between Anode and Last Dynode | 300 | V |
| Average Anode Current | | 0.015 | mA |

CHARACTERISTICS (at 25°C)

| Parameter | | Min. | Typ. | Max. | Unit |
|---|--|-------------------|----------------------|----------------------|-----------------|
| Cathode Sensitivity | Radiant at 254 nm | 20 | 29 | — | mA/W |
| | Radiant at 365 nm | — | 3.4×10^{-3} | 1.2×10^{-2} | mA/W |
| | Radiant at 550 nm | — | 3.8×10^{-5} | — | mA/W |
| | Quantum Efficiency at 254 nm | 9.8 | 14.2 | — | % |
| Anode Sensitivity | Radiant at 254 nm | 2.0×10^3 | 1.5×10^4 | — | A/W |
| Gain | | 1.0×10^5 | 5.0×10^5 | — | — |
| Anode Dark Current (after 30 min storage in darkness) | | — | 15 | 100 | pA |
| Dark Counts | PHD at 1×10^6 Gain [Ⓐ] | — | 10 | 20 | s ⁻¹ |
| | Plateau at V ₀ [Ⓑ] | — | 20 | — | s ⁻¹ |
| Anode Pulse Rise Time [Ⓒ] | | — | 1.5 | — | ns |

NOTE: Ⓐ The discrimination level is set at one fourth the average electron pulse height to measure the background.

Ⓑ Plateau voltage (V₀) at the test up in HPK.

Ⓒ The rise time is the time of the output pulse to rise from 10 % to 90 % of peak amplitude when the entire photocathode is illuminated by a delta function light pulse.

VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE

| Electrodes | K | Dy1 | Dy2 | Dy3 | Dy4 | Dy5 | Dy6 | Dy7 | Dy8 | Dy9 | Dy10 | P |
|------------|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|---|
| Ratio | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

Supply Voltage: 1500 V, K: Cathode, Dy: Dynode, P: Anode

PHOTOMULTIPLIER TUBE R2078

Figure 1: Typical Spectral Response

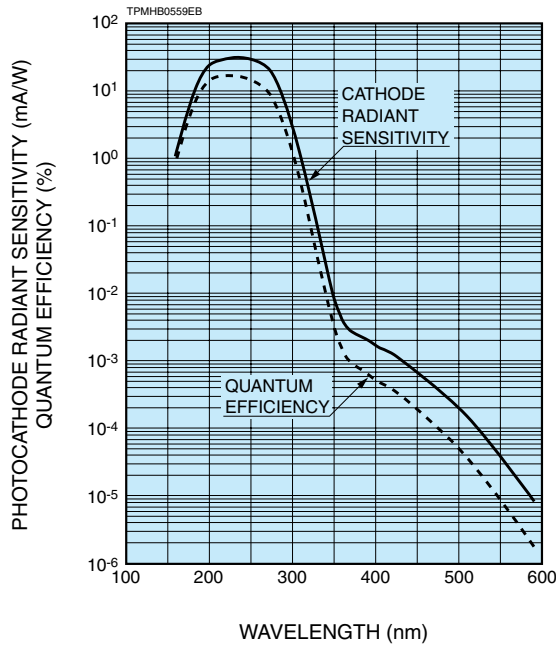


Figure 2: Typical Gain Characteristics

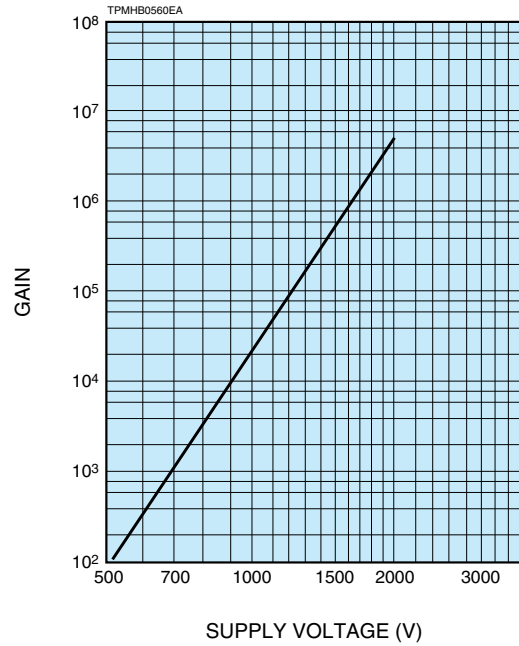
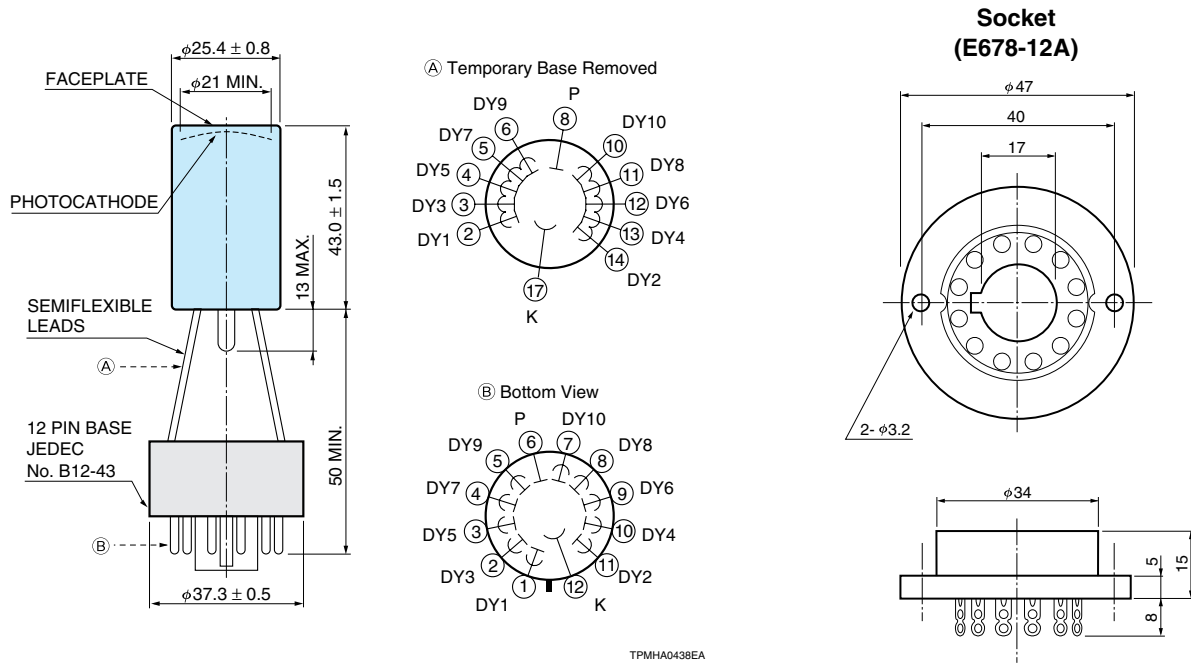


Figure 3: Dimensional Outline and Basing Diagram (Unit: mm)



* HAMAMATSU also provides high voltage power supply modules C9619 series.

HAMAMATSU PHOTONICS K.K. www.hamamatsu.com

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