HAMAMATSU

# PHOTOMULTIPLIER TUBE
# R3550A

## For Photon Counting, Low Light Level Detection, Ruggedized, Low Profile, 25 mm (1 Inch) Diameter, Low Noise Bialkali Photocathode, 70 °C Operation, 10-stage, Head-on Type

## GENERAL

| Parameter | | Description | Unit |
|---|---|---|---|
| Spectral Response | | 300 to 650 | nm |
| Peak Wavelength | | 375 | nm |
| Photocathode | Material | Low Noise Bialkali | — |
| | Minimum Effective Area | 22 | mm dia. |
| Window Material | | Borosilicate glass | — |
| Dynode | Structure | Linear focused | — |
| | Number of Stages | 10 | — |
| Base | | 14 pin glass base | — |
| Suitable Socket | | E678-14C (supplied) | — |
| Operating Ambient Temperature | | -30 to +70 | °C |
| Storage Temperature | | -80 to +70 | °C |

## MAXIMUM RATINGS (Absolute Maximum Values)

| Parameter | | Value | Unit |
|---|---|---|---|
| Supply Voltage | Between Anode and Cathode | 1250 | V |
| | Between Anode and Last Dynode | 250 | V |
| Average Anode Current | | 0.1 | mA |

## CHARACTERISTICS (at 25 °C) with Standard Voltage Divider

| Parameter | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|
| Cathode Sensitivity | Luminous (2856 K) | 30 | 50 | — | μA/lm |
| | Quantum Efficiency at 375 nm | — | 18 | — | % |
| | Blue Sensitivity Index (CS 5-58) | 5 | 7 | — | — |
| Anode Sensitivity | Luminous (2856 K) | 45 | 100 | — | A/lm |
| Gain | | $1.5 \times 10^6$ | $2.0 \times 10^6$ | — | — |
| Anode Dark Current (after 30 min storage in darkness) | | — | 0.5 | 4 | nA |
| Anode Dark Count | | — | 20 | 60 | $s^{-1}$ |
| Time Response | Anode Pulse Rise Time | — | 1.5 | — | ns |
| | Electron Transit Time | — | 17 | — | ns |

**NOTE:** Anode characteristics are measured with a voltage distribution ratio shown below

## STANDARD VOLTAGE DIVIDER AND SUPPLY VOLTAGE

| Electrodes | K | Dy1 | Dy2 | Dy3 | Dy4 | Dy5 | Dy6 | Dy7 | Dy8 | Dy9 | Dy10 | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ratio | 3 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

Supply Voltage: 1000 V, K: Cathode, Dy: Dynode, P: Anode

## ENVIRONMENTAL TESTING

Shock.....1000 m/s², 11 ms, 3 impact shocks per direction (6 directions)
Vibration.....200 m/s², 50 Hz to 2000 Hz, 1 oct per minute, 3 sweeps per axis (3 axes)

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Figure 1: Typical Spectral Response

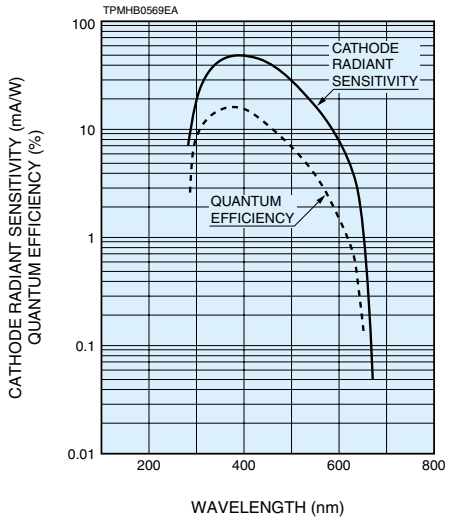



Figure 2: Typical Gain and Dark Current Characteristics

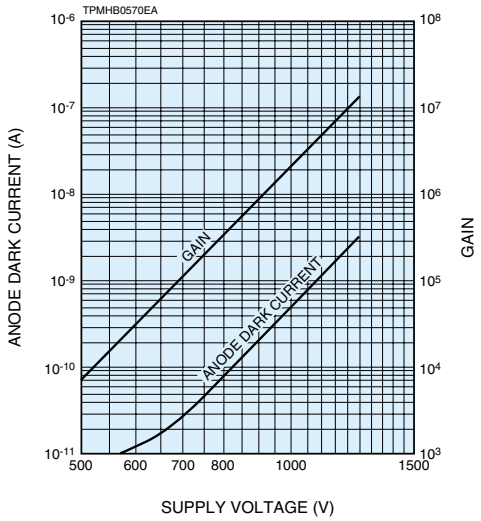



Figure 3: Typical Characteristics of Dark Count

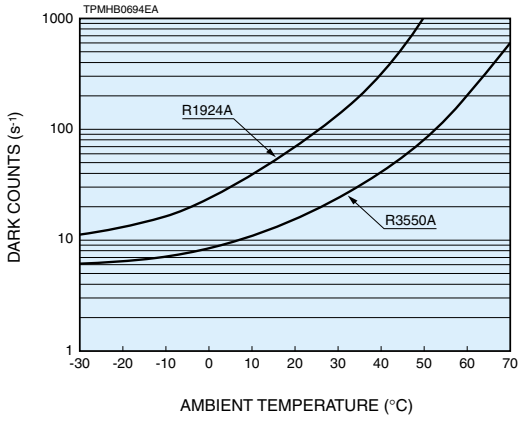
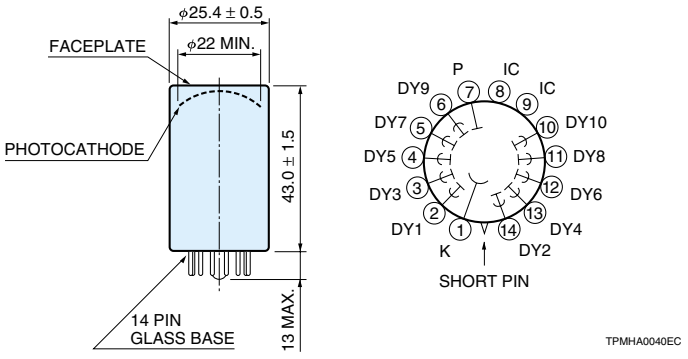
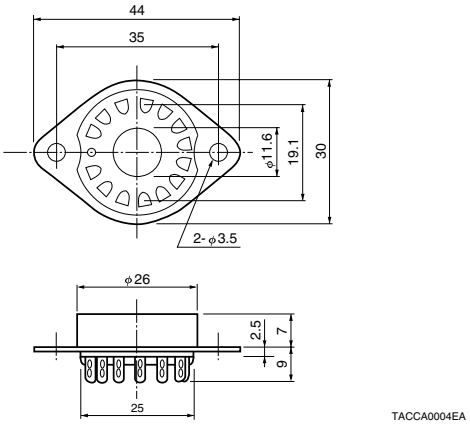



Figure 4: Dimensional Outline and Basing Diagram (Unit: mm)




**Socket E678-14C**
**(Supplied)**





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