

**High-speed Photon Counting and Fluorescence Measurement**  
**51 mm (2 Inch) Diameter, 12-stage, Head-on Type**  
**R3234-01: Borosilicate Window (300 nm to 650 nm)**  
**R3235-01: Synthetic Silica Window (160 nm to 650 nm)**

**GENERAL**

|                                | Parameter              | Description / Value             | Unit |
|--------------------------------|------------------------|---------------------------------|------|
| Spectral Response              | R3234-01               | 300 to 650                      | nm   |
|                                | R3235-01               | 160 to 650                      | nm   |
| Wavelength of Maximum Response |                        | 420                             | nm   |
| Photocathode                   | Material               | bialkali                        | —    |
|                                | Minimum Effective Area | φ 10                            | mm   |
| Window Material                | R3234-01               | Borosilicate glass              | —    |
|                                | R3235-01               | Synthetic silica glass          | —    |
| Dynode                         | Structure              | Linear focused                  | —    |
|                                | Number of Stages       | 12                              | —    |
| Operating Ambient Temperature  |                        | -30 to +50                      | °C   |
| Storage Temperature            |                        | -30 to +50                      | °C   |
| Base                           |                        | 20-pin base (JEDEC No. B20-102) | —    |
| Suitable Socket                |                        | E678-20B (supplied)             | —    |

**MAXIMUM RATINGS (Absolute Maximum Values)**

|                       | Parameter                     | Value | Unit |
|-----------------------|-------------------------------|-------|------|
| Supply Voltage        | Between Anode and Cathode     | 2500  | V    |
|                       | Between Anode and Last Dynode | 500   | V    |
| Average Anode Current |                               | 0.1   | mA   |

**CHARACTERISTICS (at 25 °C)**

|                                                        | Parameter                        | Min. | Typ.                  | Max. | Unit            |
|--------------------------------------------------------|----------------------------------|------|-----------------------|------|-----------------|
| Cathode Sensitivity                                    | Luminous (2856 K)                | 50   | 80                    | —    | μA/lm           |
|                                                        | Radiant at 420 nm                | —    | 72                    | —    | mA/W            |
|                                                        | Blue Sensitivity Index (CS 5-58) | —    | 9.0                   | —    | —               |
| Anode Sensitivity                                      | Luminous (2856 K)                | 500  | 2000                  | —    | A/lm            |
|                                                        | Radiant at 420 nm                | —    | 2.0 × 10 <sup>6</sup> | —    | A/W             |
| Gain                                                   |                                  | —    | 2.5 × 10 <sup>7</sup> | —    | —               |
| Anode Dark Current (after 30 min. storage in darkness) |                                  | —    | 1                     | 10   | nA              |
| Anode Dark Counts                                      |                                  | —    | 50                    | 150  | s <sup>-1</sup> |
| Time Response                                          | Anode Pulse Rise Time            | —    | 1.3                   | —    | ns              |
|                                                        | Electron Transit Time            | —    | 28                    | —    | ns              |
|                                                        | Transit Time Spread (FWHM)       | —    | 0.45                  | —    | ns              |

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

**VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE**

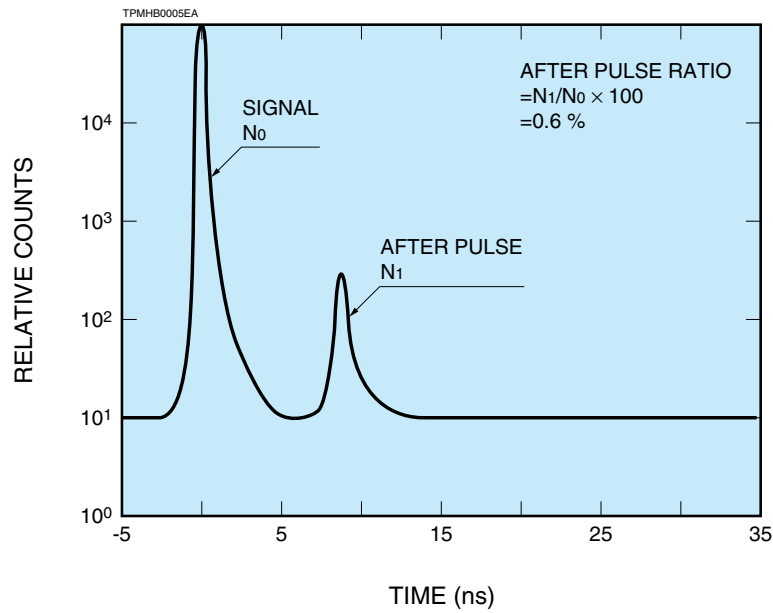
| Electrodes | K | Dy1 | Dy2 | Dy3 | Dy4 | Dy5 | Dy6 | Dy7 | Dy8 | Dy9 | Dy10 | Dy11 | Dy12 | P |
|------------|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|---|
| Ratio      | 4 | 1.2 | 1.8 | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1    | 1    | 1    | 1 |

Supply Voltage: 2000 Vdc, K: Cathode, Dy: Dynode, P: Anode

# PHOTOMULTIPLIER TUBES R3234-01, R3235-01

Figure 1: Typical Pulse Generation Characteristics

A) For R3234-01, R323-01



B) For Conventional Type

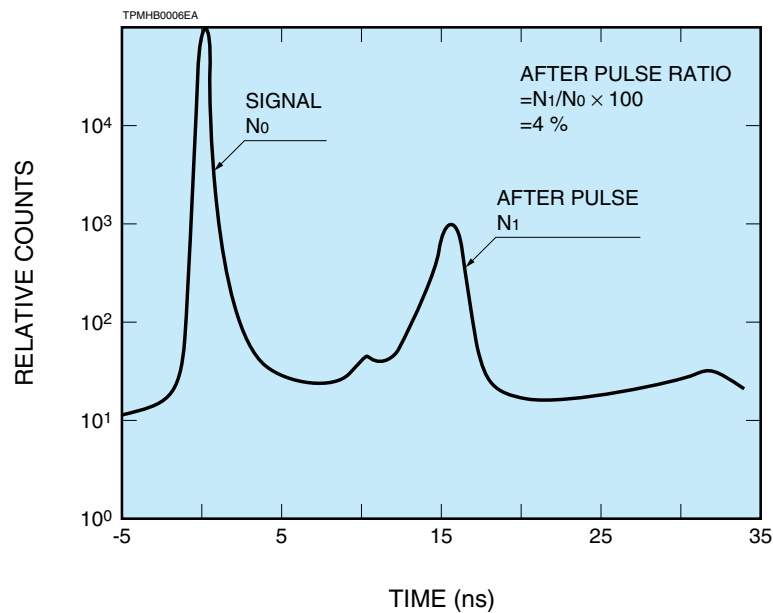


Figure 2: Typical Spectral Response

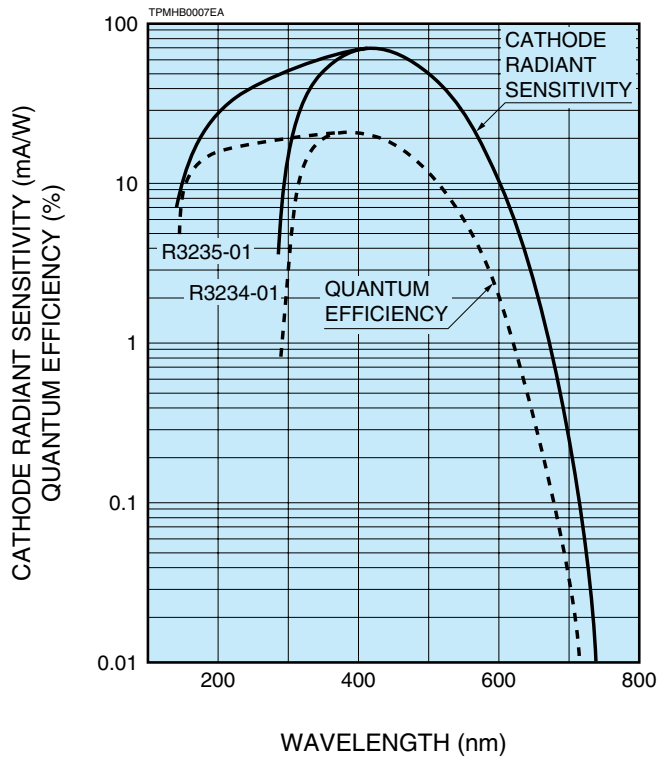
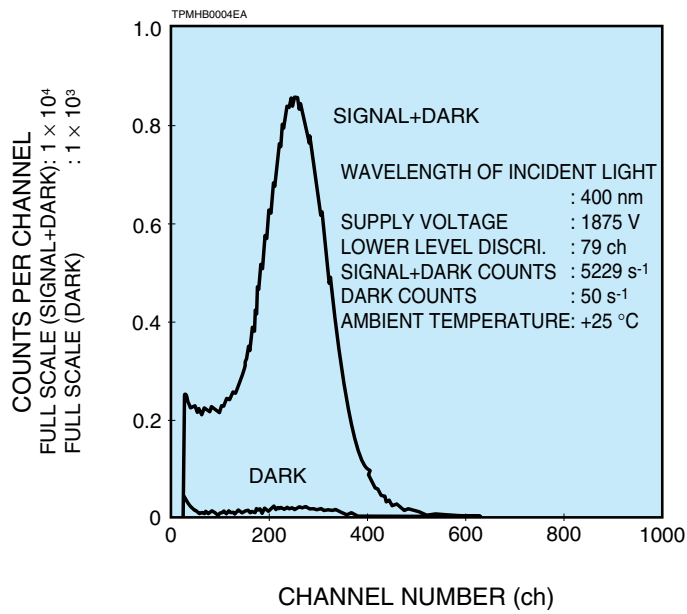
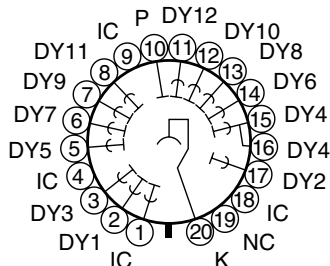
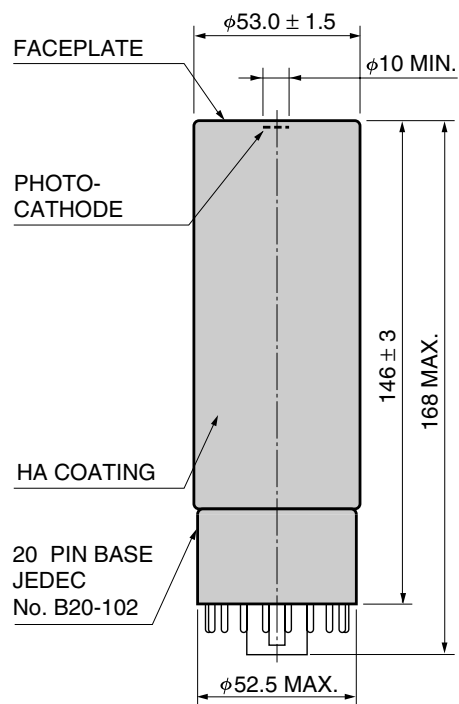


Figure 3: Typical Single Photoelectron Pulse Height Distribution

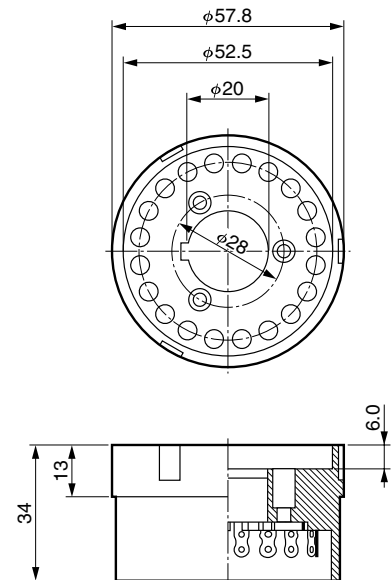


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Figure 4: Dimensional Outline (Unit: mm)



Socket E678-20B  
(Supplied)



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