

## 38 mm Diameter Photomultiplier Tube For Scintillation Counting, Gamma Camera Bialkali Photocathode, 10 Stages, Head-on Type

### GENERAL

Parameter		Description / Value	Unit
Spectral Response		300 to 650	nm
Wavelength of Maximum Response		420	nm
Photocathode	Material	Bialkali	—
	Minimum Effective Area	φ34	mm
Window Material		Borosilicate glass	—
Dynode	Structure	Circular and linear-focused	—
	Number of Stages	10	—
Operating Ambient Temperature		-30 to +50	°C
Storage Temperature		-80 to +50	°C

### MAXIMUM RATINGS (Absolute Maximum Values)

Parameter		Value	Unit
Supply Voltage	Between Anode and Cathode	1250	V
	Between Anode and Last Dynode	200	V
Average Anode Current		0.1	mA

### CHARACTERISTICS (at 25 °C)

Parameter		Min.	Typ.	Max.	Unit
Cathode Sensitivity	Luminous (2856 K)	80	120	—	μA/lm
	Radiant at 420 nm	—	89	—	mA/W
	Blue Sensitivity Index (CS 5-58)	10	11.5	—	—
Anode Sensitivity	Luminous (2856 K)	—	120	—	A/lm
	Radiant at 420 nm	—	$8.9 \times 10^4$	—	A/W
Gain		—	$1.0 \times 10^6$	—	—
Anode Dark Current (after 30 min storage in darkness)		—	2	20	nA
Time Response	Anode Pulse Rise Time	—	3.2	—	ns
	Electron Transit Time	—	34	—	ns
Stability	Long Term	—	0.5	—	%
	Short Term	—	0.5	—	%
Pulse Linearity	±2 % Deviation	—	10 (50)	—	mA
	±5 % Deviation	—	30 (70)	—	mA

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

( ) : Measured with the special voltage distribution ratio (Tapered Divider) shown below.

### VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE

Electrodes	K	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	P
Normal Divider Type	2	1	1	1	1	1	1	1	1	1	1	1
Tapered Divider Type	2	1	1	1	1	1	1.2	1.5	2.2	3.6	3	

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

# PHOTOMULTIPLIER TUBE R11102-01

Figure 1: Typical Spectral Response

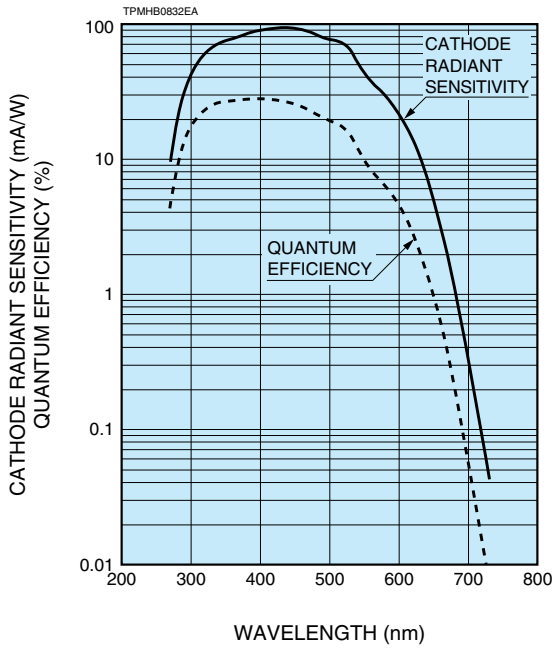


Figure 2: Typical Gain

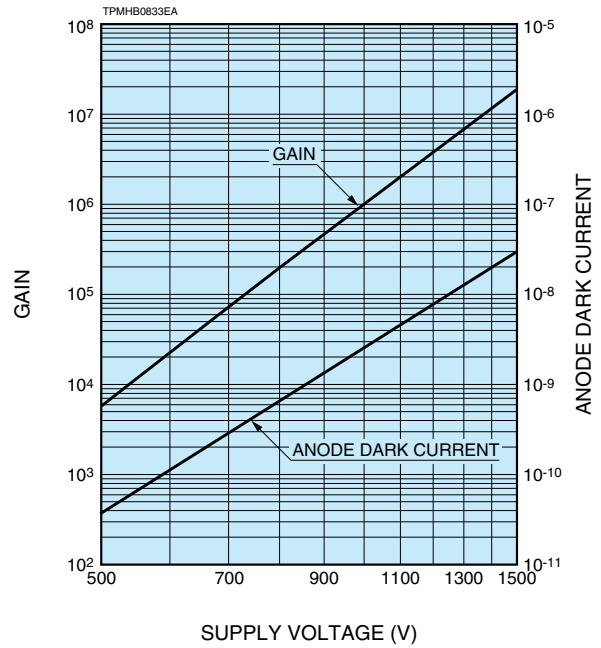
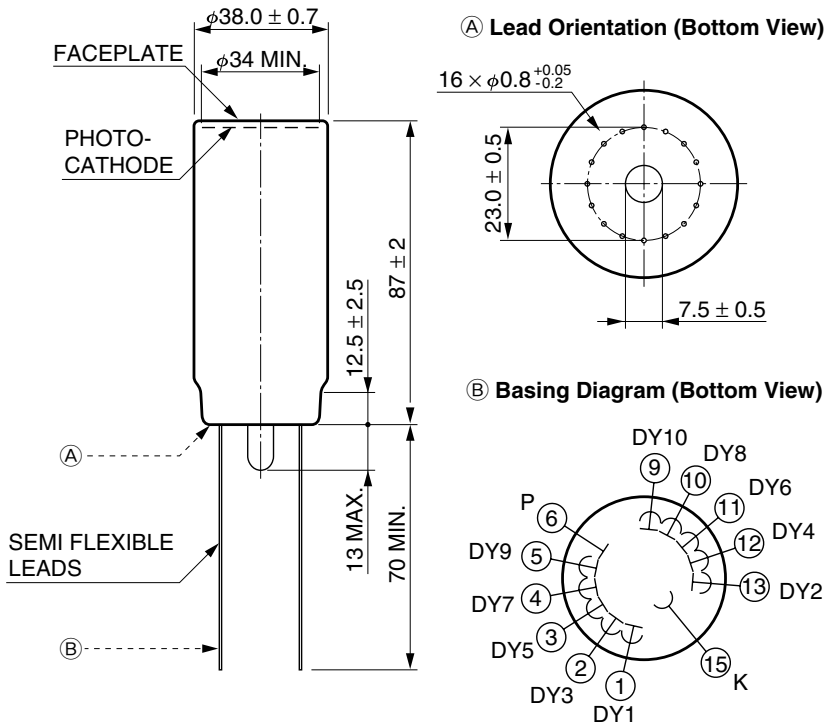


Figure 3: Dimensional Outline and Basing Diagram (Unit: mm)



TPMHA0565EA

# HAMAMATSU

WEB SITE [www.hamamatsu.com](http://www.hamamatsu.com)

HAMAMATSU PHOTONICS K.K., Electron Tube Division

314-5, Shimokanzo, Iwata City, Shizuoka Pref., 438-0193, Japan, Telephone: (81)539/62-5248, Fax: (81)539/62-2205

U.S.A.: Hamamatsu Corporation: 360 Foothill Road, P. O. Box 6910, Bridgewater, N.J. 08807-0910, U.S.A., Telephone: (1)908-231-0960, Fax: (1)908-231-1218 E-mail: [usa@hamamatsu.com](mailto:usa@hamamatsu.com)

Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49)8152-375-0, Fax: (49)8152-2658 E-mail: [info@hamamatsu.de](mailto:info@hamamatsu.de)

France: Hamamatsu Photonics France S.A.R.L.: 19, Rue du Saule Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: (33)1 69 53 71 00, Fax: (33)1 69 53 71 10 E-mail: [infos@hamamatsu.fr](mailto:infos@hamamatsu.fr)

United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road Welwyn Garden City Hertfordshire AL7 1BW, United Kingdom, Telephone: 44-(0)1707-294888, Fax: 44-(0)1707-325777 E-mail: [info@hamamatsu.co.uk](mailto:info@hamamatsu.co.uk)

North Europe: Hamamatsu Photonics Norden AB: Smidesvägen 12, SE-171-41 SOLNA, Sweden, Telephone: (46)8-509-031-00, Fax: (46)8-509-031-01 E-mail: [info@hamamatsu.se](mailto:info@hamamatsu.se)

Italy: Hamamatsu Photonics Italia: S.R.L.: Strada della Moia, 1/E, 20020 Arese, (Milano), Italy, Telephone: (39)02-935 81 733, Fax: (39)02-935 81 741 E-mail: [info@hamamatsu.it](mailto:info@hamamatsu.it)

TPMH1324E01  
OCT. 2010 IP