HAMAMATSU

PHOTON IS OUR BUSINESS

PHOTOMULTIPLIER TUBE R1924A

For Scintillation Counting, Photon Counting, Ruggedized, Low Profile, 25 mm (1 Inch) Diameter, Bialkali Photocathode, 10-stage, Head-on Type

GENERAL

Parameter		Description	Unit
Spectral Response		300 to 650	nm
Peak Wavelength		420	nm
Photocathode	Material	Bialkali	—
	Minimum Effective Area	22	mm dia.
Window Material		Borosilicate glass	—
Dynode	Structure	Circular and linear-focused	—
	Number of Stages	10	—
Base		14 pin glass base	—
Suitable Socket		E678-14C (supplied)	—
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	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)	60	90	—	μA/lm
	Quantum Efficiency at 420 nm	—	26	—	%
	Blue Sensitivity index (CS 5-58)	9	10.5	—	—
Anode Sensitivity	Luminous (2856 K)	40	180	—	A/lm
Gain		—	2.0×10^6	—	—
Anode Dark Current (after 30 min storage in darkness)		—	3	20	nA
Time Response	Anode Pulse Rise Time	—	1.5	—	ns
	Electron Transit Time	—	17	—	ns
	Transit Time Spread (TTS)	—	0.9	—	ns
Pulse Linearity at ±2 % deviation		—	30	—	mA

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)

PHOTOMULTIPLIER TUBE R1924A

Figure 1: Typical Spectral Response

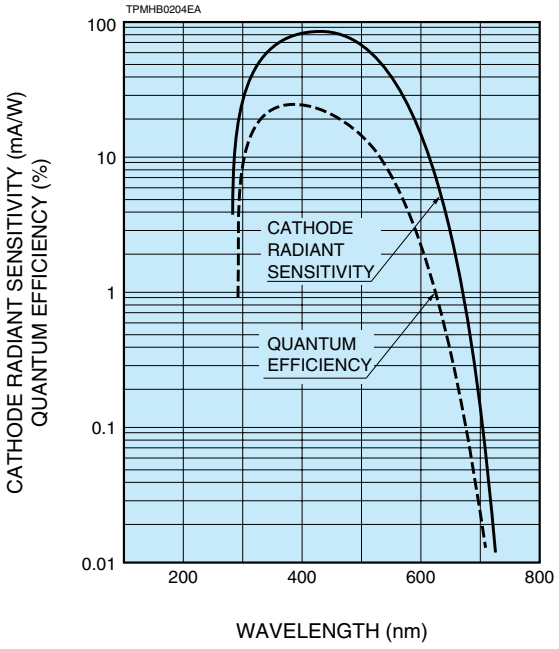


Figure 2: Typical Gain and Dark Current Characteristics

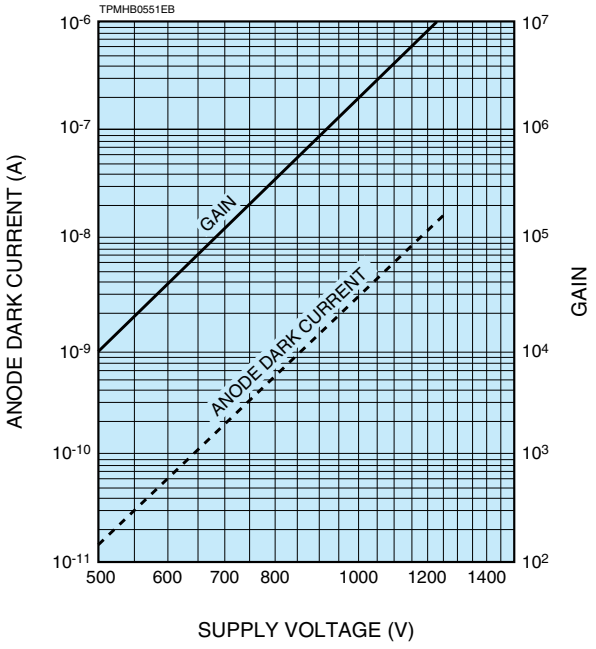


Figure 3: Dimensional Outline and Basing Diagram (Unit: mm)

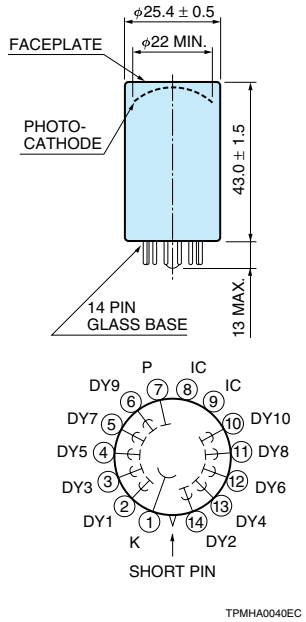
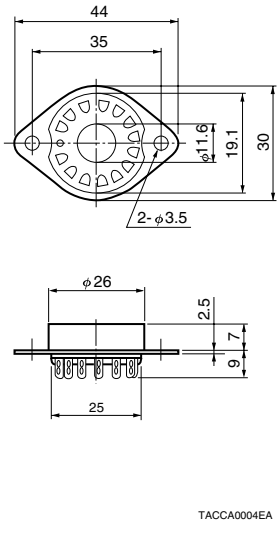
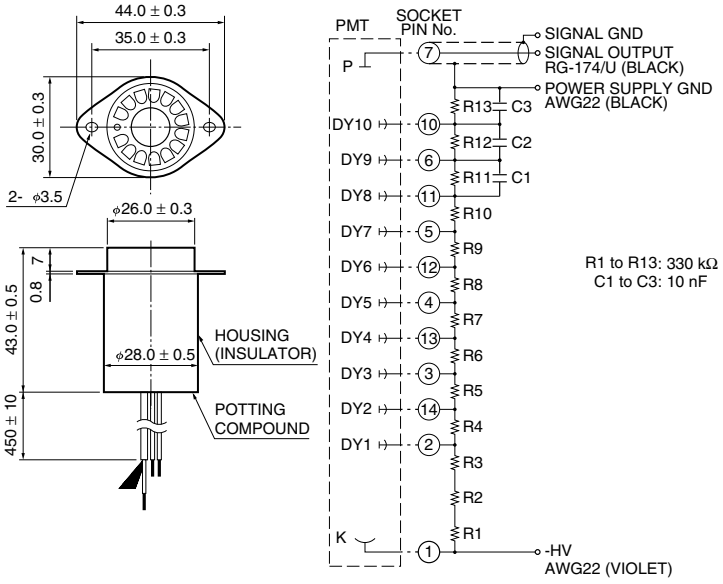


Figure 4: Accessories (Unit: mm)

Socket E678-14C (supplied)



D Type Socket Assembly (sold separately) E2924



* HAMAMATSU also provides C4900 series and C10940 series compact high voltage power supply modules.

HAMAMATSU PHOTONICS K.K. 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, Bridgewater. N.J. 08807-0910, U.S.A., Telephone: (1)908-231-0960, Fax: (1)908-231-1218 E-mail: 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
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
United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road, Welwyn Garden City, Hertfordshire AL7 1BW, United Kingdom, Telephone: (44)1707-294888, Fax: (44)1707-325777 E-mail: info@hamamatsu.co.uk
North Europe: Hamamatsu Photonics Norden AB: Torshamnsgatan 35 SE-164 40 Kista, Sweden, Telephone: (46)8-509-031-00, Fax: (46)8-509-031-01 E-mail: info@hamamatsu.se
Italy: Hamamatsu Photonics Italia S.r.l.: Strada della Moia, 1 int. 6, 20020 Arese (Milano), Italy, Telephone: (39)02-93581733, Fax: (39)02-93581741 E-mail: info@hamamatsu.it
China: Hamamatsu Photonics (China) Co., Ltd.: B1201 Jiaming Center, No.27 Dongsanhuan Beilu, Chaoyang District, Beijing 100020, China, Telephone: (86)10-6586-6006, Fax: (86)10-6586-2866 E-mail: hpc@hamamatsu.com.cn

TPMH1280E02
MAR. 2014 IP