

FEATURES

- Wide effective area: 23 mm × 23 mm
- 2 × 2 multianode
- High sensitivity
- High speed response
- Compact
- R11265 series with divider circuit (H13226A series)

APPLICATIONS

- High energy physics
- Scintillation counting



Left: R11265U-M4 series, Right: H13226A series

Figure 1: Typical spectral response

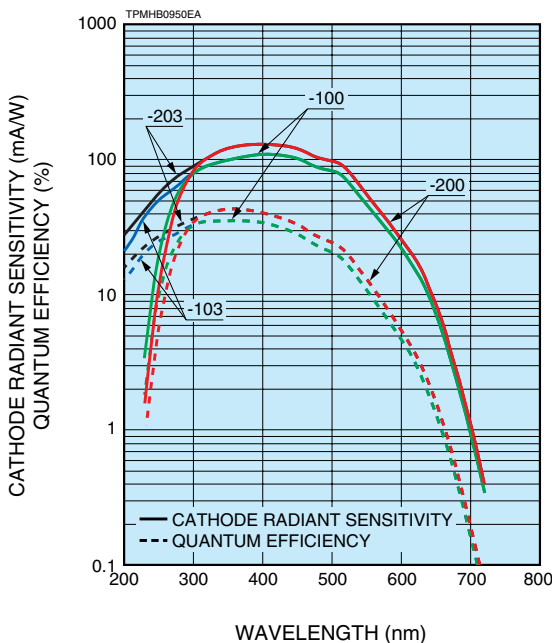
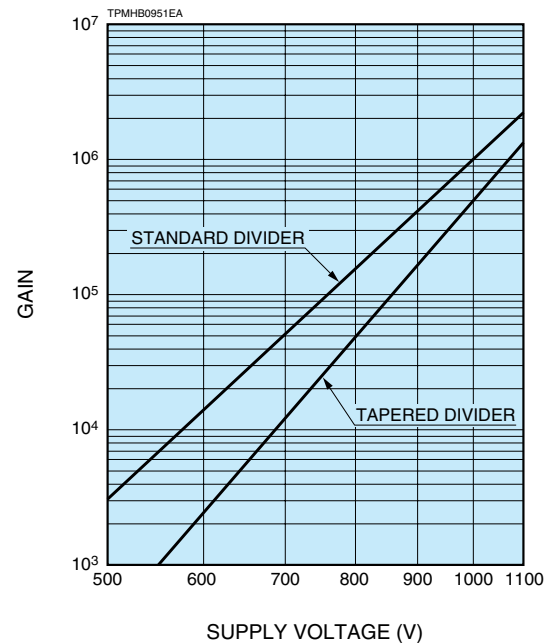


Figure 2: Typical gain



PHOTOMULTIPLIER TUBES AND PHOTOMULTIPLIER TUBE ASSEMBLIES

R11265U-M4 SERIES / H13226A SERIES

Type No.	Spectral response		Photo-cathode material ^(A)	Window material ^(B)	Dynode structure / stages ^(C)	Maximum ratings		Cathode characteristics				
	Range (nm)	Peak wavelength (nm)				Supply voltage between anode and cathode (V)	Average anode output current (mA)	Luminous		Blue sensitivity index (CS 5-58) Typ.	Quantum efficiency ^(D) Typ. (%)	Radiant ^(E) Typ. (mA/W)
								Min. (μA/lm)	Typ. (μA/lm)			
R11265U-100-M4	300 to 650	400	SBA	K	MC/12	1100	0.1	90	105	13.5	35	110
R11265U-200-M4	300 to 650	400	UBA	K	MC/12	1100	0.1	110	135	15.5	43	130
R11265U-103-M4	185 to 650	400	SBA	UV	MC/12	1100	0.1	90	105	13.5	35	110
R11265U-203-M4	185 to 650	400	UBA	UV	MC/12	1100	0.1	110	135	15.5	43	130
H13226A-100	300 to 650	400	SBA	K	MC/12	-1100	0.018	90	105	13.5	35	110
H13226A-200	300 to 650	400	UBA	K	MC/12	-1100	0.018	110	135	15.5	43	130
H13226A-103	185 to 650	400	SBA	UV	MC/12	-1100	0.018	90	105	13.5	35	110
H13226A-203	185 to 650	400	UBA	UV	MC/12	-1100	0.018	110	135	15.5	43	130
H13226A-100-10	300 to 650	400	SBA	K	MC/12	-1100	0.015	90	105	13.5	35	110
H13226A-200-10	300 to 650	400	UBA	K	MC/12	-1100	0.015	110	135	15.5	43	130
H13226A-103-10	185 to 650	400	SBA	UV	MC/12	-1100	0.015	90	105	13.5	35	110
H13226A-203-10	185 to 650	400	UBA	UV	MC/12	-1100	0.015	110	135	15.5	43	130

NOTE: (A) SBA: Super bialkali, UBA: Ultra bialkali (B) K: Borosilicate glass, UV: UV glass (C) MC: Metal channel
(D) Quantum efficiency is measured at the peak wavelength (350 nm).
(E) Cathode radiant sensitivity is measured at the peak wavelength (400 nm).

Figure 3: Single photon counting (Example)

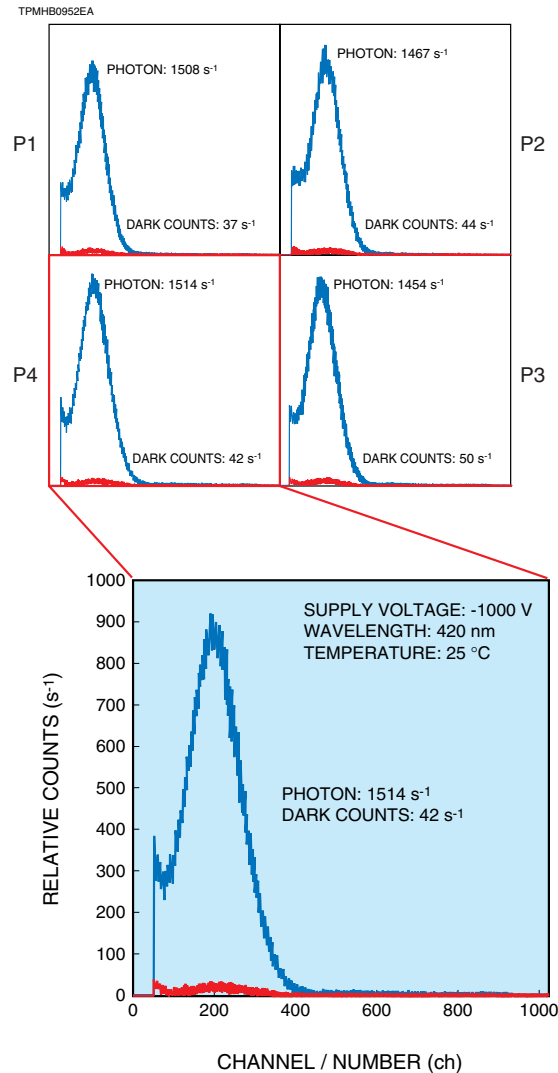


Figure 4: Anode cross-talk (example)

P1	100	1.7	P2
P4	2.3	0.1	P3

SUPPLY VOLTAGE: 1000 V
LIGHT SOURCE: TUNGSTEN LAMP WITH BLUE FILTER
(UNIFORM DC DRIVEN LIGHT)
WAVELENGTH: 400 nm
SPOT ILLUMINATION: 11 mm × 11 mm

Anode to cathode supply voltage (V)	Anode characteristics								Pulse linearity		Operating ambient temperature (°C)	Storage temperature (°C)	Type No.	
	Luminous		Gain Typ.	Dark current per channel (After 30 min)		Time response			±2 % Deviation (mA)	±5 % Deviation (mA)				
	Min. (A/lm)	Typ. (A/lm)		Typ. (nA)	Max. (nA)	Rise time	Transit time	T.T.S.						
	(A/lm)	(A/lm)				(ns)	(ns)	(ns)						
1000	25 (25)	105 (52.5)	1.0×10^6 (5.0×10^5)	1	4	1.1	5.3	0.39	4 (11)	7 (25)	-30 to +50	-30 to +50	R11265U-100-M4	
1000	25 (25)	135 (67.5)	1.0×10^6 (5.0×10^5)										R11265U-200-M4	
1000	25 (25)	105 (52.5)	1.0×10^6 (5.0×10^5)										R11265U-103-M4	
1000	25 (25)	135 (67.5)	1.0×10^6 (5.0×10^5)										R11265U-203-M4	
-1000	25	105	1.0×10^6						0 to +50	-15 to +50	H13226A-100			
-1000	25	135	1.0×10^6									4	7	H13226A-200
-1000	25	105	1.0×10^6											H13226A-103
-1000	25	135	1.0×10^6											H13226A-203
-1000	(25)	(52.5)	5.0×10^5											11
-1000	(25)	(67.5)	5.0×10^5									H13226A-200-10		
-1000	(25)	(52.5)	5.0×10^5									H13226A-103-10		
-1000	(25)	(67.5)	5.0×10^5									H13226A-203-10		

(): 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	Dy11	Dy12	GR	P
Standard divider type	2.3	1.2	1	1	1	1	1	1	1	1	1	1	1	1	0.5
Tapered divider type	2.8	1.5	1	1	1	1	1	1	1	1	1	1.3	3.3	0.5	

Supply voltage: 1000 V, K: Cathode, Dy: Dynode, GR: Guard ring, P: Anode

Figure 5: Time response (Example)

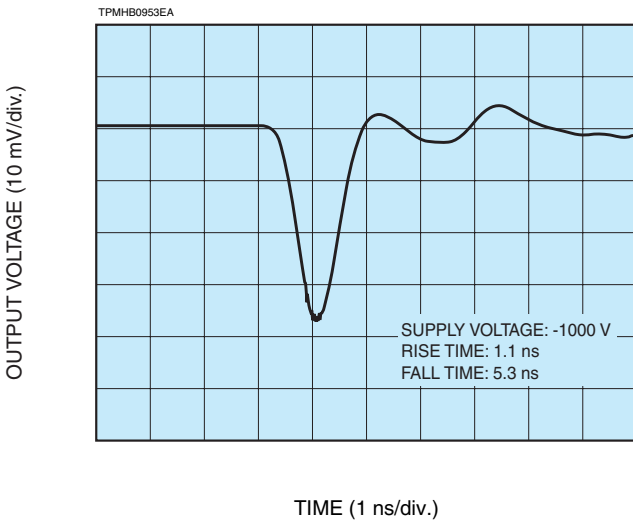


Figure 6: Pulse linearity /channel (Example)

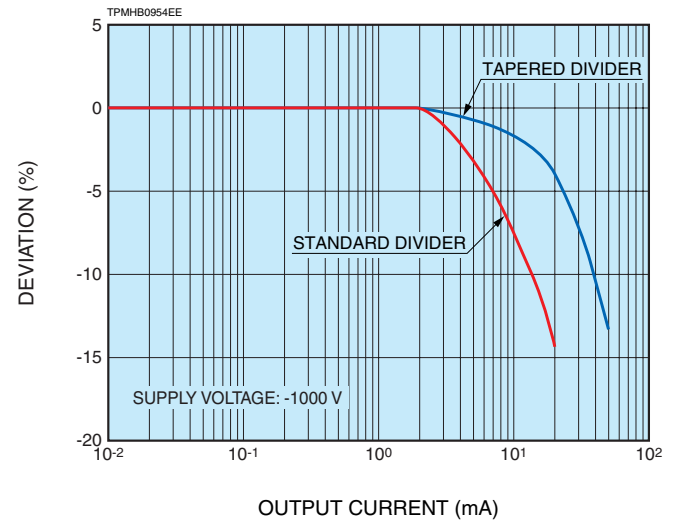
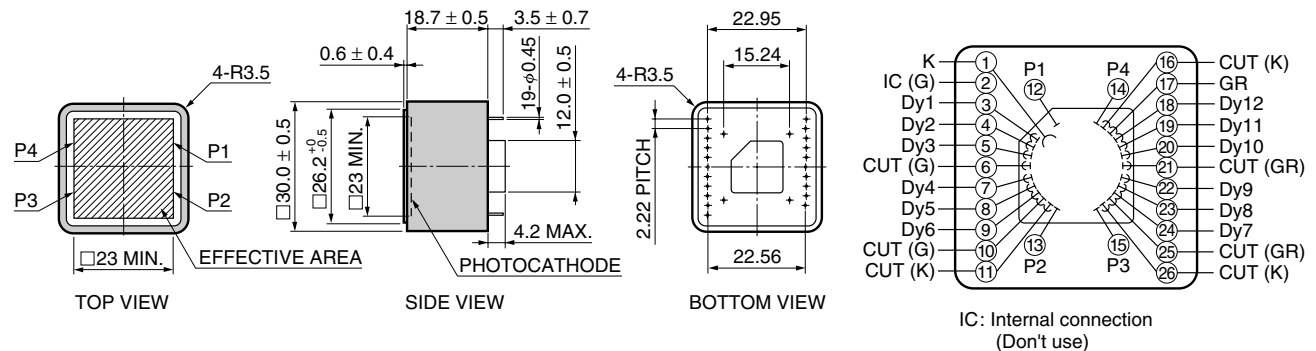


Figure 7: Dimensional outline and basing diagram (Unit: mm)

● R11265U-M4 series

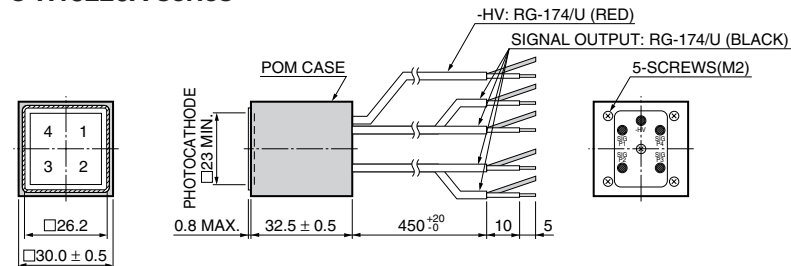


PHOTOMULTIPLIER TUBES AND PHOTOMULTIPLIER TUBE ASSEMBLIES

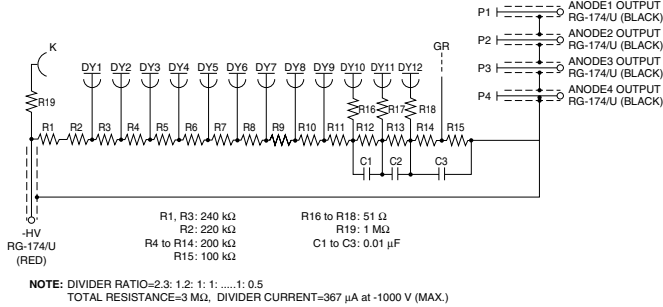
R11265U-M4 SERIES / H13226A SERIES

Figure 8: Dimensional outline and circuit diagram (Unit: mm)

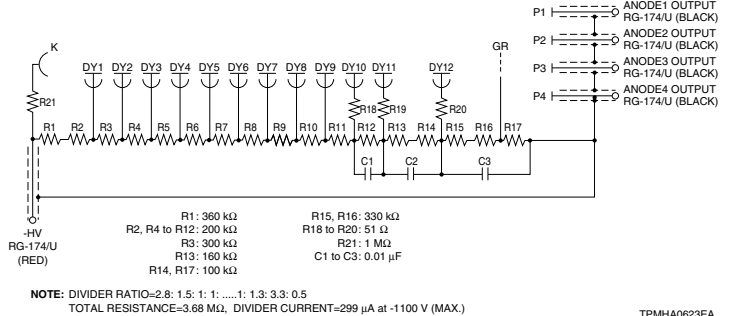
● H13226A series



H13226A-100/-200/-103/-203



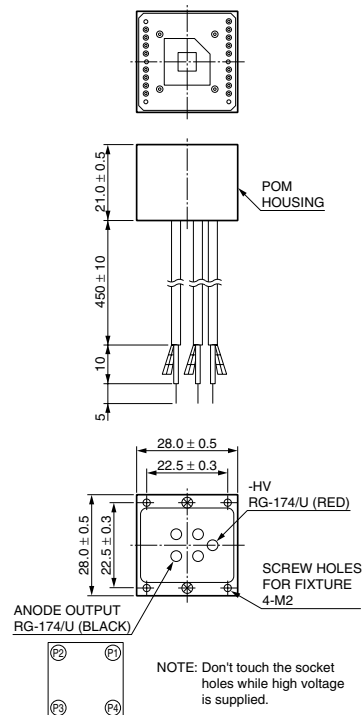
H13226A-100-10/-103-10/-203-10



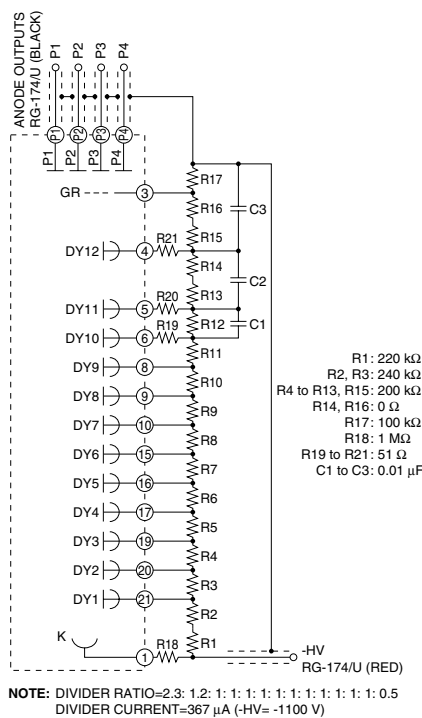
TPMHA0623EA

[ACCESSORIES] (Unit: mm) SOLD SEPARATELY

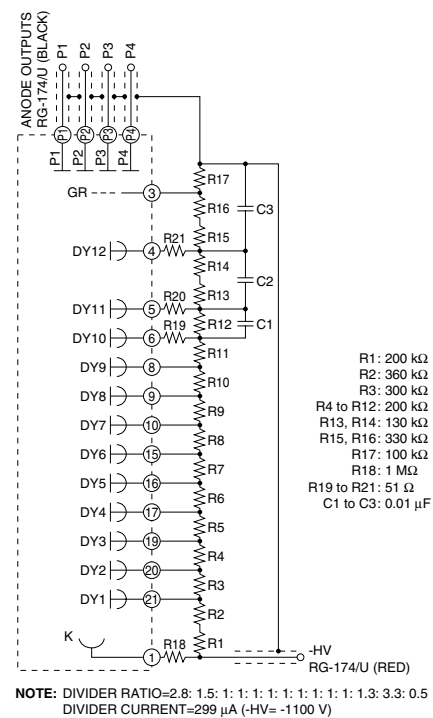
● Socket assemblies E13222-01, E13222-02



E13222-01 (Standard divider type)



E13222-02 (Tapered divider type)



TACCA0349EA

⚠ WARNING ~ High voltage ~

The product is operated at high voltage potential. Further, the metal housing of the product is connected to the photocathode (potential) so that it becomes a high voltage potential when the product is operated at a negative high voltage (anode grounded). Accordingly, extreme safety care must be taken for the electrical shock hazard to the operator or the damage to the other instruments.

* C4900 and C4900-01 can be used for R11265U-M4 series / H13226A series.

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: info@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: Torshamngatan 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

Taiwan: Hamamatsu Photonics Taiwan Co., Ltd.: 8F-3, No.158, Section2, Gongdao 5th Road, East District, Hsinchu, 300, Taiwan R.O.C. Telephone: (886)03-659-0080, Fax: (886)07-811-7238 E-mail: info@tw.hpk.co.jp

TPMH1359E01
SEPT. 2016 IP