

FEATURES

- 8 × 8 multianode, Anode size: 2 mm × 2 mm / Anode
- Effective area: 18.1 mm × 18.1 mm
- High speed response
- Low cross-talk: 2 % Typ.
- High cathode sensitivity
- Two configurations are available for -HV input (see figure 8)
H7546A: Cable input type
H7546B: Hard pin input type
- Weight: Approx. 95 g (H7546A)
Approx. 60 g (H7546B)

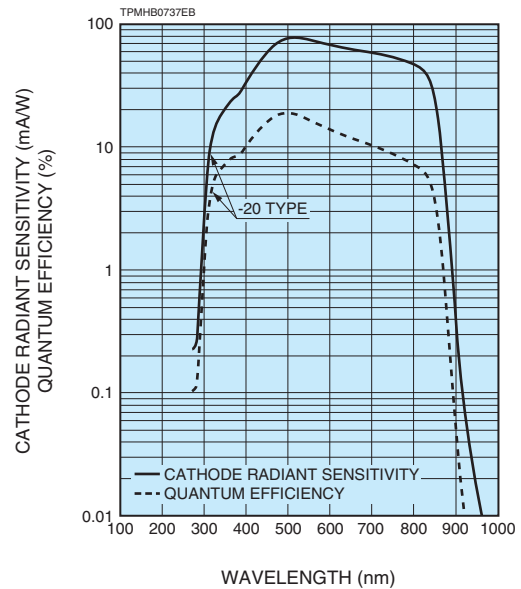
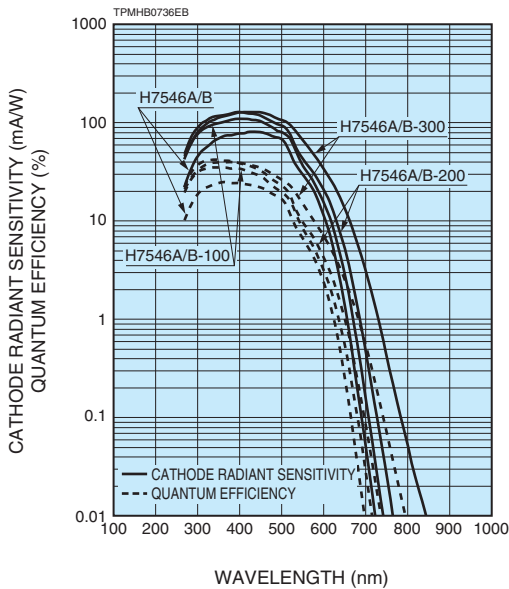
APPLICATIONS

- High energy physics
- Flow cytometer
- DNA sequencer
- 2D radiation imaging



H7546B

Figure 1: Typical spectral response



MATRIX MULTIANODE PHOTOMULTIPLIER TUBE ASSEMBLY H7546A, H7546B

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 in total (mA)	Luminous		Blue sensitivity index Typ.	Red/White ratio Typ.	Radiant Typ. (mA/W)
								Min. (μA/lm)	Typ. (μA/lm)			
H7546A/B	300 to 650	420	BA	K	MC/12	-1000	0.023	60	80	9.5	—	80
H7546A/B-100	300 to 650	400	SBA	K	MC/12	-1000	0.023	90	105	13.5	—	110
H7546A/B-200	300 to 650	400	UBA	K	MC/12	-1000	0.023	110	135	15.5	—	130
H7546A/B-300	300 to 700	420	EGBA	K	MC/12	-1000	0.023	120	160	14.0	—	125
H7546A/B-20	300 to 920	530	ERMA	K	MC/12	-1000	0.023	350	500	—	0.4	78

NOTE: (A) BA: Bialkali, SBA: Super bialkali, UBA: Ultra bialkali, EGBA: Extended green bialkali, ERMA: Extended red multialkali
 (B) K: Borosilicate glass
 (C) MC: Metal channel
 (D) The maximum average anode current is defined as 5 % of divider current when maximum high voltage is applied.

Figure 2: Typical gain

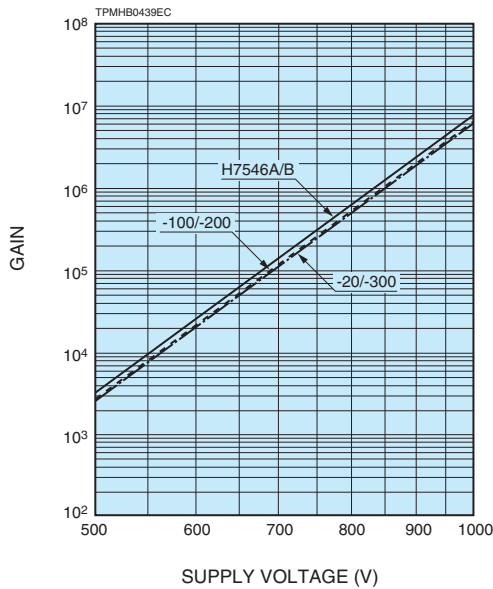


Figure 3: Time response (Example)

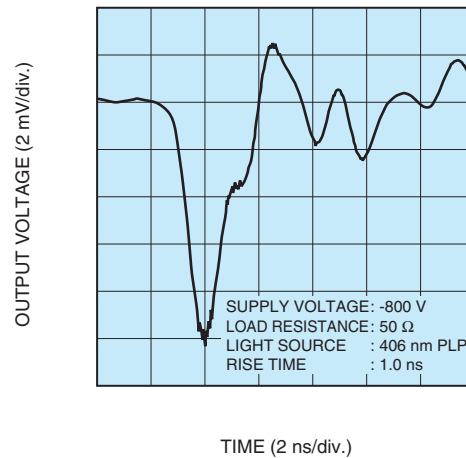


Figure 4: Single photoelectron PHD per channel (Example)

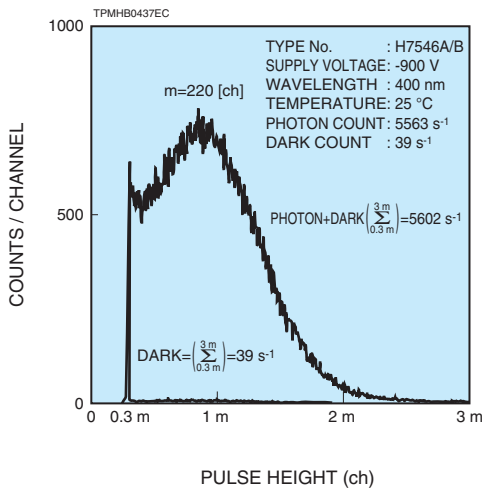


Figure 5: Anode cross-talk (Example)

0.3	1.4	0.4
0.8	100	1.2
0.2	1.1	0.3

SUPPLY VOLTAGE: -800 V
 LIGHT SOURCE: TUNGSTEN LAMP (DC LIGHT)
 (with φ1 mm optical fiber on Photocathode)

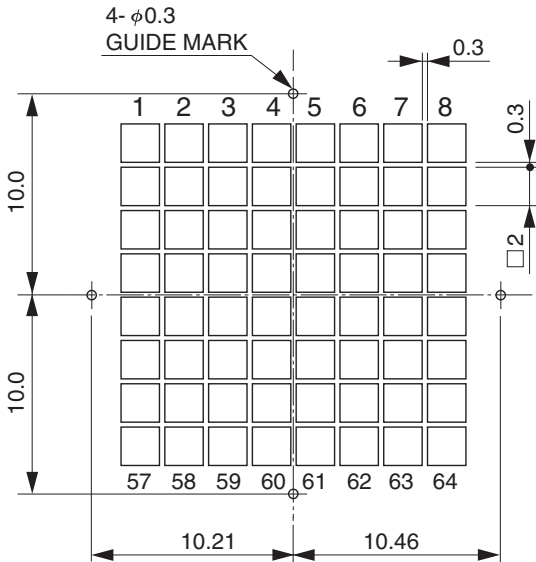
Anode to cathode supply voltage (V)	Anode characteristics								Pulse linearity per channel		Uniformity between each anode		Type No.
	Luminous		Gain Typ.	Dark current per channel (After 30 min)		Time response			2 % deviation (mA)	5 % deviation (mA)	Typ.	Max.	
	Min. (A/lm)	Typ. (A/lm)		Typ. (nA)	Max. (nA)	Rise time Typ. (ns)	Transit time Typ. (ns)	T.T.S. Typ. (ns)					
-800	10	50	6.3×10^5	0.2	2	1.0	12.0	0.38	0.3	0.6	1: 2	1: 3	H7546A/B
-800	15	55	5.2×10^5								1: 2	1: 3	H7546A/B-100
-800	15	70	5.2×10^5								1: 2	1: 3	H7546A/B-200
-800	20	80	5.0×10^5								1: 2	1: 3	H7546A/B-300
-800	25	250	5.0×10^5								1: 3	1: 5	H7546A/B-20

VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE

Electrodes	K	Dy1	Dy2	Dy3	Dy4	Dy5	...	Dy9	Dy10	Dy11	Dy12	P
Ratio		3	2	2	1	1	1 ... 1	1	1	2	5	

Supply voltage: -800 V, K: Cathode, Dy: Dynode, P: Anode

Figure 6: Anode matrix and guide mark (Unit: mm)



Anode pattern

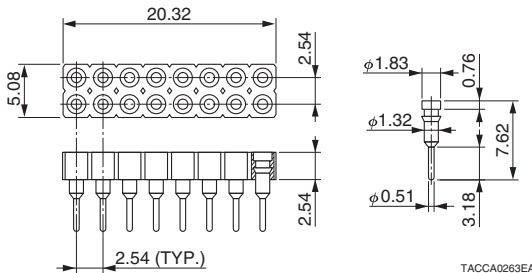
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GUIDEMARK

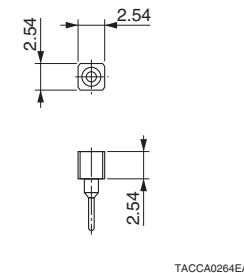
The guide marks are holes of 0.3 mm in diameter on the electrode plate. They can be seen from top of the H7546 series through its photocathode. They can be used for positioning when scintillating or optical fibers are coupled to the H7546 series.

Figure 7: Suitable sockets (Unit:mm) Supplied

SD-108-T-22 × 4 pcs
(for anode output pins)

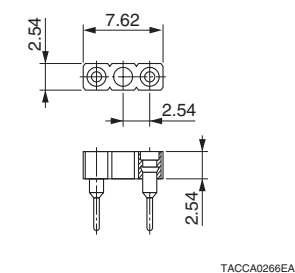


SS-101-T-22 × 2 pcs
(for GND, DY12 pin)



ASP-24307-02*
(for GND, -HV pin)

* H7546B Only



MATRIX MULTIANODE PHOTOMULTIPLIER TUBE ASSEMBLY H7546A, H7546B

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

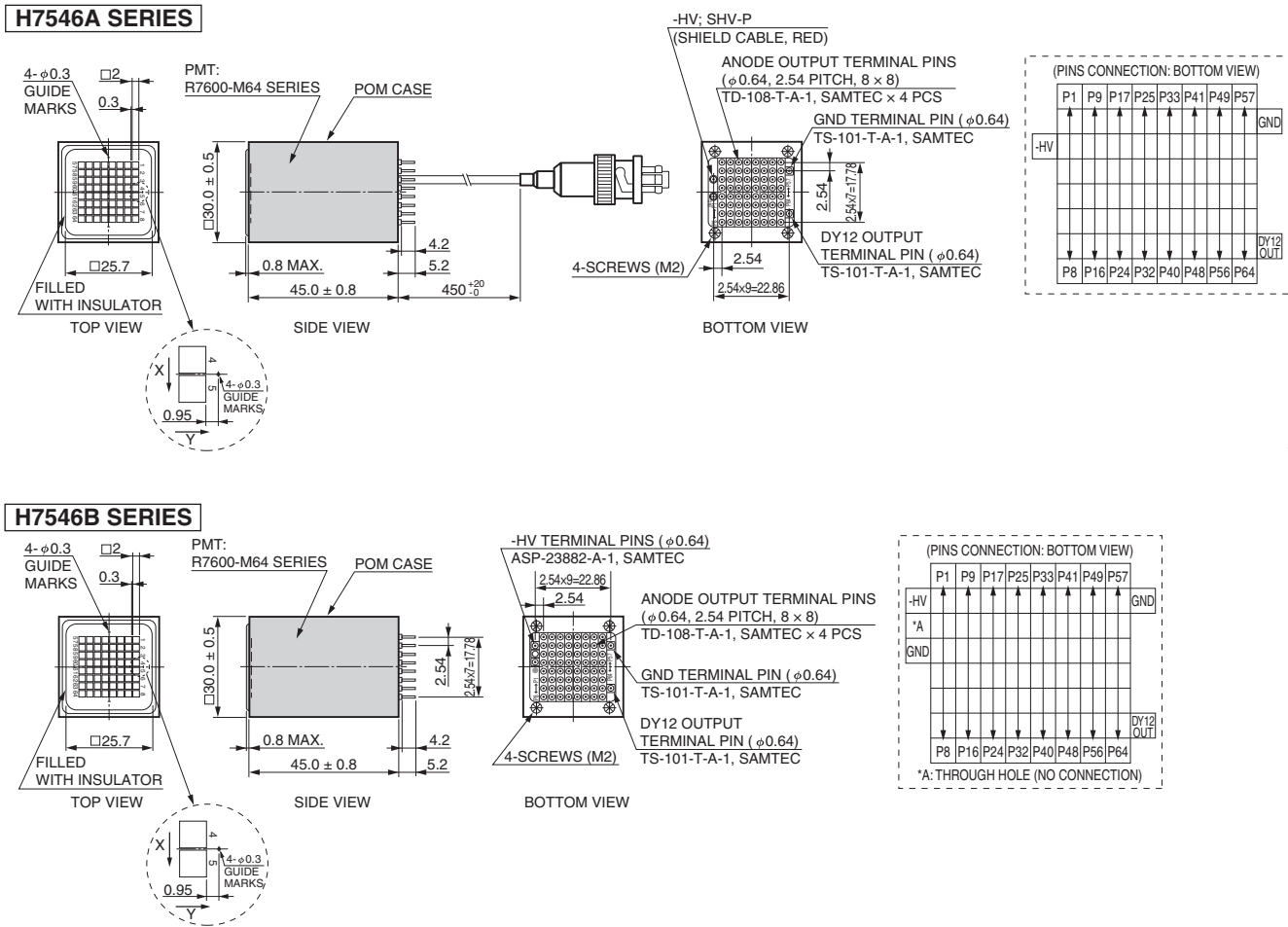
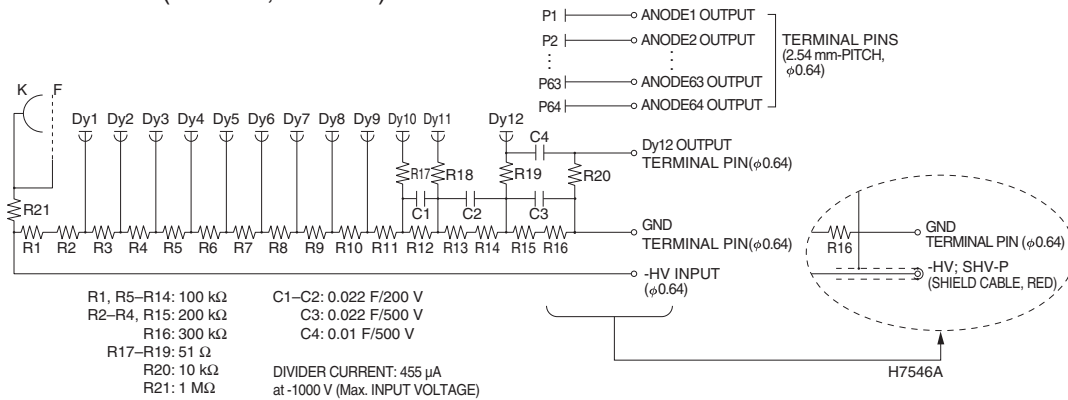


Figure 9: Internal Circuit (H7546A, H7546B)



⚠ 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.

* PATENT: USA: 5410211 and other(9), GBR: 551767 and other(9), DEU: 69209809 and other(9), FRA: 551767 and other(9), JPN: 3078905 and other(9)

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