

High Speed Response, 30 mm Square, Bialkali and Multialkali Photocathode  
10-stage, Head-on Type

## FEATURES

- Effective Area: 18 mm × 18 mm
- High Cathode Sensitivity
  - Luminous 200  $\mu\text{A}/\text{lm}$  Typ. (R5900U-01 Type)
  - Luminous 500  $\mu\text{A}/\text{lm}$  Typ. (R5900U-20 Type)
- High Speed Response
- Wide Dynamic Range
- Compact
- Weight: Approx. 33 g

## APPLICATIONS

- High Energy Physics
- Flow Cytometer (R5900U-01, -20 Type)
- DNA Sequencer (R5900U-01, -20 Type)
- Pollution Monitoring (NOx) (R5900U-01, -20 Type)

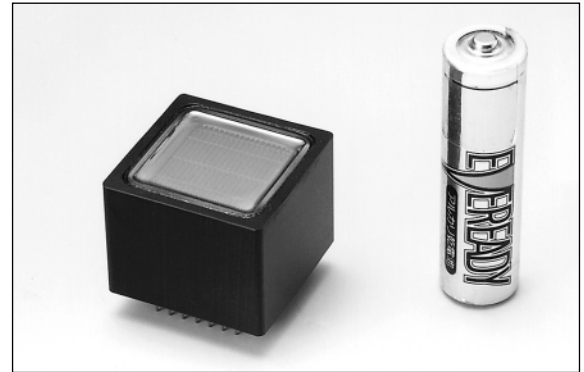
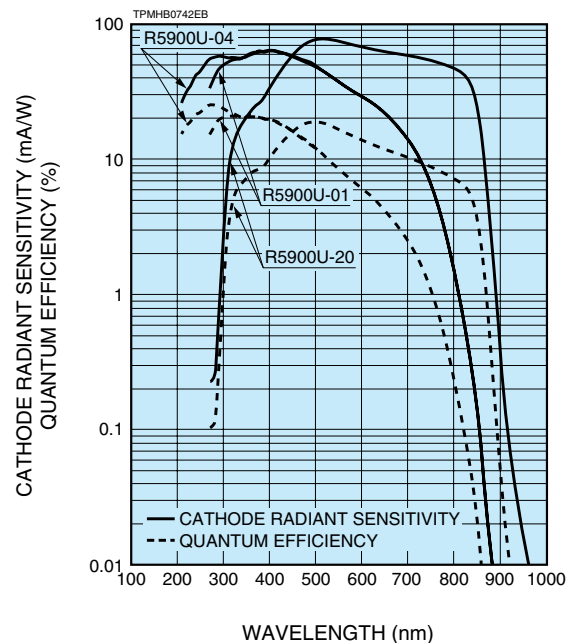
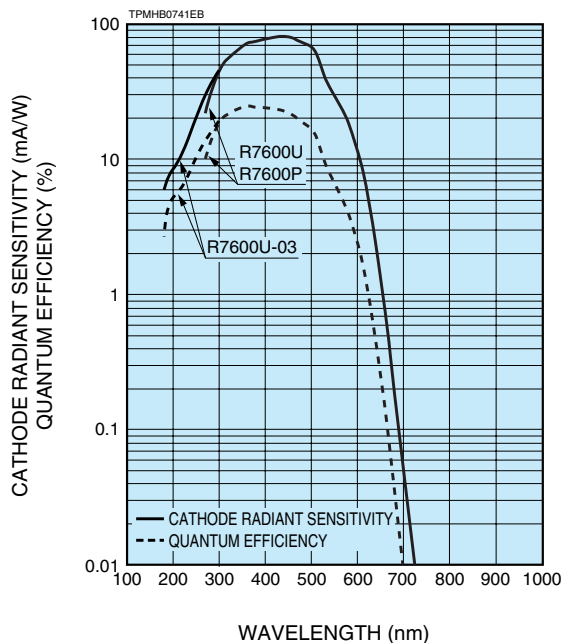


Figure 1: Typical Spectral Response



# PHOTOMULTIPLIER TUBE R5900U / R7600U SERIES

Type No.	Spectral Response		Photo-cathode Material <sup>(A)</sup>	Window Material <sup>(B)</sup>	Dynode Structure / Stages <sup>(C)</sup>	Maximum Ratings <sup>(D)</sup>		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 (CS 5-58) Typ.	Red/White Ratio (R-68) Typ.	Radiant Typ. (mA/W)
								Min. (μA/lm)	Typ. (μA/lm)			
R7600U	300 to 650	420	BA	K	MC/10	900	0.1	60	80	9.5	—	80
R5900U-01	300 to 850	420	MA	K	MC/10	900	0.1	150	200	—	0.25	65
R7600U-03	185 to 650	420	BA	U	MC/10	900	0.1	60	80	9.5	—	80
R5900U-04	185 to 880	420	MA	U	MC/10	900	0.1	150	200	—	0.25	65
R5900U-20	300 to 920	530	MA	K	MC/10	900	0.1	350	500	—	0.4	78
R7600P	300 to 650	420	BA	K	MC/10	900	0.1	60	80	9.5	—	80

**NOTE:** (A) BA: Bialkali, MA: Multialkali  
 (B) K: Borosilicate glass, U: UV glass  
 (C) MC: Metal channel  
 (D) The maximum operating ambient temperature range is -30 °C to +50 °C

Figure 2: Typical Gain

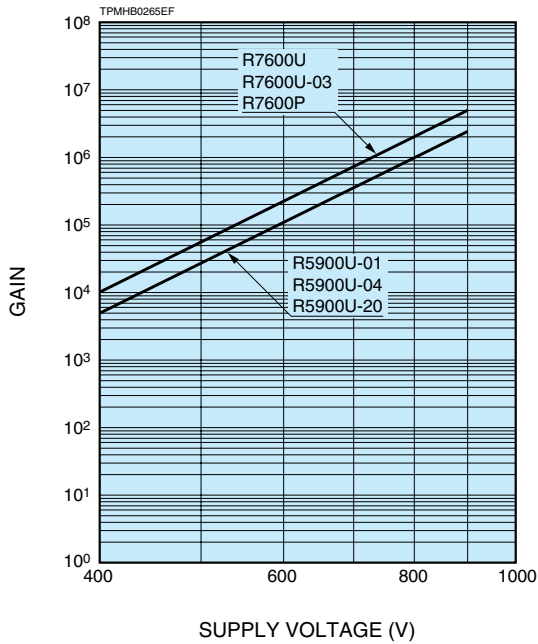


Figure 3: Time Response (Example)

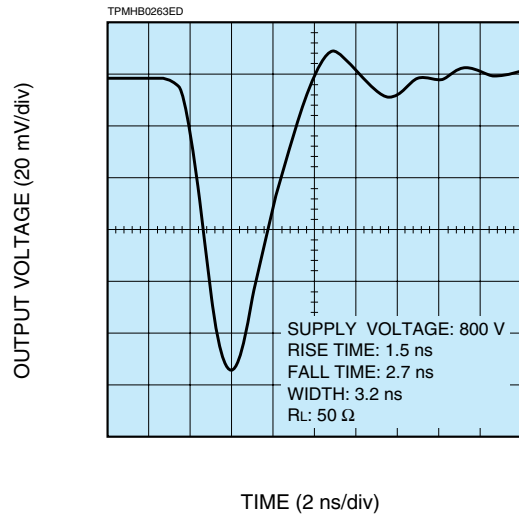
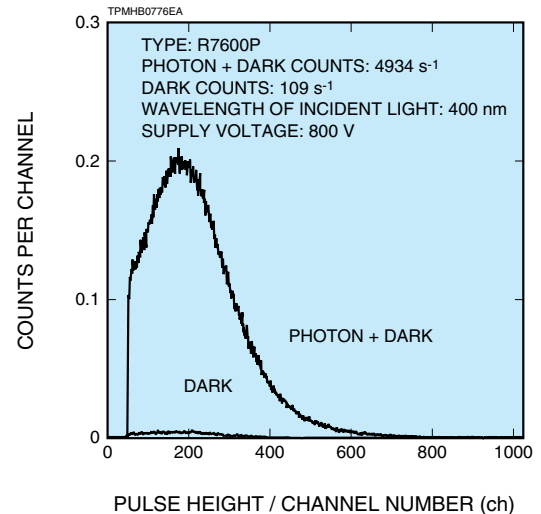


Figure 4: Single Photon Counting (Example)



Anode to Cathode Supply Voltage (V)	Anode Characteristics										Pulse Linearity		Type No.
	Luminous		Gain Typ.	Dark Current (After 30 min)		Dark Count		Time Response			2 % Deviation (mA)	5 % Deviation (mA)	
	Min. (A/lm)	Typ. (A/lm)		Typ. (nA)	Max. (nA)	Typ. (Typ.)	Max. (Max.)	Rise Time	Transit Time	TTS			
			Typ. (ns)					Typ. (ns)	Typ. (ns)				
800	40	160	$2.0 \times 10^6$	2	20	—	—	1.4	9.6	0.35	30	60	R7600U
800	50	200	$1.0 \times 10^6$	10	50	—	—						R5900U-01
800	40	160	$2.0 \times 10^6$	2	20	—	—						R7600U-03
800	50	200	$1.0 \times 10^6$	10	50	—	—						R5900U-04
800	100	500	$1.0 \times 10^6$	20	50	—	—						R5900U-20
800	40	160	$2.0 \times 10^6$	—	—	200	500						R7600P

## VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE

Electrodes	K	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	P
Ratio	1.5	1.5	1.5	1	1	1	1	1	1	1	1	1

Supply Voltage: 800 V, K: Cathode, Dy: Dynode, P: Anode

Figure 5: TTS Characteristic (Example)

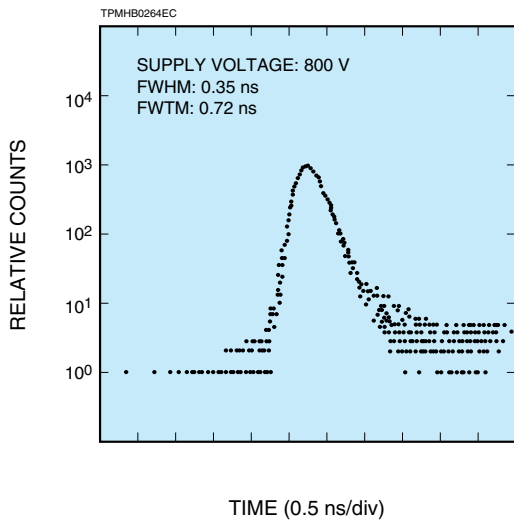
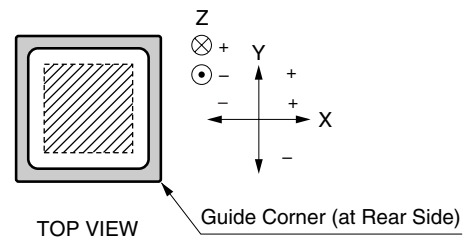
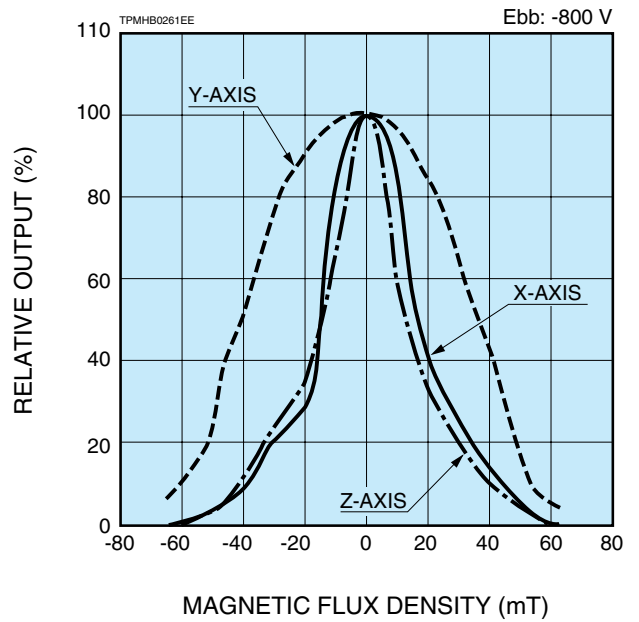
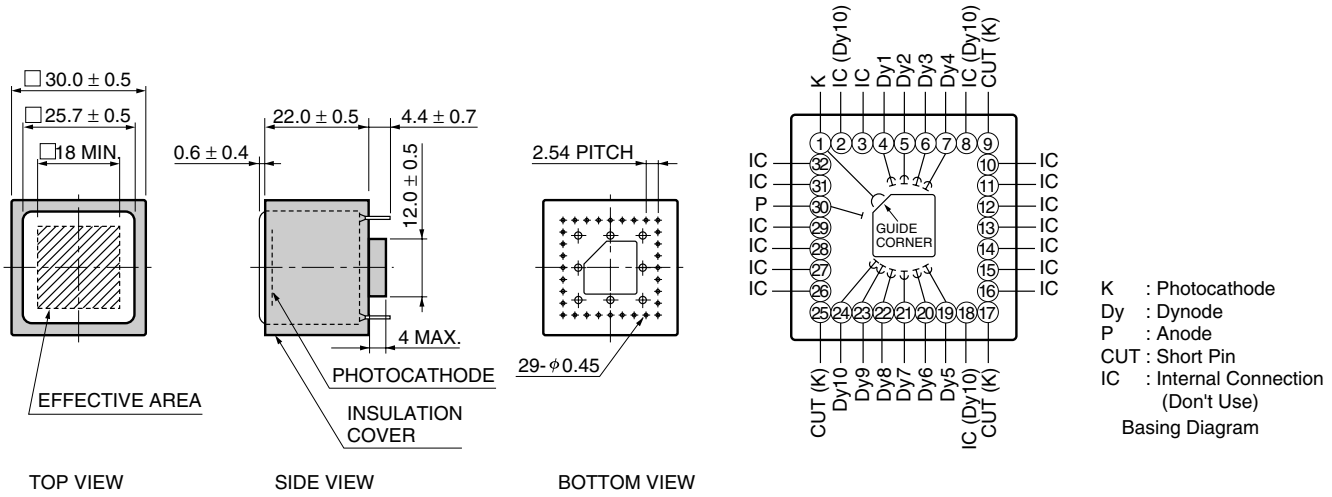


Figure 6: Effect of Magnetic Fields on Anode Output (Example)



# PHOTOMULTIPLIER TUBE R5900U / R7600U SERIES

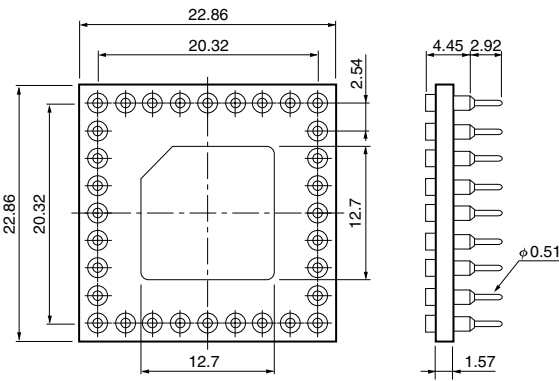
Figure 7: Dimensional Outline and Basing Diagram (Unit: mm)



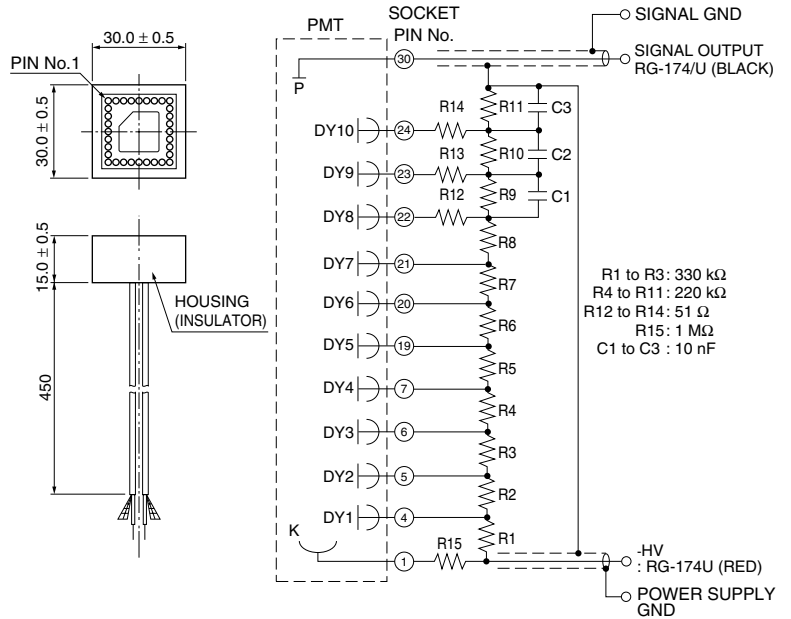
TPMHA0278E1

[ACCESSORIES] (Unit: mm) **SOLD SEPARATELY**

● **Socket E678-32B**



● **D Type Socket Assembly E5996**



TACCA0234EC

**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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