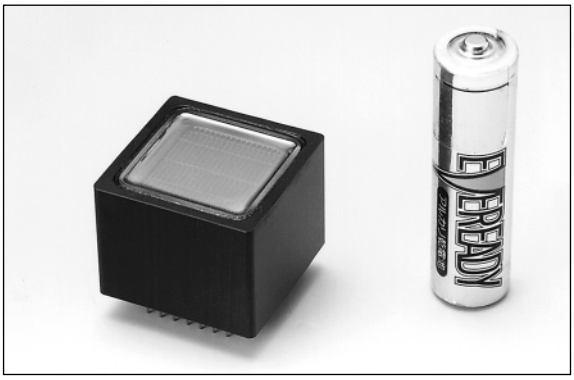
HAMAMATSU

PHOTOMULTIPLIER TUBE
R5900U / R7600U SERIES

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

FEATURES

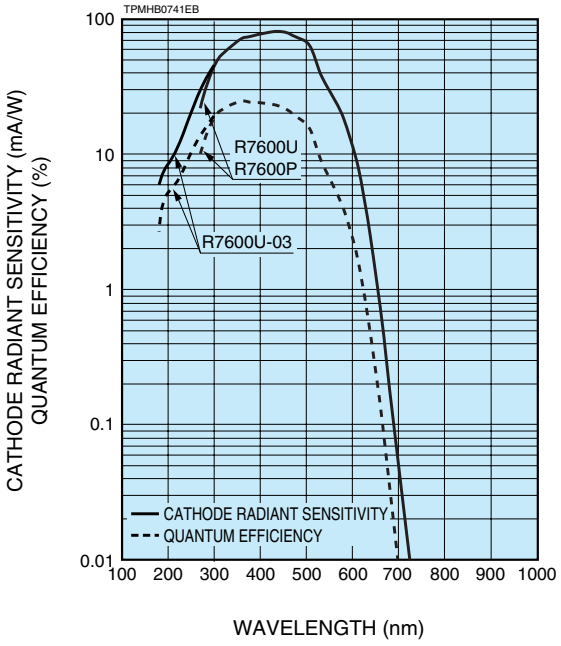
- **Effective Area: 18 mm × 18 mm**
- **High Cathode Sensitivity**
  - **Luminous 200 μA/lm Typ. (R5900U-01 Type)**
  - **Luminous 500 μA/lm Typ. (R5900U-20 Type)**
- **High Speed Response**
- **Wide Dynamic Range**
- **Compact**
- **Weight: Approx. 33 g**

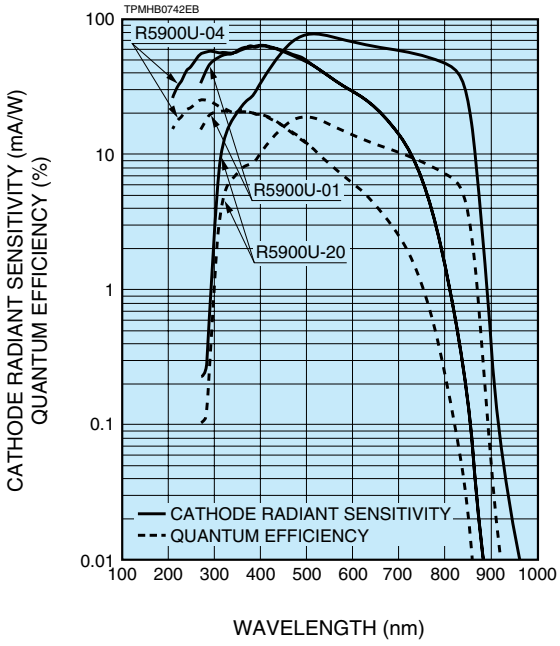


APPLICATIONS

- **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





Subject to local technical requirements and regulations, availability of products included in this promotional material may vary. Please consult with our sales office.
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Type No.	Spectral Response		Ⓐ	Ⓑ	Ⓒ	Maximum Ratings Ⓓ		Cathode Characteristics				
	Range (nm)	Peak Wavelength (nm)	Photo-cathode Material	Window Material	Dynode Structure / Stages	Supply Voltage Between Anode and Cathode (V)	Average Anode Output Current in Total (mA)	Luminous Min. (μA/lm)	Luminous Typ. (μA/lm)	Blue Sensitivity Index (CS 5-58) Typ.	Red/ White Ratio (R-68) Typ.	Radiant Typ. (mA/W)
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: Ⓐ BA: Bialkali, MA: Multialkali
Ⓑ K: Borosilicate glass, U: UV glass
Ⓒ MC: Metal channel
Ⓓ The maximum operating ambient temperature range is -30 °C to +50 °C

Figure 2: Typical Gain

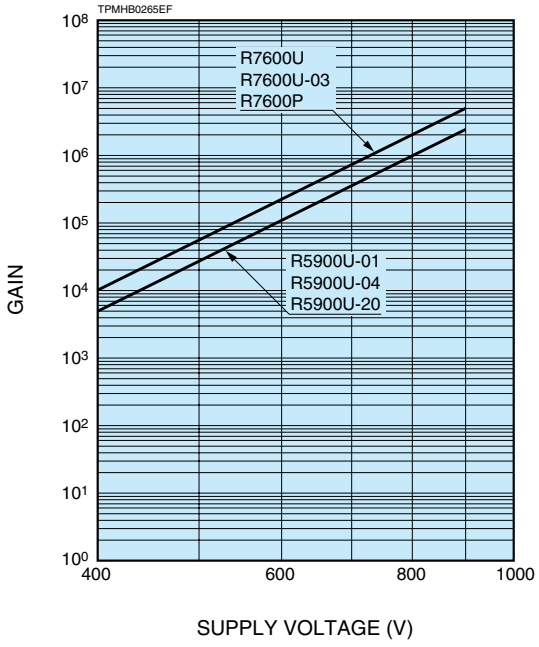


Figure 3: Time Response (Example)

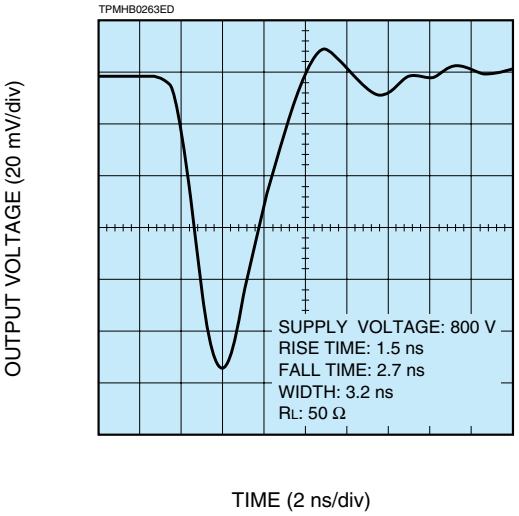
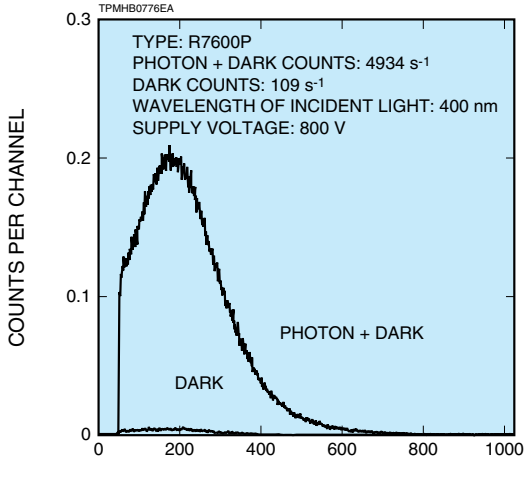


Figure 4: Single Photon Counting (Example)



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

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

Figure 5: TTS Characteristic (Example)

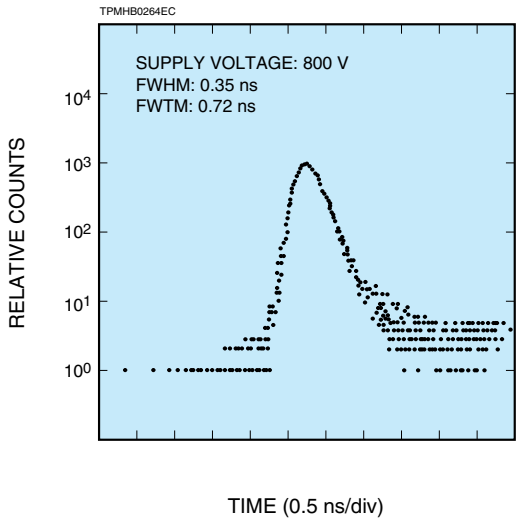


Figure 6: Effect of Magnetic Fields on Anode Output (Example)

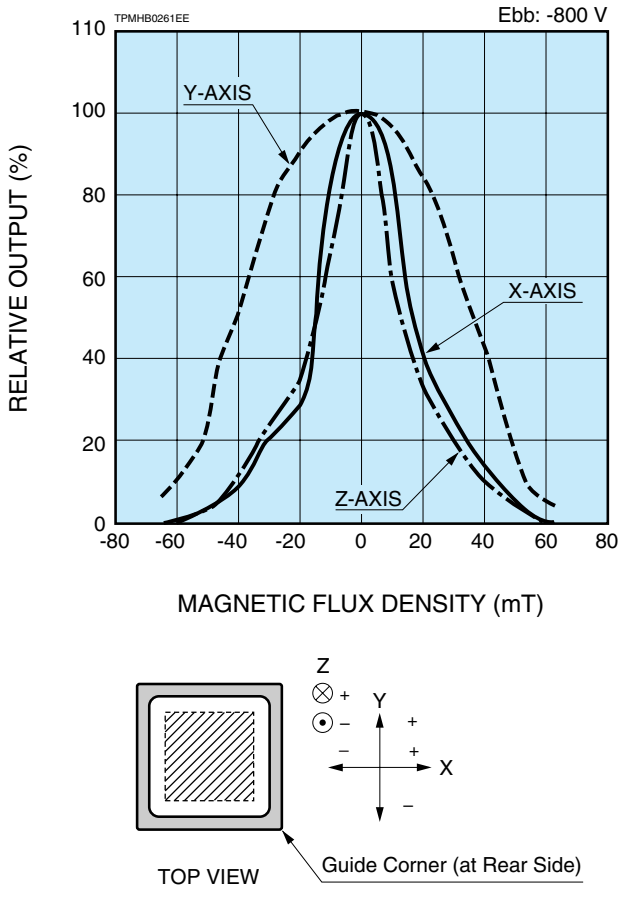
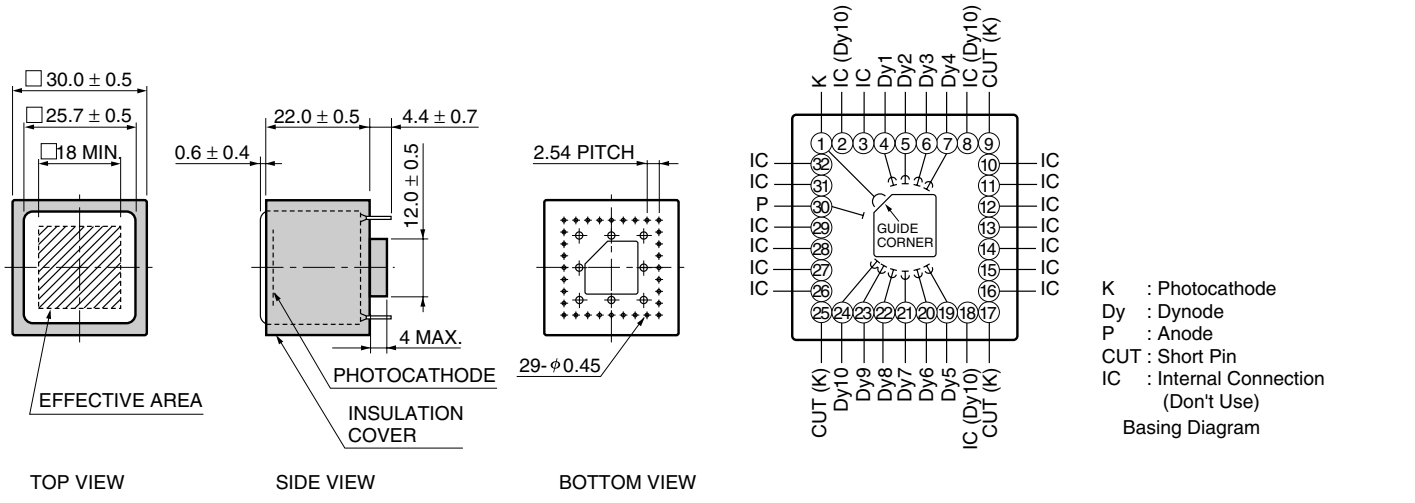


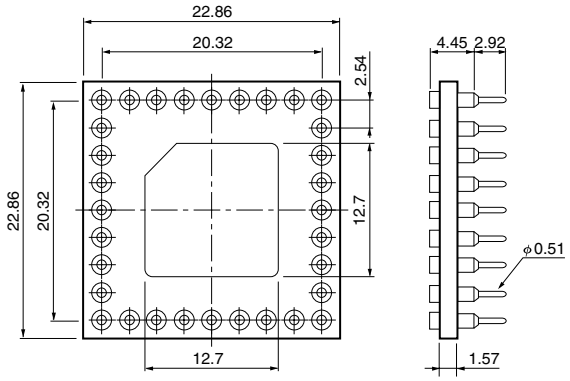
Figure 7: Dimensional Outline and Basing Diagram (Unit: mm)



TPMHA0278EI

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

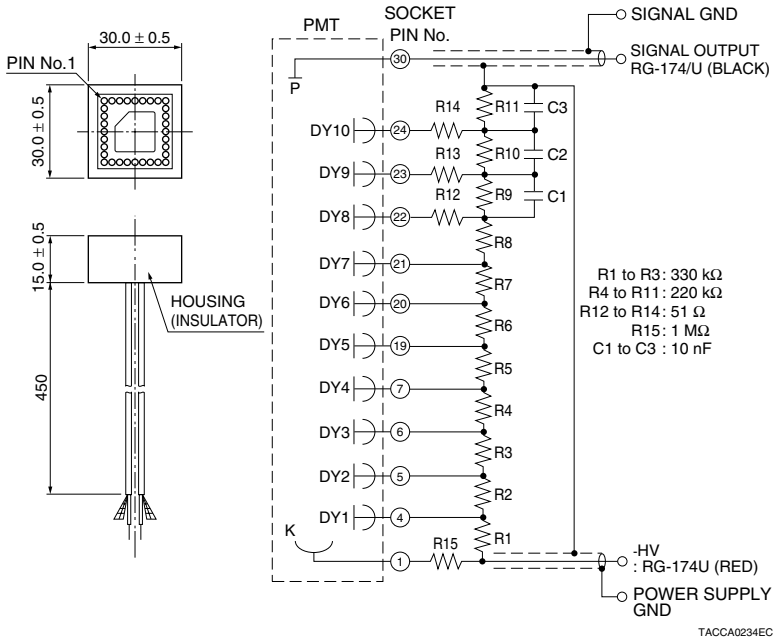
● Scoket E678-32B



MATERIAL: Glass Epoxy

TACCA0094ED

● D Type Scoket 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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