

## FEATURES

- Effective area: 18 mm × 18 mm
- High cathode sensitivity  
Luminous 200  $\mu\text{A}/\text{lm}$  Typ. (-01 type)  
Luminous 500  $\mu\text{A}/\text{lm}$  Typ. (-20 type)
- High speed response
- Wide dynamic range
- Compact
- Weight: Approx. 33 g

## APPLICATIONS

- High energy physics
- Flow cytometers (-01, -20 type)
- DNA sequencers (-01, -20 type)
- Pollution monitoring (NOx) (-01, -20 type)

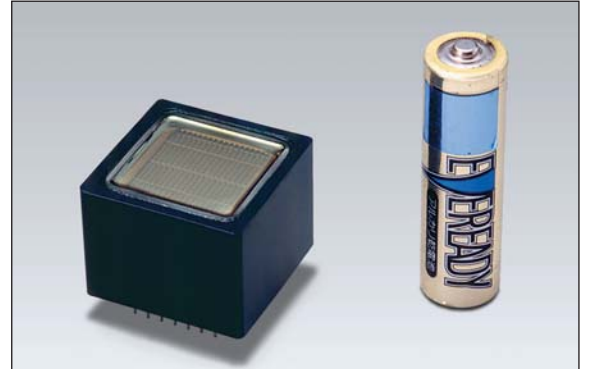
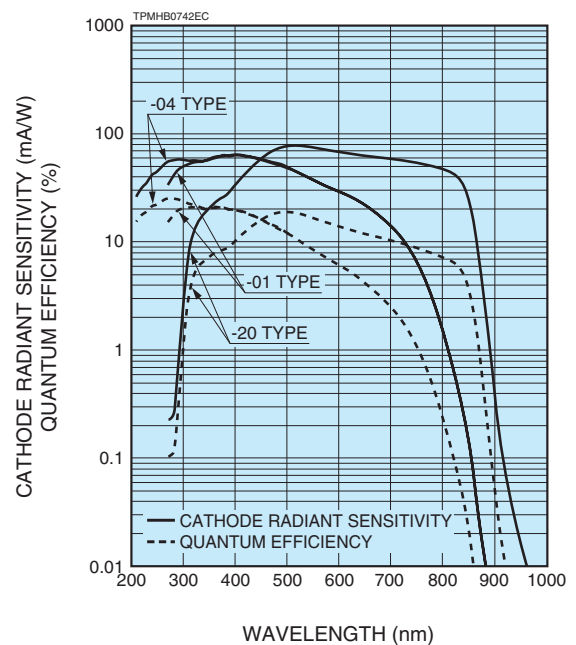
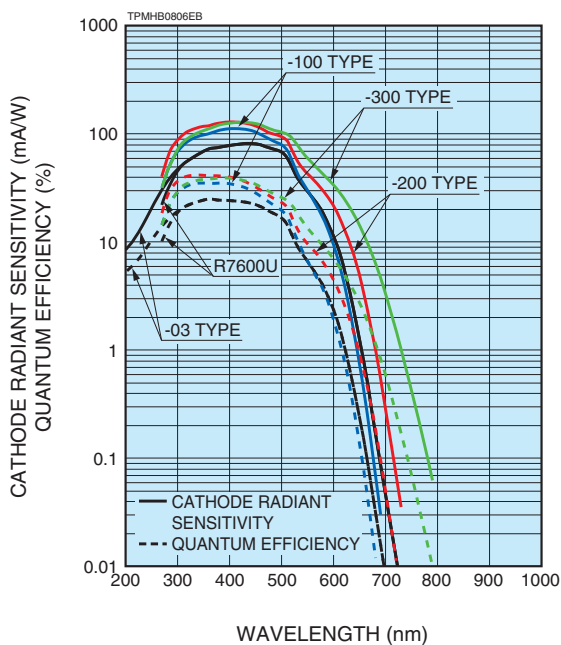


Figure 1: Typical spectral response



# PHOTOMULTIPLIER TUBES 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		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
R7600U-01	300 to 880	400	MA	K	MC/10	900	0.1	150	200	—	0.2	65
R7600U-03	185 to 650	420	BA	U	MC/10	900	0.1	60	80	9.5	—	80
R7600U-04	185 to 880	420	MA	U	MC/10	900	0.1	150	200	—	0.25	67
R7600U-20	300 to 920	530	ERMA	K	MC/10	900	0.1	350	500	—	0.4	78
R7600U-100	300 to 650	400	SBA	K	MC/10	900	0.1	90	105	13.5	—	110
R7600U-200	300 to 650	400	UBA	K	MC/10	900	0.1	110	135	15.5	—	130
R7600U-300	300 to 700	420	EGBA	K	MC/10	900	0.1	120	160	14.0	—	125

**NOTE:** (A) BA: Bialkali, MA: Multialkali, SBA: Super bialkali, UBA: Ultra bialkali, EGBA: Extended green bialkali, ERMA: Extended red multialkali  
 (B) K: Borosilicate glass, U: UV glass  
 (C) MC: Metal channel

Figure 2: Typical gain

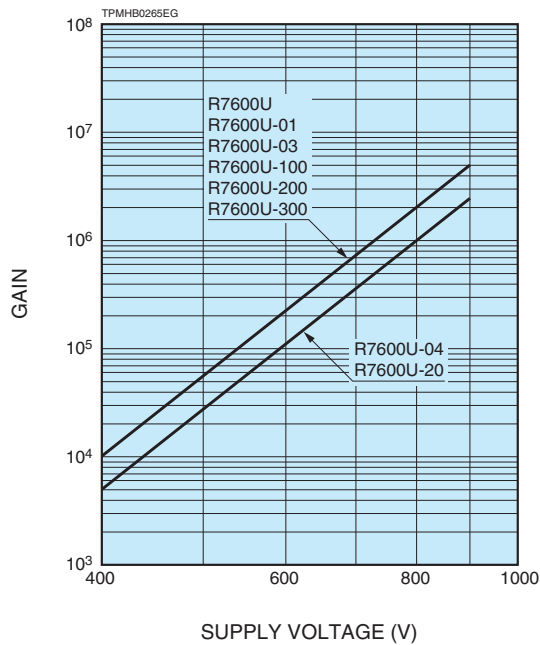


Figure 3: Time response (Example)

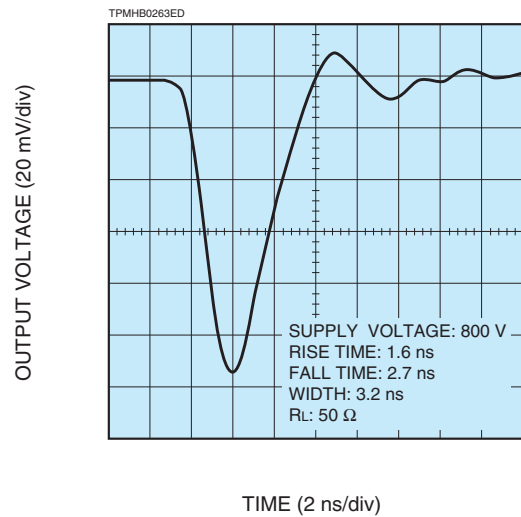
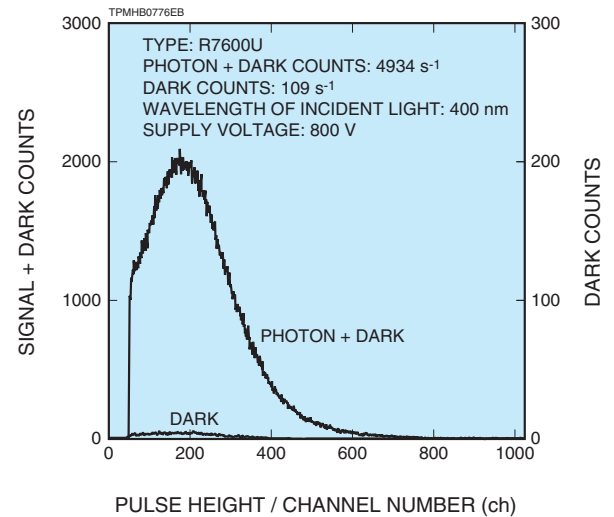


Figure 4: Single photon counting (Example)



Anode to cathode supply voltage (V)	Anode characteristics								Pulse linearity		Operating ambient temperature (°C)	Storage temperature (°C)	Type No.
	Luminous		Gain Typ.	Dark current (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.					
	Typ. (ns)	Typ. (ns)	Typ. (ns)										
800	40	160	$2.0 \times 10^6$	2	20	1.6 (1.7)	9.6 (9.7)	0.35 (0.36)	30 (100)	60 (220)	-30 to +50	-30 to +50	R7600U
800	50	400	$2.0 \times 10^6$	10	50								R7600U-01
800	40	160	$2.0 \times 10^6$	2	20								R7600U-03
800	50	200	$1.0 \times 10^6$	10	50								R7600U-04
800	100	500	$1.0 \times 10^6$	20	50								R7600U-20
800	40	210	$2.0 \times 10^6$	2	20								R7600U-100
800	50	270	$2.0 \times 10^6$	2	20								R7600U-200
800	80	320	$2.0 \times 10^6$	2	20								R7600U-300

( ): 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	P
Normal divider type	1.5	1.5	1.5	1	1	1	1	1	1	1	1	1
Tapered divider type	2	2	2	1	1	1	1	1	2	3	2	

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

Figure 5: T.T.S. characteristic (Example)

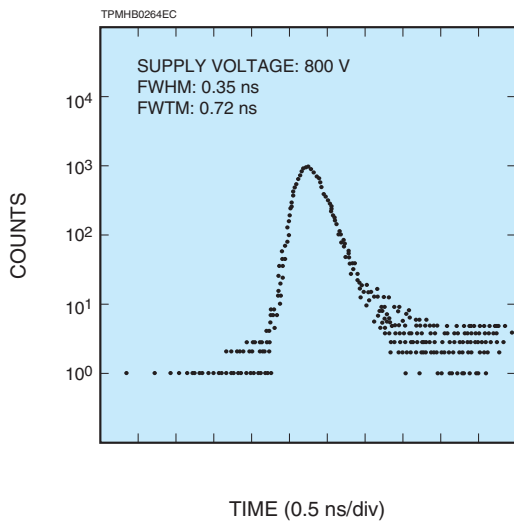
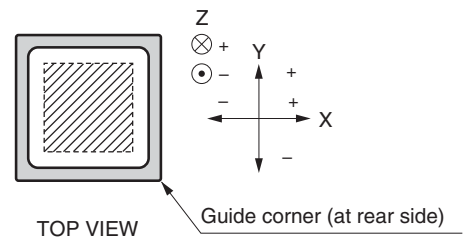
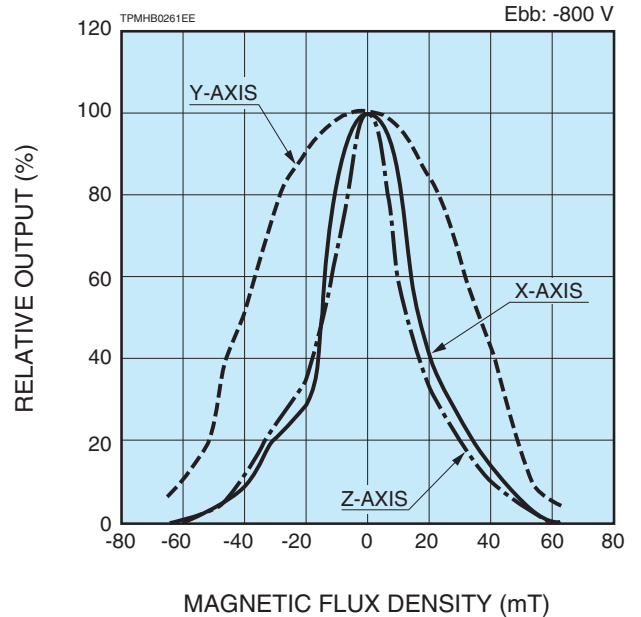
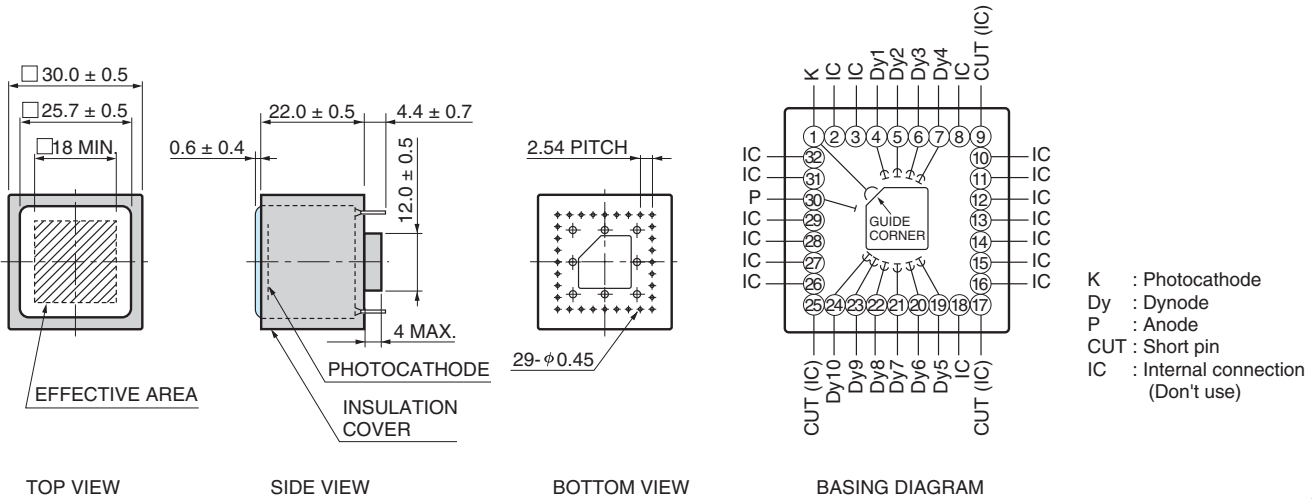


Figure 6: Effect of magnetic fields on anode output (Example)



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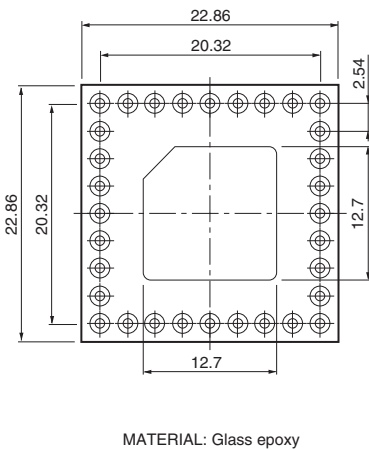
Figure 7: Dimensional outline and basing diagram (Unit: mm)



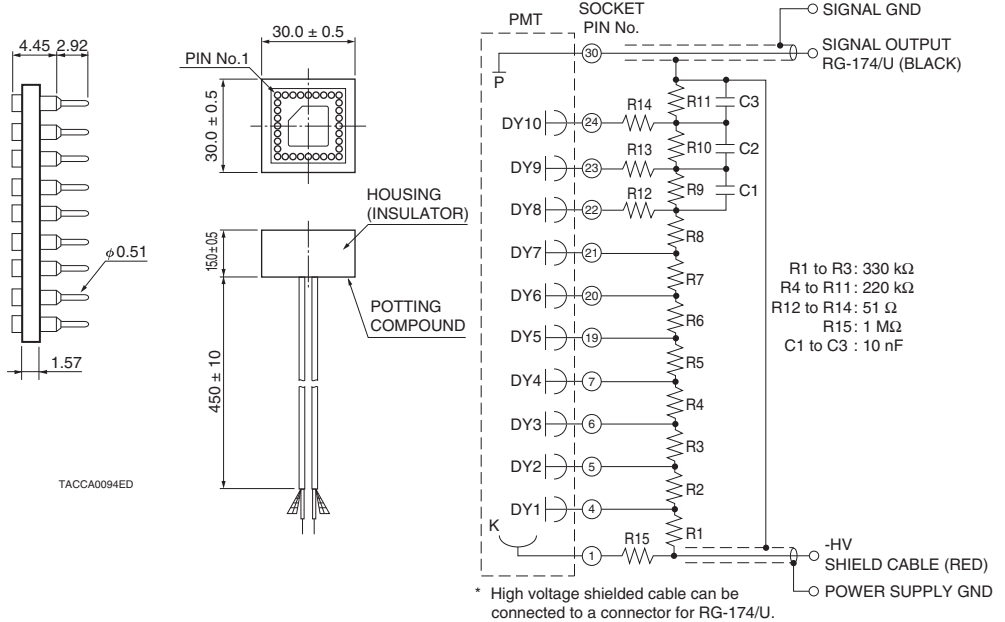
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**[ACCESSORIES] (Unit: mm) SOLD SEPARATELY**

● **Socket E678-32B**



● **D Type socket assembly E5996**



**⚠ 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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