

Fast Time Response, For High Energy Physics and Scintillation Counting (Especially for BaF₂ Scintillator)

GENERAL

Parameter		Description/Value	Unit
Spectral Response		160 to 650	nm
Wavelength of Maximum Response		420	nm
Photocathode	Material	Bialkali	—
	Minimum Effective Area	25	mm dia.
Window Material		Synthetic silica	—
Dynode	Structure	Linear focused	—
	Number of Stages	10	—
Base		14-pin glass base	—
Suitable Socket		E678-14C (supplied)	—

MAXIMUM RATINGS (Absolute Maximum Values)

Parameter		Value	Unit
Supply Voltage	Between Anode and Cathode	2000	Vdc
	Between Anode and Last Dynode	350	Vdc
Average Anode Current		0.2	mA
Ambient Temperature		-80 to +50	°C

CHARACTERISTICS (at 25 °C)

Parameter		Min.	Typ.	Max.	Unit
Cathode Sensitivity	Luminous (2856K)	60	95	—	μA/lm
	Radiant at 420nm	—	88	—	mA/W
	Blue (CS-5-58 filter)	—	11.0	—	μA/lm-b
Anode Sensitivity	Luminous (2856K)	—	190	—	A/lm
	Radiant at 420nm	—	1.8 × 10 ⁵	—	A/W
Gain		—	2 × 10 ⁶	—	—
Anode Dark Current (after 30 min. storage in darkness)		—	4	80	nA
Time Response	Anode Pulse Rise Time	—	1.7	—	ns
	Electron Transit Time	—	16	—	ns
	Transit Time Spread (FWHM)	—	500	—	ps
Pulse Linearity (at ±2 % deviation)		—	10 (100)	—	mA

NOTE: Anode characteristics are measured with the voltage distribution ratio A shown below.

() : Pulse linearity is measured with the voltage distribution ratio B shown below.

VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE

Electrodes	K	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	P
Ratio A	6	1	1.5	1	1	1	1	1	1	1	1	1
Ratio B (Tapered)	6	1	1.5	1	1	1	1.2	1.5	2	3.3	3	
Capacitors (μF)							0.01	0.02	0.02	0.04	0.06	

Supply Voltage: 1500 V dc, K: Cathode, Dy: Dynode, P: Anode

PHOTOMULTIPLIER TUBE R7057

Figure 1: Typical Spectral Response

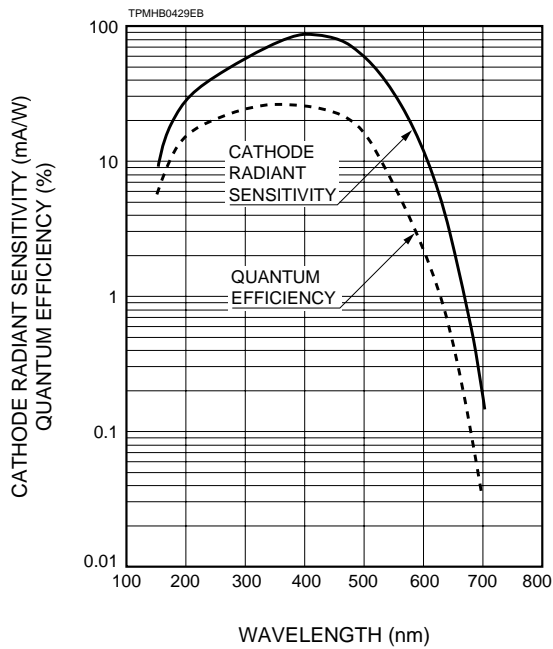


Figure 2: Typical Gain Characteristics

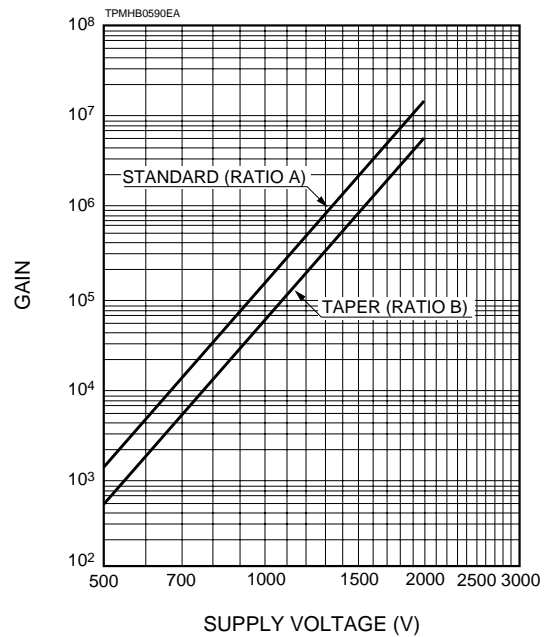
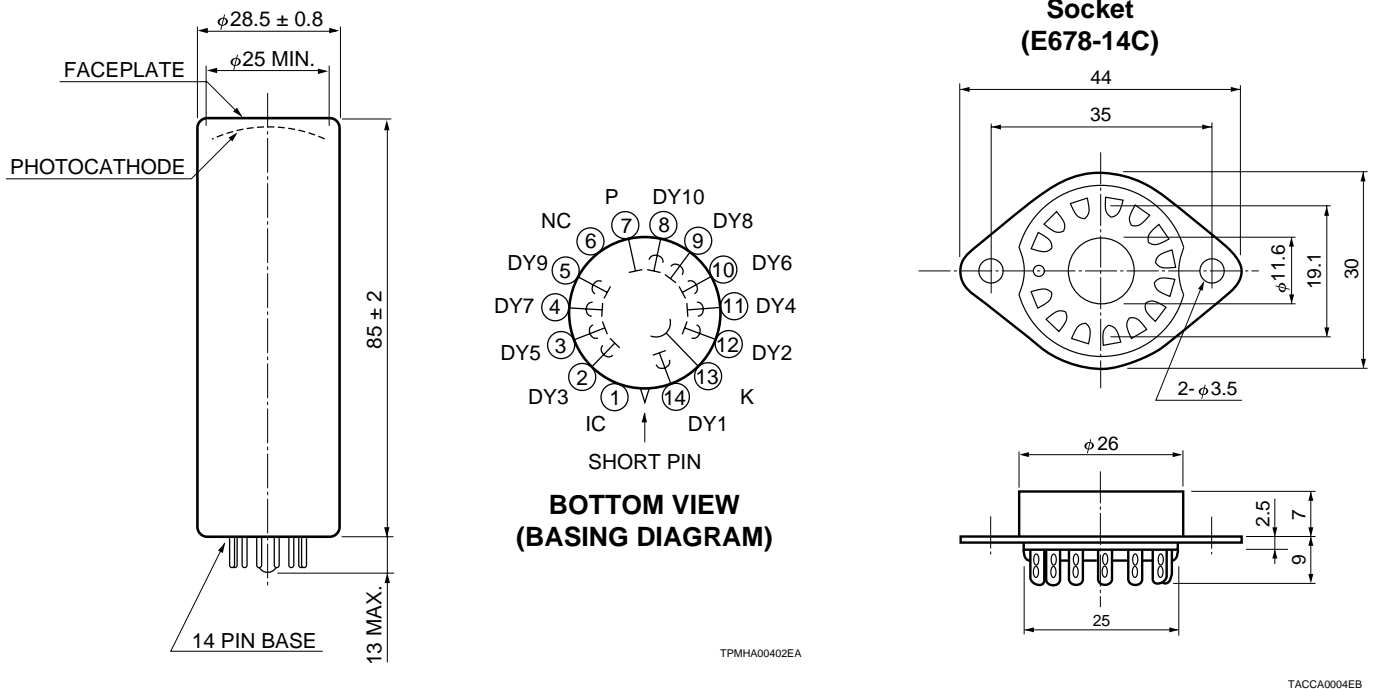


Figure 3: Dimensional Outline and Basing Diagram (Unit: mm)



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