HAMAMATSU

DUAL, RECTANGULAR PHOTOMULTIPLIER TUBE
R1548

For Scintillation Counting and Positron CT Applications
10-Stage Dual Structure in a Rectangular Envelope
High Time Resolution, Good Coupling to Rectangular BGO
Good Space Utilization, Low Cross Talk

GENERAL

Parameter		Description/Value	Unit
Spectral Response		300 to 650	nm
Wavelength of Maximum Response		420	nm
Photocathode	Material	Bialkali	—
	Minimum Useful Size	(8 × 18) × 2 (dual)	mm dia.
Window Material		Borosilicate glass	—
Dynode	Structure	Linear focused	—
	Number of Stages	10 × 2 (dual)	—
Base		17-pin glass base	—
Suitable Socket		E678-17A (supplied)	—

MAXIMUM RATINGS (Absolute Maximum Values)

Parameter		Value	Unit
Supply Voltage	Between Anode and Cathode	1750	Vdc
	Between Anode and Last Dynode	250	Vdc
Average Anode Current		0.1	mA
Ambient Temperature		-80 to +50	°C

CHARACTERISTICS (at 25°C)

Parameter		Min.	Typ.	Max.	Unit
Cathode Sensitivity	Luminous (2856K)	—	80	—	μA/lm
	Blue (with CS 5-58 filter)	—	9.5	—	μA/lm-b
	Quantum Efficiency at 480nm	—	23	—	%
Anode Sensitivity	Luminous (2856K)	—	200	—	A/lm
	Blue (with CS No. 5-58 filter)	—	24	—	A/lm-b
Gain		—	2.5×10^6	—	—
Anode Dark Current		—	20	250	nA
Time Response	Anode Pulse Rise Time	—	1.8	—	ns
	Electron Transit Time	—	20	—	ns
	Transit Time Spread	—	1.0	—	ns
Energy Resolution for 511keV γ-ray with BGO		—	20	—	%
BGO Time Resolution (BGO-Plastic)	FWHM	—	2.4	—	ns
	FWTM	—	4.8	—	ns
Gain Ratio (one segment to another)		0.5	1	2	—

VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE

Electrodes	K	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	P
Ratio	4	1	1.5	1	1	1	1	1	1	1	1	

Supply Voltage: 1250Vdc, K: Cathode, Dy: Dynode, P: Anode

NOTE: The gain of each segment can be controlled within 1 to 0.3 by adjusting independent dynode (7th dynode) potential.

PHOTOMULTIPLIER TUBE R1548

Figure 1: Typical Spectral Response

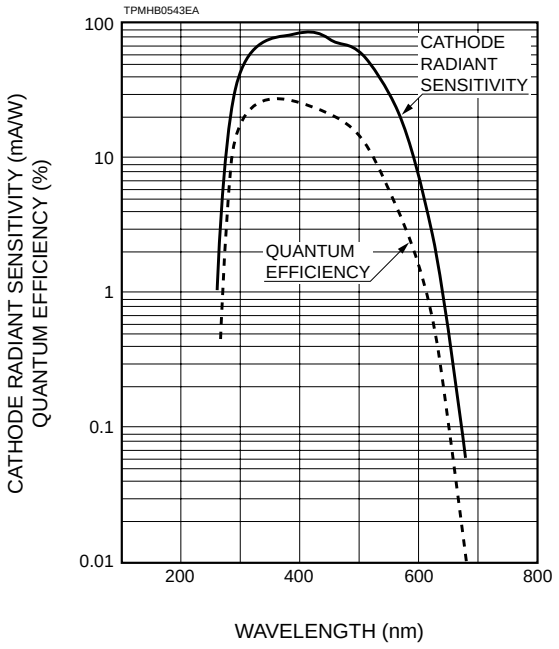


Figure 2: Typical Gain Characteristics

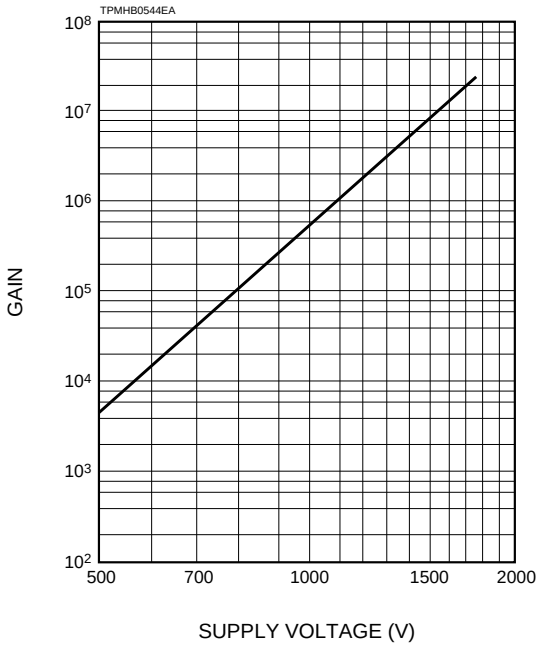
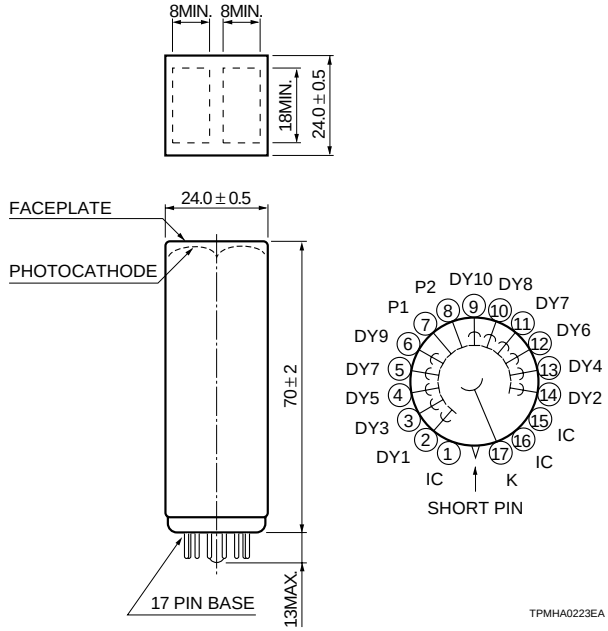
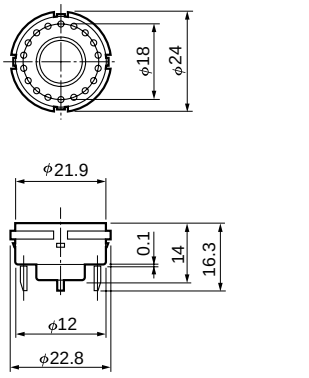


Figure 3: Dimensional Outline and Basing Diagram (Unit: mm)



Socket (E678-17A)



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