

HAMAMATSU

PHOTOMULTIPLIER TUBE R2083

For Scintillation Counting and High Energy Physics
51mm (2 Inch) Diameter, Subnanosecond Time Response ($T_r = 0.7\text{ns}$)
8-Stage, Bialkali Photocathode

GENERAL

Parameter		Description/Value	Unit
Spectral Response		300 to 650	nm
Wavelength of Maximum Response		420	nm
Photocathode	Material	Bialkali	—
	Minimum Useful Diameter	46	mm dia.
Window Material		Borosilicate glass	—
Dynode	Structure	Linear focused	—
	Number of Stages	8	—
Base		19-pin glass base with SMA output connector	—
Socket		E678-19C	—

MAXIMUM RATINGS (Absolute Maximum Values)

Parameter		Value	Unit
Supply Voltage	Between Anode and Cathode	3500	Vdc
	Between Anode and Last Dynode	1000	Vdc
Average Anode Current		0.2	mA
Ambient Temperature		-30 to +50	°C

CHARACTERISTICS (at 25°C)

Parameter		Min.	Typ.	Max.	Unit
Anode Sensitivity	Luminous (2856K)	50	200	—	A/lm
	Luminous (2856K)	60	80	—	μA/lm
Cathode Sensitivity	Radiant at 420nm	—	80	—	mA/W
	Blue (CS 5-58 filter)	—	10.0	—	μA/lm-b
Gain		—	2.5×10^6	—	—
Anode Dark Current (after 30 min. storage in darkness)		—	100	800	nA
Time Response	Anode Pulse Rise Time	—	0.7	—	ns
	Electron Transit Time	—	16	—	ns
	Transmit Time Spread	—	0.37	—	ns
Pulse Linearity at 2% Deviation		—	100	—	mA

VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE

Electrodes	K	G	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Acc	Dy7	Dy8	P
Ratio	1.3	4.8	1.2	1.8	1	1	1	1	0.5	3	2.5	

Supply Voltage: 3000Vdc, K: Cathode, Dy: Dynode, P: Anode, G: Grid

Acc to be connected to Dy7.



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Figure 1: Typical Spectral Response

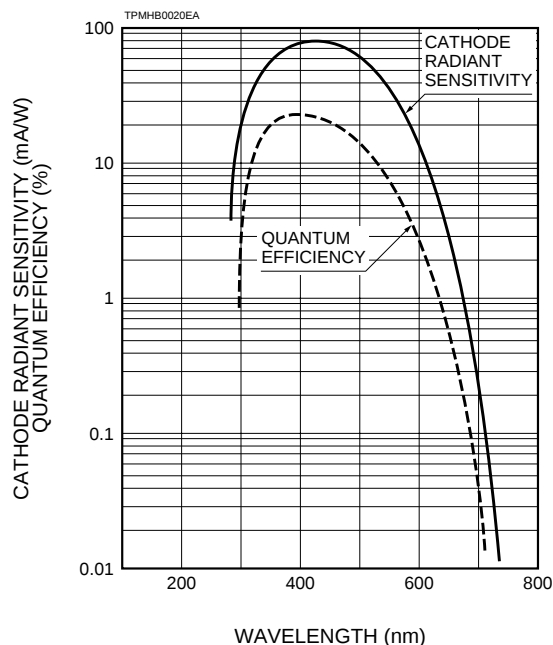


Figure 2: Typical Gain Characteristics

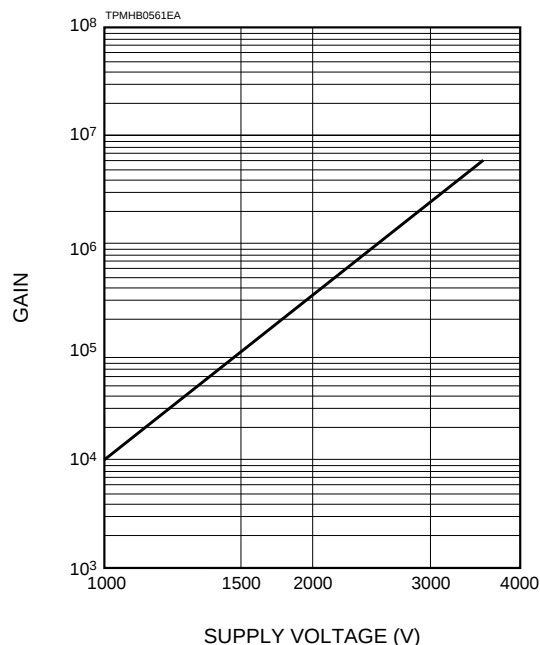
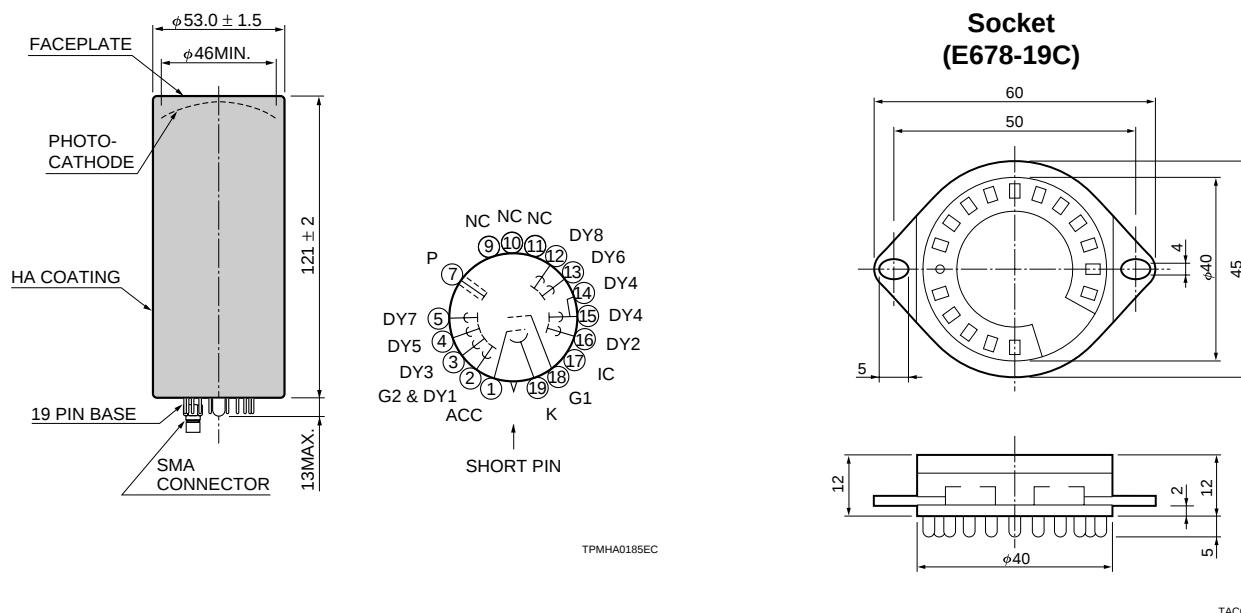


Figure 3: Dimensional Outline and Basing Diagram (Unit: mm)



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