HAMAMATSU

PHOTOMULTIPLIER TUBES
R2154-02

For Scintillation Counting and High Energy Physics
51 mm (2 Inch) Diameter, Fast Time Response,
Bialkali Photocathode, 10–stage, Head–on Type

GENERAL

Parameter		Description/Value	Unit
Spectral Response		300 to 650	nm
Wavelength of Maximum Response		420	nm
Photocathode	Material	Bialkali	—
	Minimum Effective Area	ϕ46	mm
Window Material		Borosilicate glass	—
Dynode	Structure	Linear focused	—
	Number of Stages	10	—
Base		14–pin base JEDEC No. B14–38	—
Operating Ambient Temperature		-30 to +50	°C
Storage Temperature		-30 to +50	°C
Suitable Socket		E678–14W (Sold Separately)	—

MAXIMUM RATINGS (Absolute Maximum Values)

Parameter		Value	Unit
Supply Voltage	Between Anode and Cathode	1600	V
	Between Anode and Last Dynode	350	V
Average Anode Current		0.1	mA

CHARACTERISTICS (at 25 °C)

Parameter		Min.	Typ.	Max.	Unit
Cathode Sensitivity	Luminous (2856 K)	60	90	—	µA/lm
	Blue Sensitivity Index (CS 5–58)	—	10.5	—	—
	Radiant at 420 nm	—	85	—	mA/W
	Quantum Efficiency at 420 nm	—	26	—	%
Anode Sensitivity	Luminous (2856 K)	20	90	—	A/W
	Radiant at 420 nm	—	8.5×10^4	—	A/W
Gain		—	1.0×10^6	—	—
Anode Dark Current (after 30 minutes storage in darkness)		—	5	20	nA
Time Response	Anode Pulse Rise Time	—	3.4	—	ns
	Transit Time Spread (FWHM)	—	3.6	—	ns
Pulse Linearity (at ± 2 % Deviation)*		—	150	—	mA

NOTE: Anode characteristics are measured with the voltage distribution ratio "A" except for Pulse Linearity.
* Measured with the special voltage distribution ratio "B".

VOLTAGE DISTRIBUTION RATIO "A"

Electrodes	K	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	P
Ratio	2	1	1	1	1	1	1	1	1	1	1	1

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

SPECIAL VOLTAGE DISTRIBUTION RATIO "B" FOR HIGH PULSE LINEARITY

Electrodes	K	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	P
Ratio	2	1	1	1	1	1	1.2	1.5	2.2	3.6	3	
Capacitors(µF)	—	—	—	—	—	—	0.01	0.01	0.01	0.01	0.02	

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

PHOTOMULTIPLIER TUBE R2154–02

Figure 1: Typical Spectral Response

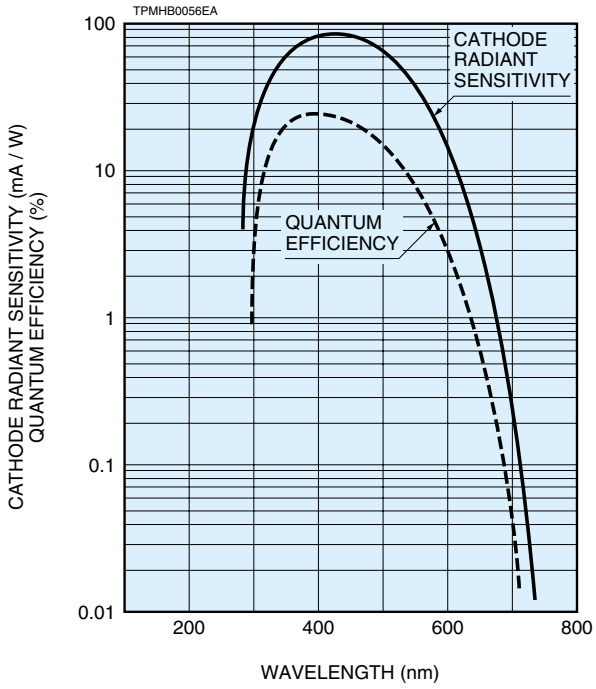


Figure 2: Typical Gain Characteristics

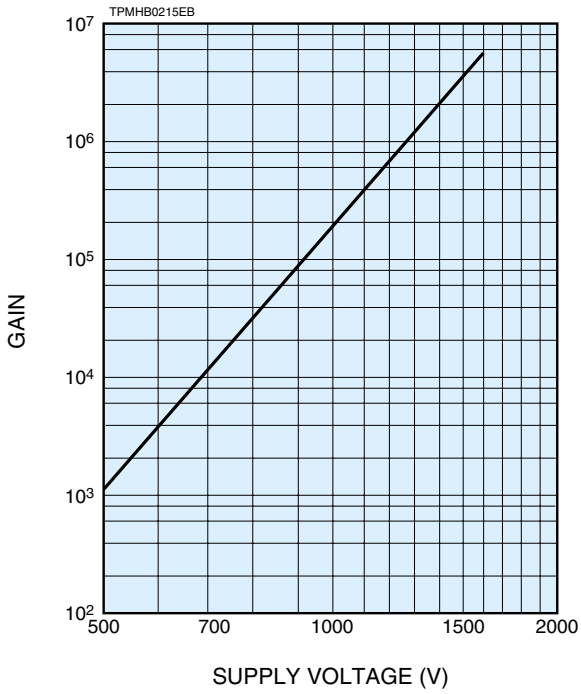
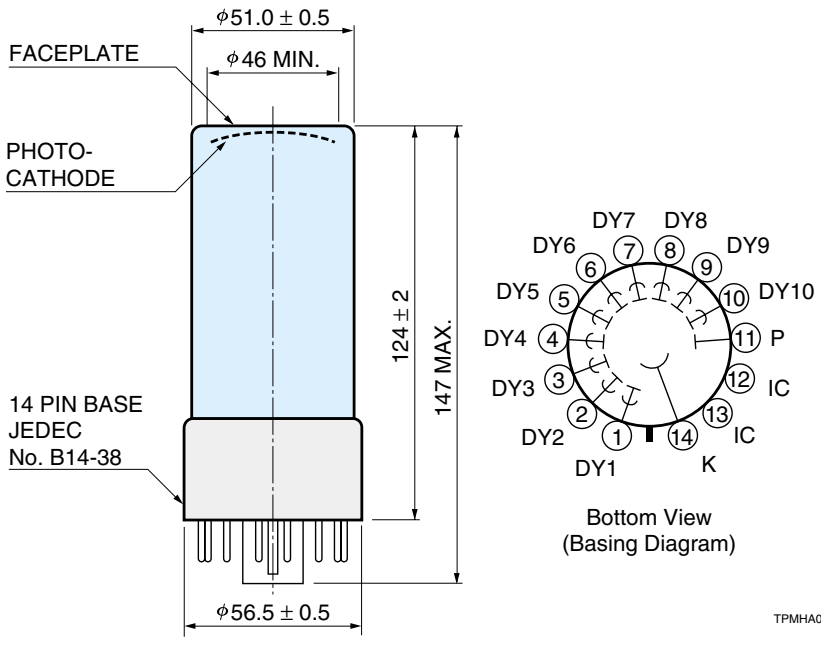
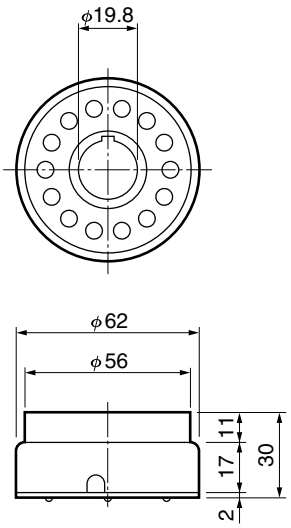


Figure 3: Dimensional Outline and Basing Diagram (Unit: mm)



Socket E678-14W
(Sold Separately)



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TPMH1089E05
JUL. 2006 IP