

**For High Energy Physics, Fast Time Response, High Pulse Linearity
127mm (5 Inch) Diameter, Bialkali Photocathode, 14-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 Useful Diameter	120	mm dia.
Window	Material	Borosilicate glass	—
Dynode	Structure	Linear focused	—
	Number of Stages	14	—
Base		20-pin base	—
Suitable Socket		E678-20A (supplied)	—

MAXIMUM RATINGS (Absolute Maximum Values)

Parameter		Value	Unit
Supply Voltage	Between Anode and Cathode	3000	Vdc
	Between Anode and Last Dynode	500	Vdc
Average Anode Current		0.2	mA
Ambient Temperature		-30 to +50	°C

CHARACTERISTICS (at 25°C)

Parameter		Min.	Typ.	Max.	Unit
Cathode Sensitivity	Luminous (2856K)	55	70	—	μA/lm
	Blue (with CS 5-58 filter)	7.0	9.0	—	μA/lm-b
	Quantum Efficiency at 390nm	—	22	—	%
Anode Sensitivity	Luminous (2856K)	300	1000	—	A/lm
	Blue (with CS 5-58 filter)	—	130	—	A/lm-b
Gain		—	1.4×10^7	—	—
Anode Dark Current (after 30min. storage in darkness)		—	50	300	nA
Time Response	Anode Pulse Rise Time	—	2.5	—	ns
	Electron Transit Time	—	54	—	ns
	Transit Time Spread	—	1.2	—	ns
Pulse Height Resolution with ¹³⁷ Cs		—	8.3	—	%
Gain Deviation	Long Term	—	1.0	—	%
	Short Term	—	1.0	—	%
Pulse Linearity *	2% Deviation	—	160	—	%
	5% Deviation	—	250	—	%

* Measured with special voltage distribution ratios shown in the Table 2.

Table 1: VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE

Electrode	K	G1	G2	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	Dy11	Dy12	Dy13	Dy14	P
Ratio	2.5	7.5	0	1.2	1.8	1	1	1	1	1	1	1	1	1	1.5	1.5	3	2.5

Supply Voltage: 2000Vdc, K: Cathode, Dy: Dynode, P: Anode, G: Grid

**Table 2: SPECIAL VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE
FOR PULSE LINEARITY MEASUREMENT**

Electrode	K	G1	G2	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	Dy11	Dy12	Dy13	Dy14	P
Ratio	2.5	7.5	0	1.2	1.8	1	1	1	1	1.2	1.5	2	2.8	4	5.7	8	5	
Capacitors in μF												0.01	0.01	0.02	0.02	0.02	0.04	0.06

Supply Voltage: 2500Vdc, K: Cathode, Dy: Dynode, P: Anode, G: Grid

Subject to local technical requirements and regulations, availability of products included in this promotional material may vary. Please consult with our sales office. Information furnished by HAMAMATSU is believed to be reliable. However, no responsibility is assumed for possible inaccuracies or omissions. Specifications are subject to change without notice. No patent rights are granted to any of the circuits described herein. © 1999 Hamamatsu Photonics K.K.

PHOTOMULTIPLIER TUBE R1250

Figure 1: Typical Spectral Response

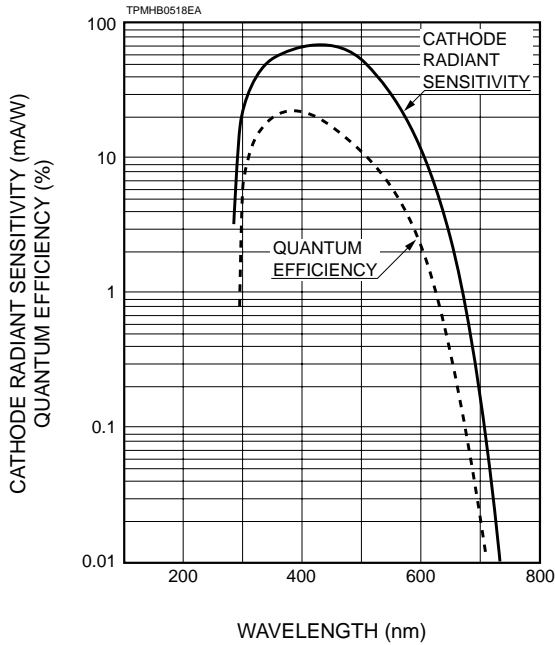


Figure 2: Typical Gain Characteristics

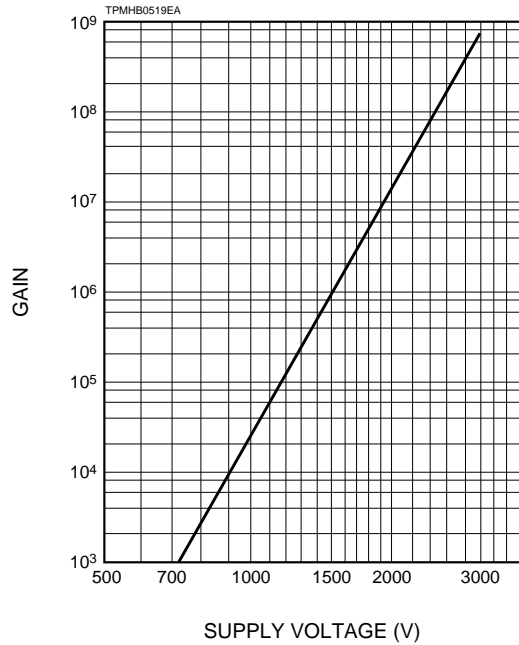
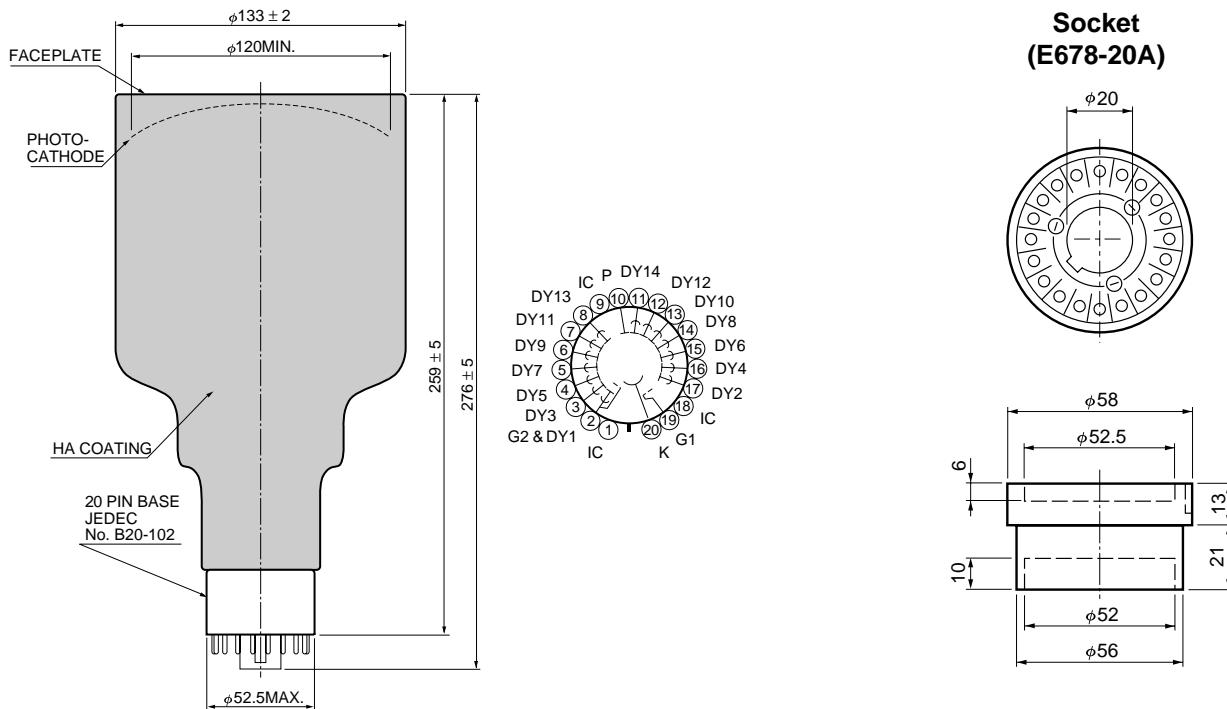


Figure 3: Dimensional Outline and Basing Diagram (Unit: mm)



TPMHA0018EA

TACCA0003EA

HAMAMATSU

HOME PAGE URL <http://www.hamamatsu.com>

HAMAMATSU PHOTONICS K.K., Electron Tube Center

314-5, Shimokanzo, Toyooka-village, Iwata-gun, Shizuoka-ken, 438-0193, Japan, Telephone: (81)539/62-5248, Fax: (81)539/62-2205

U.S.A.: Hamamatsu Corporation: 360 Foothill Road, P. O. Box 6910, Bridgewater, N.J. 08807-0910, U.S.A., Telephone: (1)908-231-0960, Fax: (1)908-231-1218

Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49)8152-375-0, Fax: (49)8152-2658

France: Hamamatsu Photonics France S.A.R.L.: 8, Rue du Saule Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: (33)1 69 53 71 00, Fax: (33)1 69 53 71 10

United Kingdom: Hamamatsu Photonics UK Limited: Lough Point, 2 Gladbeck Way, Windmill Hill, Enfield, Middlesex EN2 7JA, United Kingdom, Telephone: 44(20)8-367-3560, Fax: 44(20)8-367-6384

North Europe: Hamamatsu Photonics Norden AB: Smidesvägen 12, SE-171-41 SOLNA, Sweden, Telephone: (46)8-509-031-00, Fax: (46)8-509-031-01

Italy: Hamamatsu Photonics Italia: S.R.L.: Strada della Moia, 1/E, 20020 Arese, (Milano), Italy, Telephone: (39)02-935 81 733, Fax: (39)02-935 81 741

TPMH1213E02
DEC. 1999