

## For Scintillation Counting and High Energy Physics

38mm(1-1/2 Inch) Diameter, 10-stage, Bialkali Photocathode, 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	34	mm dia.
Window Material		Borosilicate glass	–
Dynode	Structure	Linear focused	–
	Number of Stages	10	–
Direct Interelectrode	Anode to Last Dynode	3	pF
Capacitances	Anode to All Other Electrodes	7	pF
Base		JEDEC No.B12-43	–
Suitable Socket		E678-12A(supplied)	–

### MAXIMUM RATINGS (Absolute Maximum Values)

Parameter		Value	Unit
Supply Voltage	Between Anode and Cathode	1750	Vdc
	Between Anode and Last Dynode	350	Vdc
Average Anode Current		0.1	mA
Ambient Temperature		-30 to +50	°C

### CHARACTERISTICS (at 25°C)

Parameter		Min.	Typ.	Max.	Unit
Cathode Sensitivity	Luminous (2856K)	70	90	–	μA/lm
	Radiant at 420nm	–	88	–	mA/W
	Blue (CS 5-58 filter)	9	11	–	μA/lm-b
	Quantum Efficiency at 420nm	–	27	–	%
Anode Sensitivity	Luminous (2856K)	10	100	–	A/lm
Gain		–	1.1 × 10 <sup>6</sup>	–	–
Anode Dark Current (after 30min. storage in darkness)		–	3	20	nA
Time Response	Anode Pulse Rise Time	–	2.7	–	ns
	Electron Transit Time	–	37	–	ns
	Transit Time Spread (FWHM)	–	4.5	–	ns
Pulse Linearity (± 2% deviation)		–	150	–	mA

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

### VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE

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

### SPECIAL VOLTAGE DISTRIBUTION RATIO FOR PULSE LINEARITY MEASUREMENT

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	
Parallel Capacitors in μF									0.01	0.02	0.04	0.06

Supply Voltage : 1500Vdc

# PHOTOMULTIPLIER TUBE R580

Figure 1: Typical Spectral Response

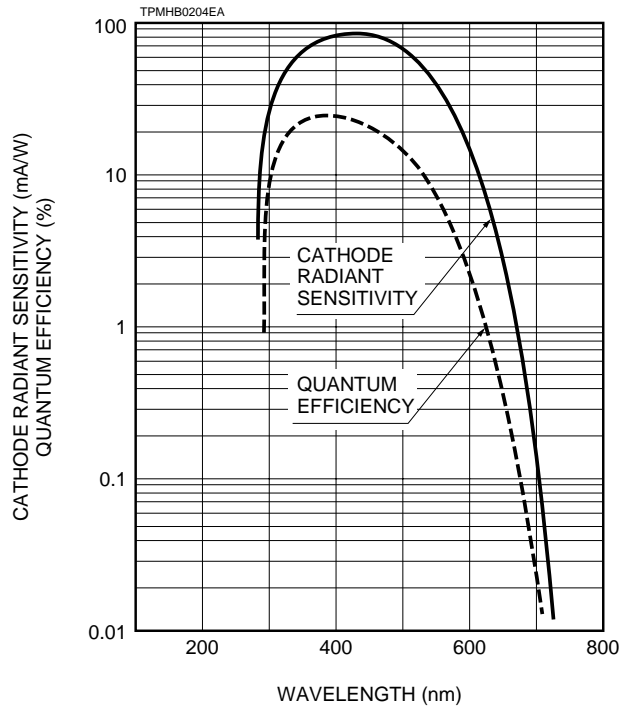
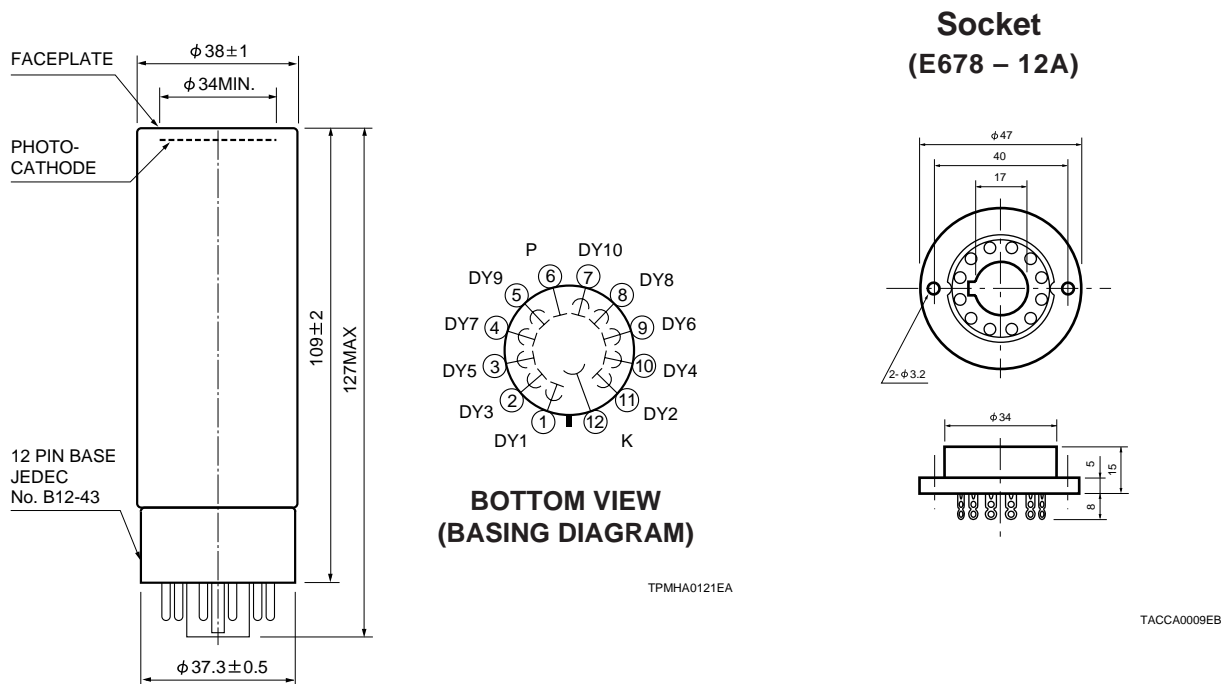


Figure 2: Dimensional Outline and Basing Diagram (Unit:mm)



# 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 00

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

TPMH1100E02  
DEC. 1999