HAMAMATSU

PHOTON IS OUR BUSINESS

PHOTOMULTIPLIER TUBE
R1828-01, R2059

FEATURES

- **Fast time response**
- **51 mm (2 inch) diameter**
- **Bialkali photocathode**

SPECIFICATIONS

GENERAL

Parameter		Description / Value	Unit
Spectral response	R1828-01	300 to 650	nm
	R2059	160 to 650	nm
Wavelength of maximum response		420	nm
Photocathode	Material	Bialkali	—
	Minimum effective area	ϕ46	mm
Window material	R1828-01	Borosilicate glass	—
	R2059	Silica glass	—
Dynode	Structure	Linear focused	—
	Number of stages	12	—
Operating ambient temperature		-30 to +50	°C
Storage temperature		-30 to +50	°C
Base		JEDEC No. B20-102	—
Suitable socket		E678-20B (supplied)	—

MAXIMUM RATINGS (Absolute maximum values)

Parameter		Value	Unit
Supply voltage	Between anode and cathode	3000	V
	Between anode and last dynode	400	V
Average anode current		0.2	mA

CHARACTERISTICS (at 25 °C)

Parameter		Min.	Typ.	Max.	Unit
Cathode sensitivity	Luminous (2856 K)	60	90	—	μA/lm
	Radiant at 420 nm	—	85	—	mA/W
	Blue sensitivity index (CS 5-58)	—	10.5	—	—
Anode sensitivity	Luminous (2856 K)	200	1800	—	A/lm
	Radiant at 420 nm	—	1.7×10^6	—	A/W
Gain		—	2.0×10^7	—	—
Anode dark current (after 30 min storage in darkness)		—	50	400	nA
Time response	Anode pulse rise time	—	1.3	—	ns
	Electron transit time	—	28	—	ns
	Transit time spread (FWHM)	—	550	—	ps
Pulse linearity *	at 2 % deviation	—	250	—	mA
	at 5 % deviation	—	500	—	mA

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

VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE

Electrodes	K	G	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	Dy11	Dy12	P
Ratio	1.2	2.8	1.2	1.8	1	1	1	1	1	1	1.5	1.5	3	2.5	

Supply voltage: 2500 V, K: Cathode, Dy: Dynode, P: Anode, G: Grid

SPECIAL VOLTAGE DISTRIBUTION RATIO FOR PULSE LINEARITY MEASUREMENTS

Electrodes	K	G	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	Dy11	Dy12	P
Ratio	1.2	2.8	1.2	1.8	1	1	1.2	1.5	2	2.8	4	5.7	8	5	

Supply voltage: 2500 V, K: Cathode, Dy: Dynode, P: Anode, G: Grid

PHOTOMULTIPLIER TUBE R1828-01, R2059

Figure 1: Typical spectral response

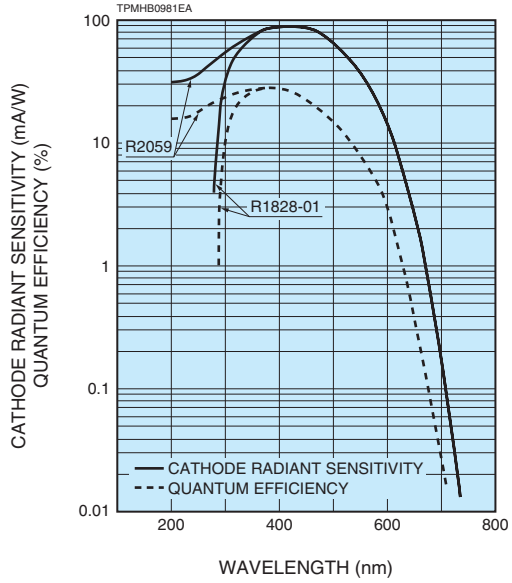


Figure 2: Typical gain characteristics

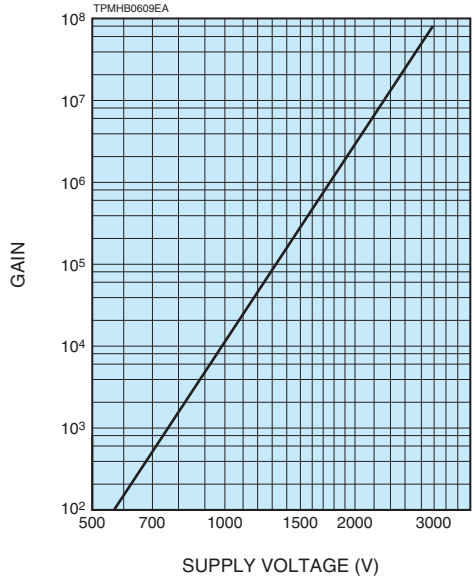
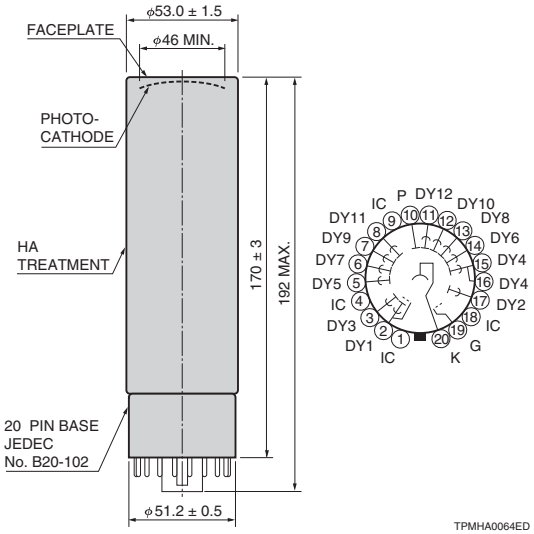
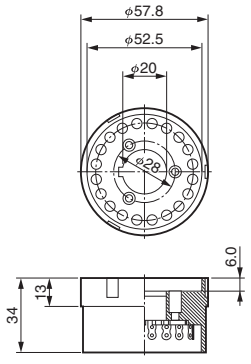


Figure 3: Dimensional outline and basing diagram (Unit: mm)

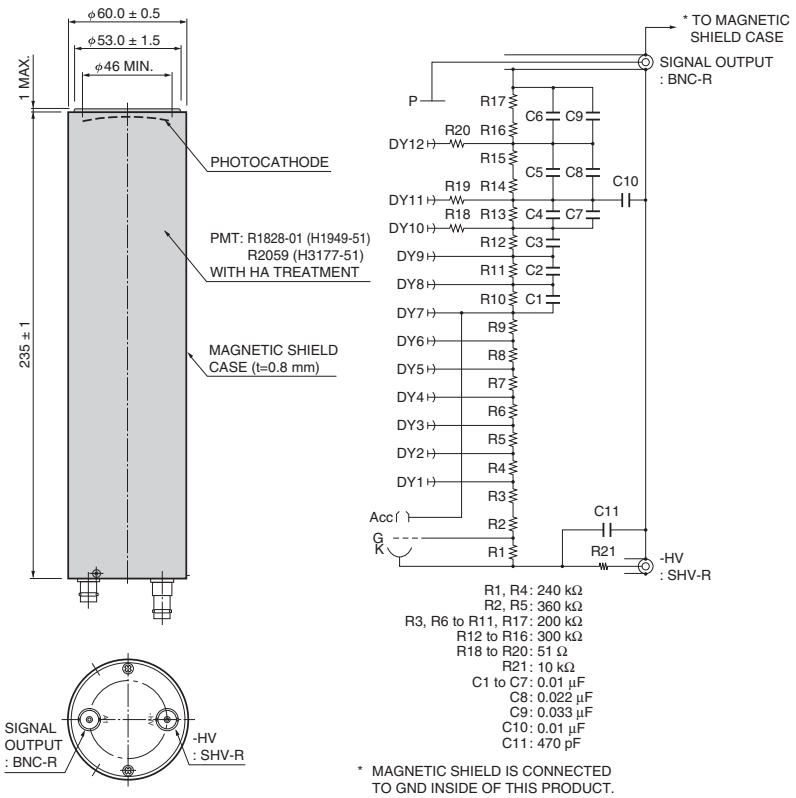


Socket E678-20B (Supplied)



RELATED PRODUCTS

PHOTOMULTIPLIER TUBE ASSEMBLY H1949-51/ H3177-51



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