

### High-speed Photon Counting and Fluorescence Measurement 51mm(2 Inch) Diameter, 12-stage, Head-on Type R3234-01: Borosilicate Window (300 to 650nm) R3235-01: Synthetic Silica Window (160 to 650nm)

#### GENERAL

Parameter		Description/Value	Unit
Spectral Response	R3234-01	300 to 650	nm
	R3235-01	160 to 650	nm
Wavelength of Maximum Response		420	nm
Photocathode	Material	Bialkali	—
	Minimum Effective Area	10	mm dia.
Window Material	R3234-01	Borosilicate glass	—
	R3235-01	Synthetic silica glass	—
Dynode	Structure	Linear focused	—
	Number of Stages	12	—
Base		20-pin base (JEDEC No. B20-102)	—
Suitable Socket		E678-20A (supplied)	—

#### MAXIMUM RATINGS (Absolute Maximum Values)

Parameter		Value	Unit
Supply Voltage	Between Anode and Cathode	2500	Vdc
	Between Anode and Last Dynode	500	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)	60	80	—	μ A/lm
	Radiant at 420nm	—	72	—	mA/W
	Blue (CS-5-58 filter)	—	9.0	—	μ A/lm-b
Anode Sensitivity	Luminous (2856K)	500	2000	—	A/lm
	Radiant at 420nm	—	2.0 × 10 <sup>6</sup>	—	A/W
Gain		—	2.5 × 10 <sup>7</sup>	—	—
Anode Dark Current (after 30min. storage in darkness)		—	1	10	nA
Anode Dark Counts		—	50	150	cps
Time Response	Anode Pulse Rise Time	—	1.3	—	ns
	Electron Transit Time	—	28	—	ns
	Transit Time Spread (FWHM)	—	0.45	—	ns

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

#### VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE

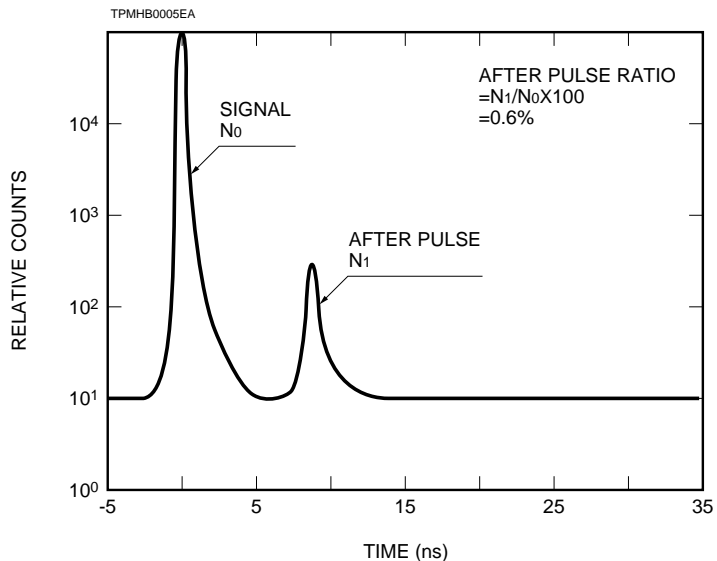
Electrodes	K	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	Dy11	Dy12	P
Ratio	4	1.2	1.8	1	1	1	1	1	1	1	1	1	1	

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

# PHOTOMULTIPLIER TUBES R3234-01, R3235-01

Figure 1: Typical Pulse Generation Characteristics

A) For R3234-01, R3235-01



B) For Conventional Type

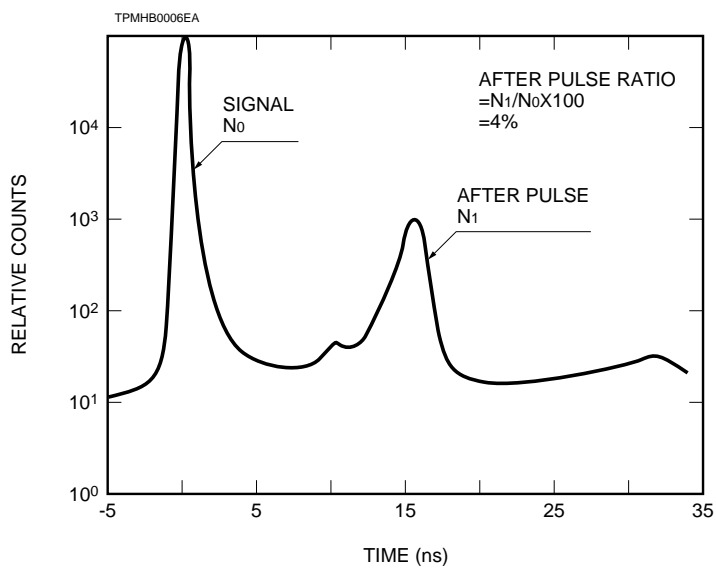


Figure 2: Typical Spectral Response

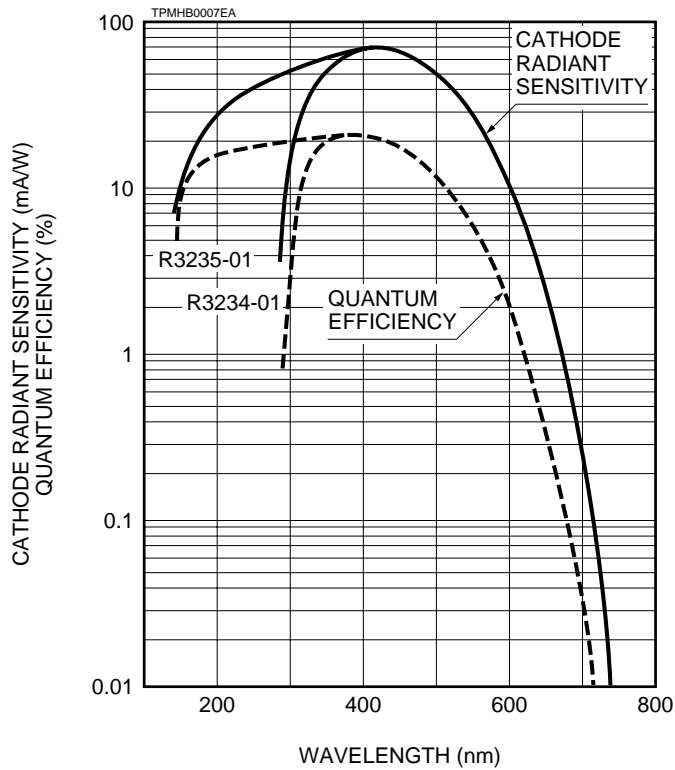
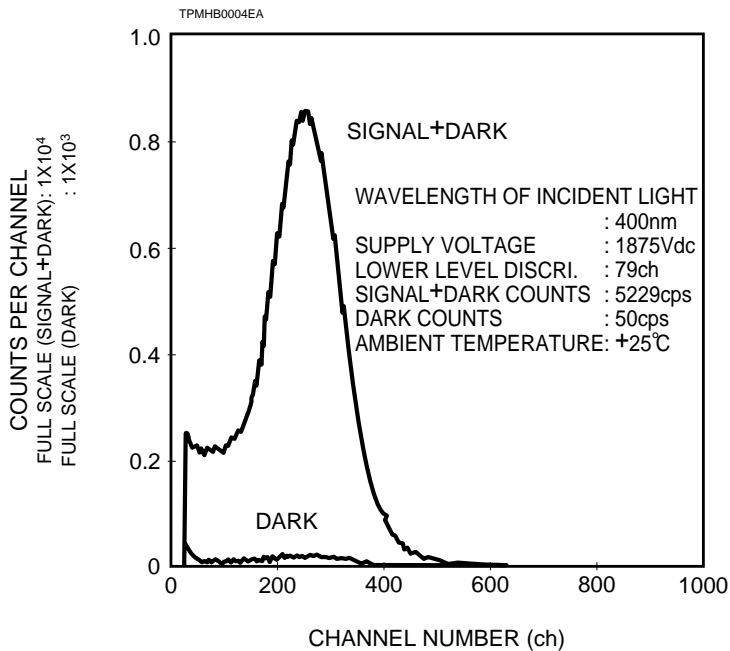
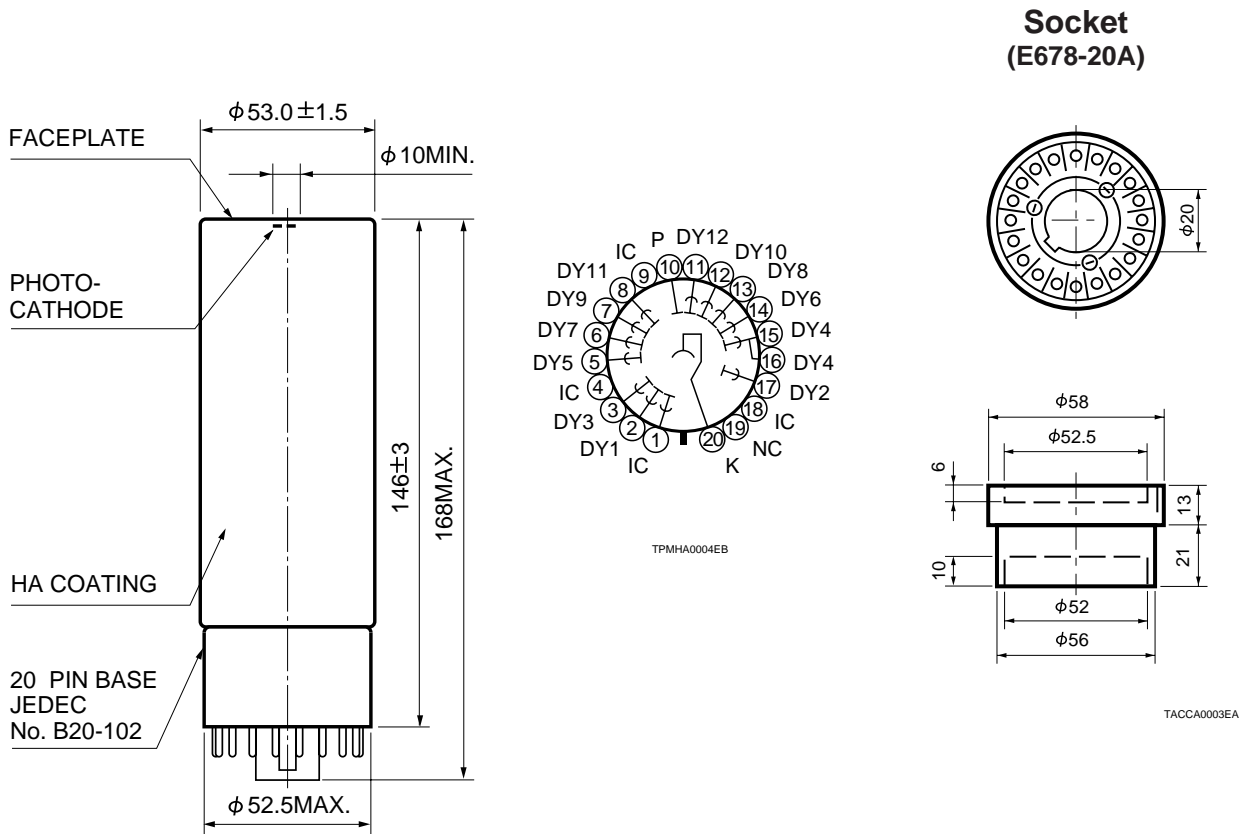


Figure 3: Typical Single Photoelectron Pulse Height Distribution



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Figure 4: Dimensional Outline (Unit : mm)



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