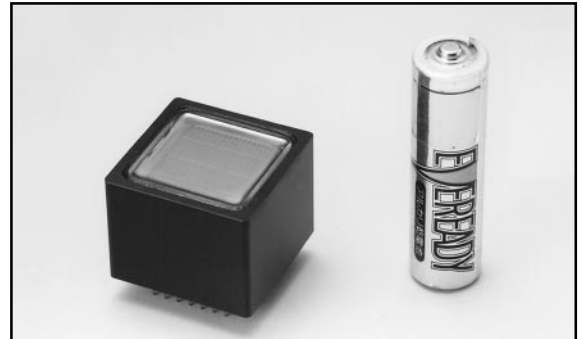


### FEATURES

- 2 × 2 multianode
- Newly developed "metal channel dynode"
- High speed response
- Low cross - talk



### GENERAL

Parameter		Description / Value	Unit
Spectral Response		300 to 650	nm
Wavelength of Maximum Response		420	nm
Photocathode	Material	Bialkali	-
	Minimum Effective Area	18 × 18	mm <sup>2</sup>
Window Material		Borosilicate glass	-
Dynode	Structure	Metal channel dynode	-
	Number of Stages	10	-
Weight		Approx. 26	g
Suitable Socket		E678-32B (option)	-

### MAXIMUM RATINGS (Absolute Maximum Values)

Parameter		Value	Unit
Supply Voltage	Between Anode and Cathode	900	Vdc
Average Anode Current		0.1	mA

### CHARACTERISTICS (at 25 °C)

Parameter		Min.	Typ.	Max.	Unit
Cathode Sensitivity	Luminous (2856 K)	50	70	-	μA/lm
	Blue (CS - 5 - 58 filter)	6	8	-	μA/lm-b
Anode Sensitivity	Luminous (2856 K)	25	140	-	A/lm
Gain		5 × 10 <sup>5</sup>	2 × 10 <sup>6</sup>	-	-
Anode Dark Current per Channel (after 30min. storage in darkness)		-	0.5	-	nA
Time Response	Anode Pulse Rise Time	-	1.2	-	ns
	Transit Time Spread (FWHM)	-	0.32	-	ns
Pulse Linearity per Channel ( ± 2 % deviation)		-	5(30 <sup>ⓐ</sup> )	-	mA
Cross - talk (9 × 9 mm <sup>2</sup> Aperture)		-	2	4	%
Uniformity Between Each Anode		-	1:1.5	1:3	-

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

ⓐ : Measured with the special voltage distribution ratio B (Tapered Bleeder) shown below.

### VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE

Electrodes	K	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	Dy9	Dy10	P
Ratio A	1.5	1.5	1.5	1	1	1	1	1	1	1	1	1
Ratio B (Tapered Bleeder)	1.5	1.5	1.5	1	1	1	1	1	1	2	3.6	

Supply Voltage: 800 Vdc, K: Cathode, Dy: Dynode, P: Anode

# MULTIANODE PHOTOMULTIPLIER TUBE R5900U-00-M4

Figure 1: Typical Spectral Response

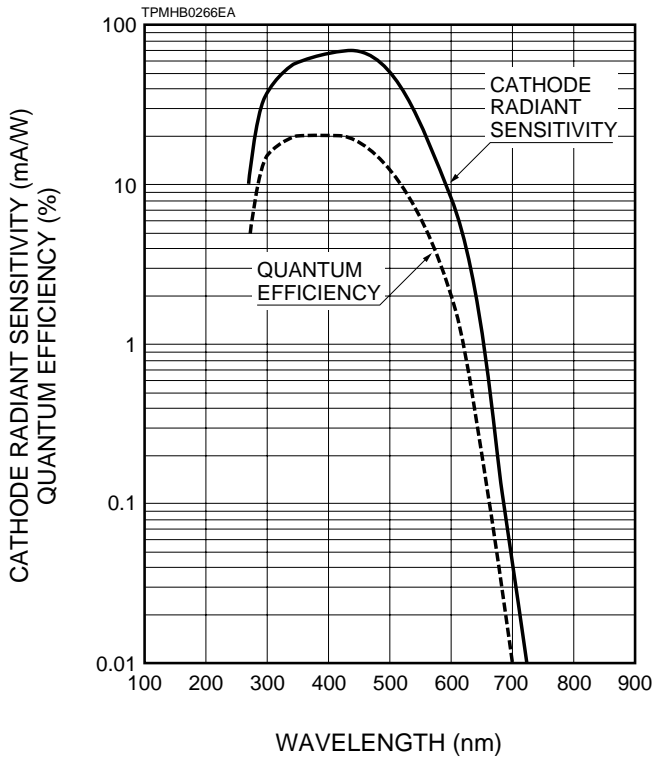


Figure 2: Typical Gain and Anode Dark Current

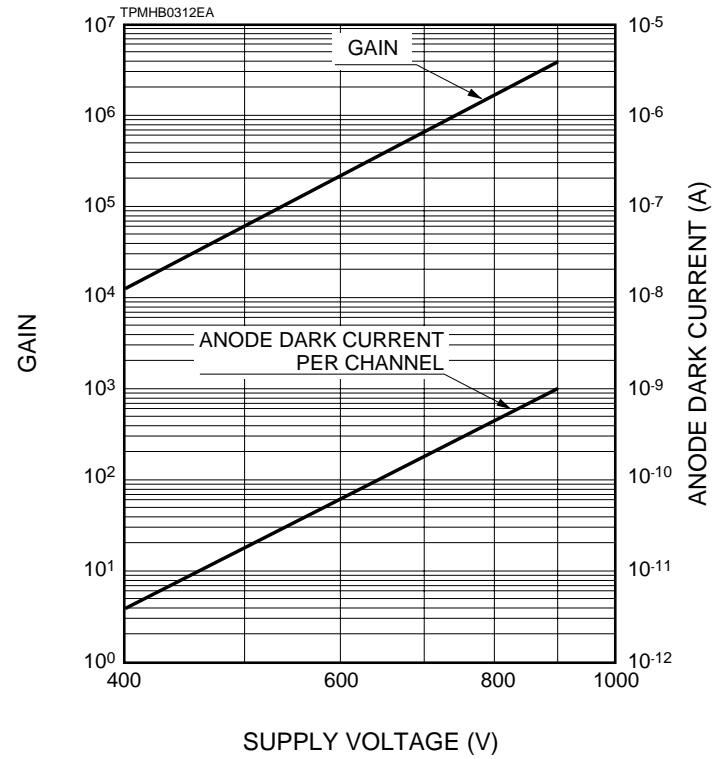


Figure 3: Typical Time Response

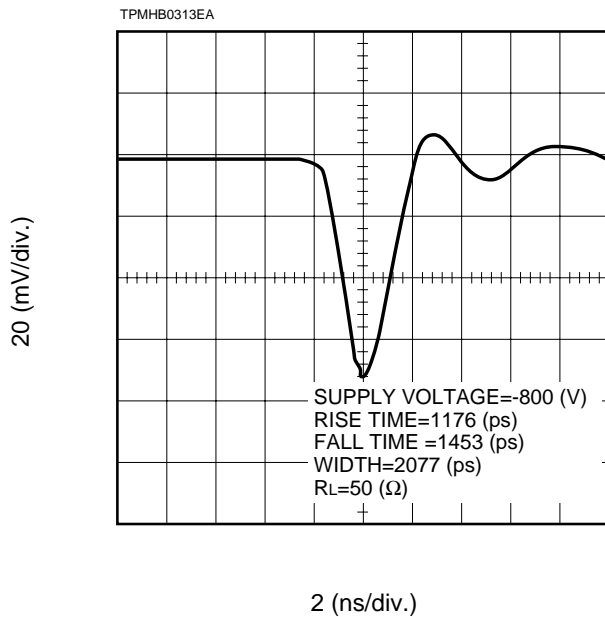
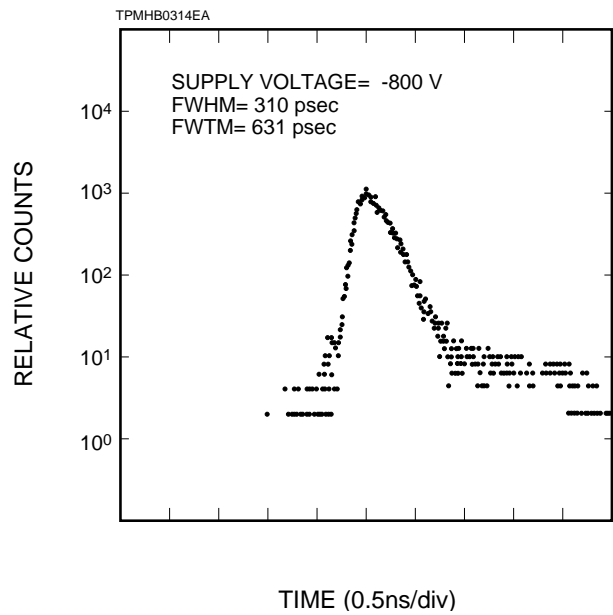
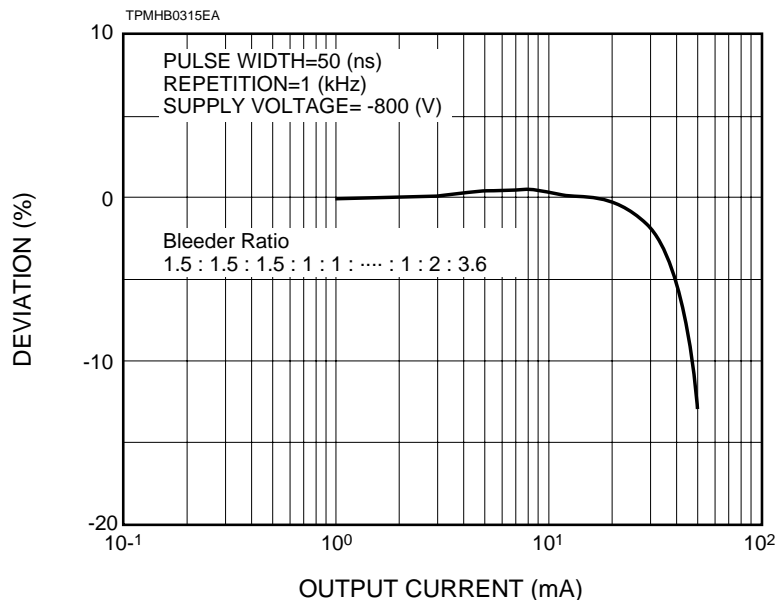


Figure 4: Typical T.T.S. Characteristic



**Figure 5: Pulse Linearity per Channel**



**Figure 6: Anode Uniformity (Example)**

82	95
97	100

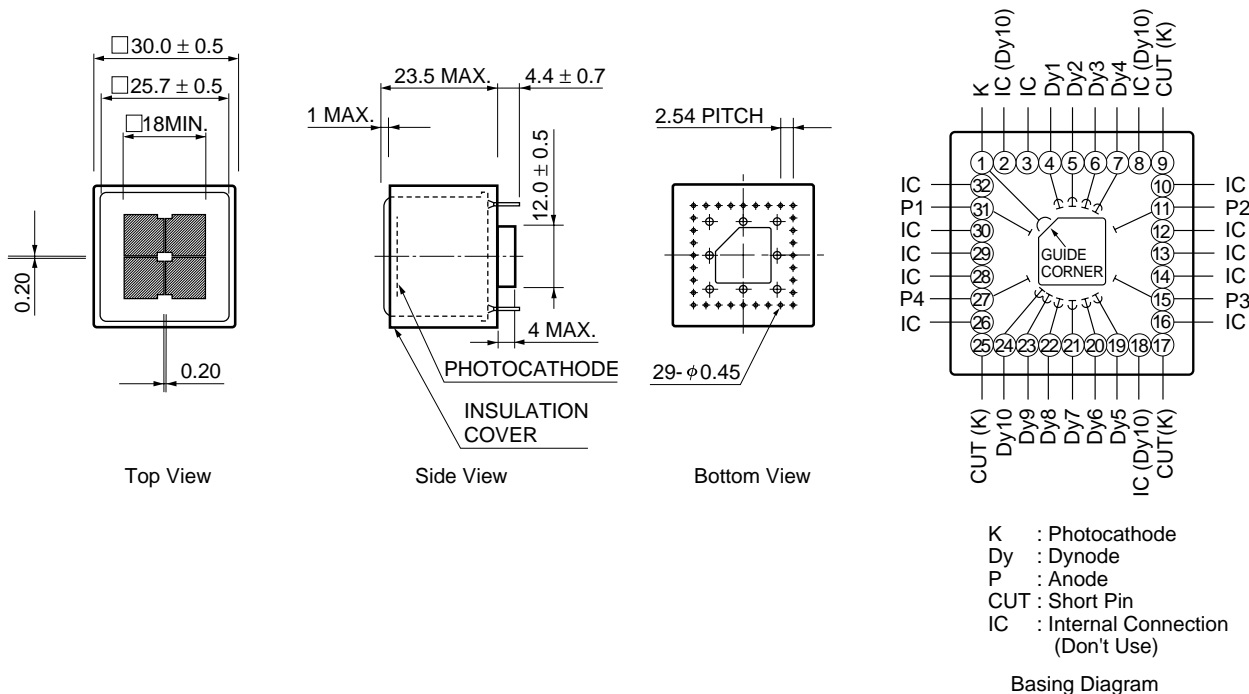
Supply Voltage : 800 V  
 Light Source : Lamp(uniform DC light)  
 Full Illumination

**Figure 7: Anode Cross Talk (Example)**

0.1	0.9
1.3	100

Supply Voltage : 800 V  
 Light Source : Lamp(uniform DC light)  
 Spot Illumination :  $9 \times 9 \text{ mm}^2$

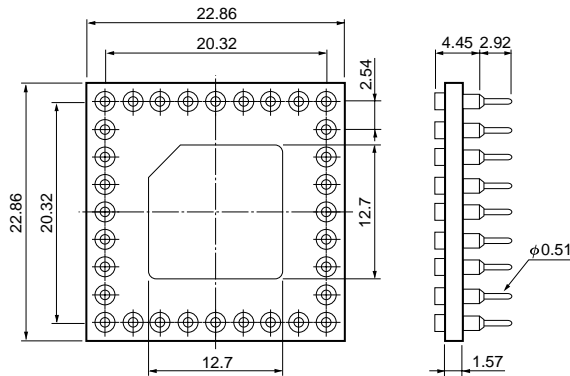
**Figure 8: Dimensional Outline and Basing Diagram (Unit: mm)**



# MULTIANODE PHOTOMULTIPLIER TUBE R5900U-00-M4

## [ACCESSORIES] OPTION

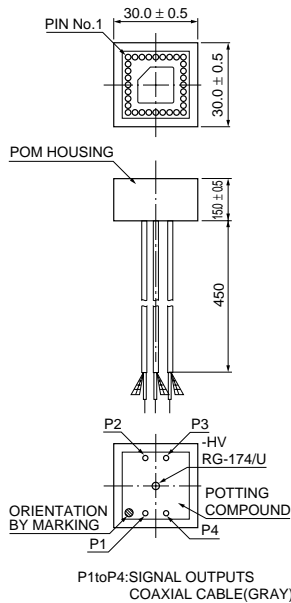
### ● Socket E678-32B



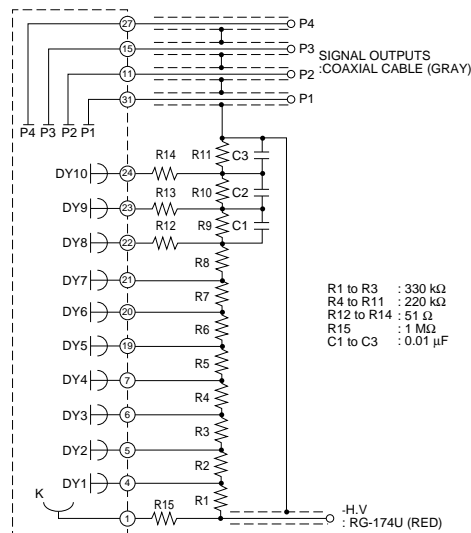
MATERIAL: Glass Epoxy

TACCA0094ED

### ● D Type Socket Assembly E7083



P1toP4: SIGNAL OUTPUTS  
COAXIAL CABLE (GRAY)



R1 to R3 : 330 kΩ  
R4 to R11 : 220 kΩ  
R12 to R14 : 51 Ω  
R15 : 1 MΩ  
C1 to C3 : 0.01 μF

\*For a stable operation, all of anodes should be connected to ground potential through load resistors such as 100 k ohm or so, even if they are not used.

## **WARNING ~ High Voltage ~**

TACCA0162EC

The product is operated at high voltage potential. Further, the metal housing of the product is connected to the photocathode (potential) so that it becomes a high voltage potential when the product is operated at a negative high voltage (anode grounded). Accordingly, extreme safety care must be taken for the electrical shock hazard to the operator or the damage to the other instruments.

\* PATENT: USA Pat. No. 5410211      PATENT PENDING: JAPAN11, USA1, EUROPE2

# HAMAMATSU

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