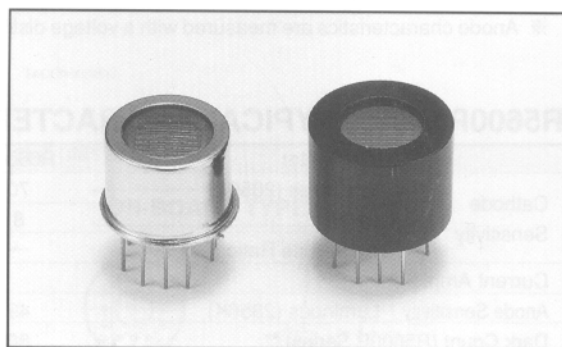


Ultra Compact TO-8 Metal Can Type 10mm Length, 15mm Diameter, Head-On Type

FEATURES

- "METAL PACKAGE PMT" the world smallest photo-multiplier tube in a TO-8 metal can (1/7 size volume compared to Hamamatsu R647)
New generation of optical detector having the photo-multiplier tube performance in a TO-8 size metal can.
- Newly developed "Metal Channel Dynode".
Applying a thin layer, "Metal Channel Dynode" developed to make timing characteristics and linearity better.
- Enable to use for a photon counting detection. (R5600P Type)



▲ Left: R5600, Right: R5600U

GENERAL

Parameter		R5600/R5600U/R5600P	-01	-03	-04	-06	Unit
Spectral Response		300 to 650	300 to 820	185 to 650	185 to 820	160 to 650	nm
Photocathode	Material	Bialkali	Multialkali	Bialkali	Multialkali	Bialkali	—
	Minimum Effective Area	8					mm ϕ
Window Material		Borosilicate		UV glass		Synthetic Silica	—
Dynode	Structure	Metal channel dynode					—
	Number of Stages	8					—
Case		TO-8 Metal can					—
Weight		R5600 Series: Approx. 4.1		R5600U/P Series: Approx. 4.2			g

MAXIMUM RATINGS (Absolute Maximum Values)

Parameter		Value	Unit
Supply Voltage	Between Anode and Cathode	1000	Vdc
Average Anode Current		100	μ A

METAL PACKAGE PHOTOMULTIPLIER TUBE R5600 SERIES

R5600/R5600U Series TYPICAL CHARACTERISTICS (at 25°C)

	Parameter	R5600/R5600U	-01	-03	-04	-06	Unit
Cathode Sensitivity	Luminous (2856K)	70	100	70	100	70	μ A/lm
	Blue	8	—	8	—	8	μ A/lm-b
	Red/White Ratio	—	0.1	—	0.1	—	—
Current Amplification		3×10^5					—
Anode Sensitivity	Luminous (2856K)	21	30	21	30	21	A/lm
Anode Dark Current		0.5	1	0.5	1	0.5	nA
Time Response	Rise Time	0.65					ns
Pulse Linearity (at 5% deviation)		30					mA

* After 30min. storage in darkness.

※ Anode characteristics are measured with a voltage distribution ratio shown below.

R5600P Series TYPICAL CHARACTERISTICS (at 25°C)

	Parameter	R5600P	-01	-03	-04	-06	Unit
Cathode Sensitivity	Luminous (2856K)	70	100	70	100	70	μ A/lm
	Blue	8	—	8	—	8	μ A/lm-b
	Red/White Ratio	—	0.1	—	0.1	—	—
Current Amplification		5×10^5 (MIN.) / 7×10^5 (TYP.)					—
Anode Sensitivity	Luminous (2856K)	49	70	49	70	49	A/lm
Dark Count (R5600P Series) **		80	500	80	500	80	cps
Time Response	Rise Time	0.65					ns
Pulse Linearity (at 5% deviation)		30					mA

** After 30min. storage in darkness and at 10^6 current amplification.

※ Anode characteristics are measured with a voltage distribution ratio shown below.

VOLTAGE DISTRIBUTION RATIO AND SUPPLY VOLTAGE

Electrodes	K	Dy1	Dy2	Dy3	Dy4	Dy5	Dy6	Dy7	Dy8	P
Ratio	1	1	1	1	1	1	1	1	1	0.5

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

Figure 1: Typical Spectral Response

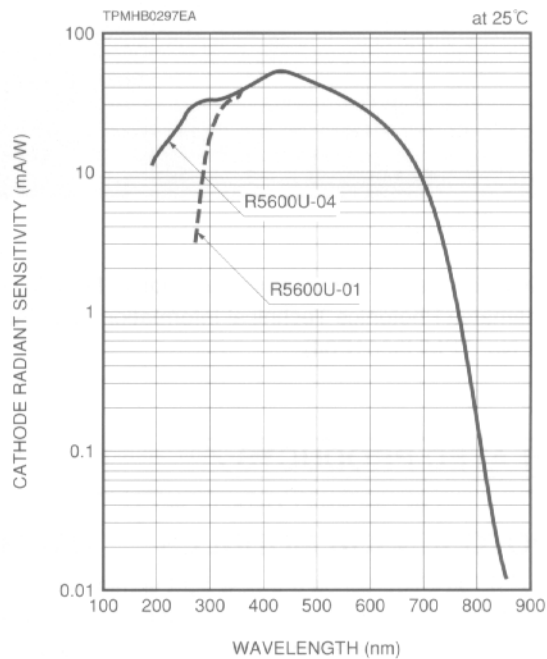
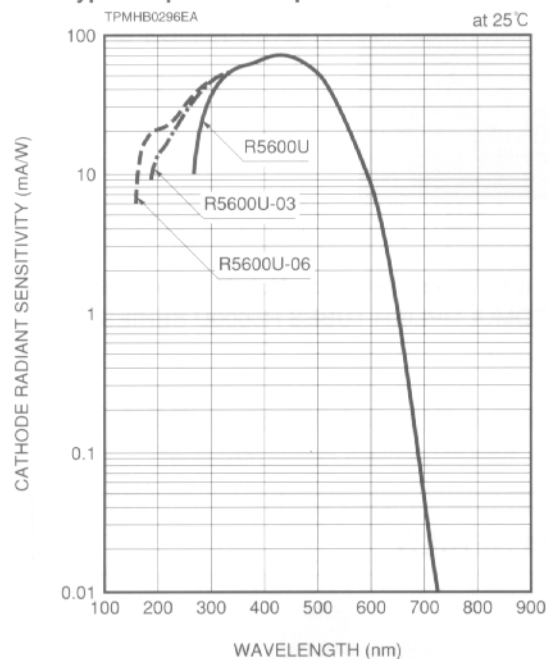


Figure 2: Typical Current Amplification

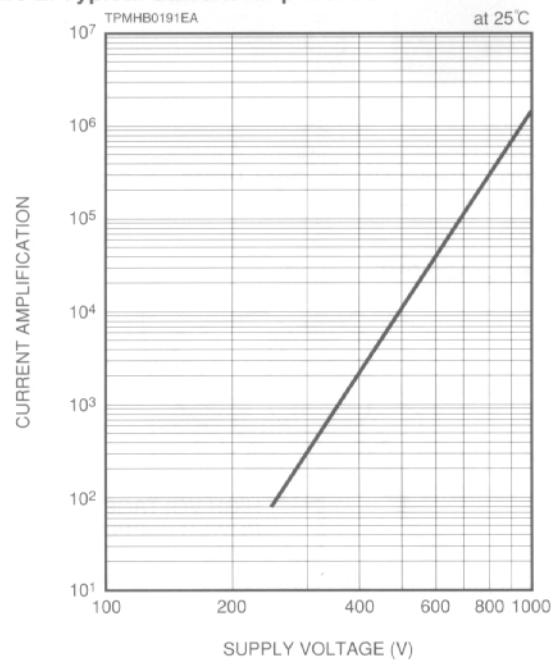


Figure 3: Anode Dark Current Characteristics

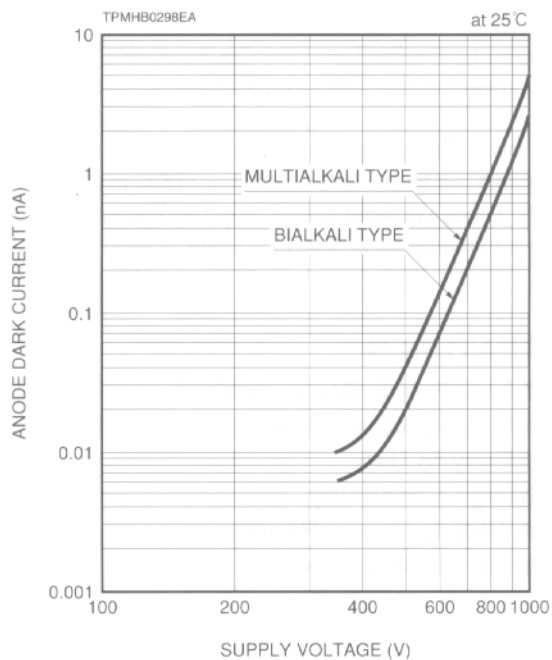
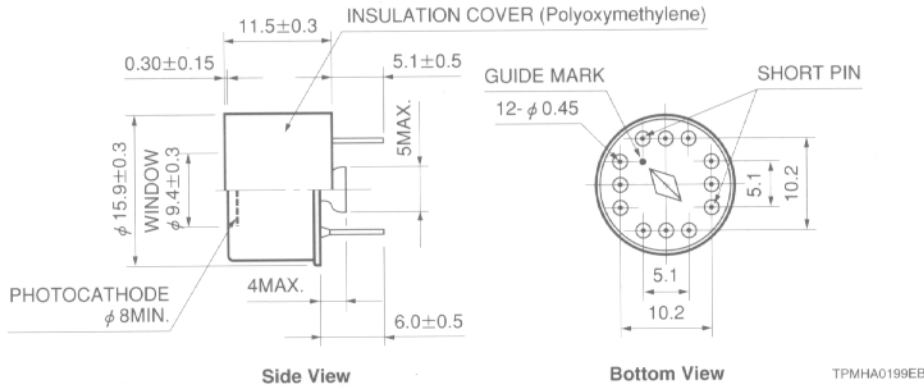
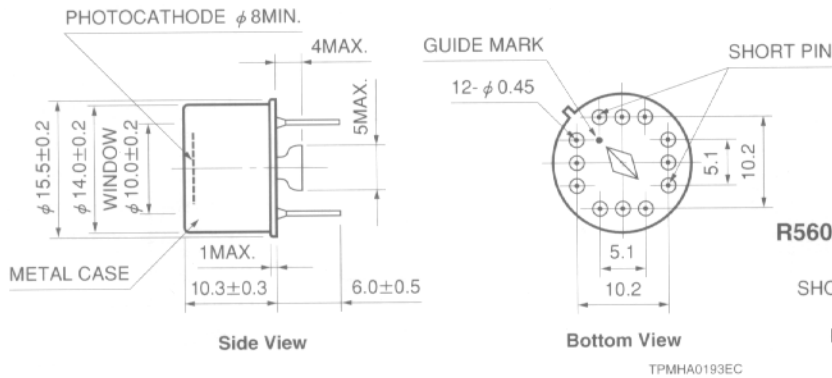


Figure 4: Dimensional Outline and Basing Diagram (Unit: mm)

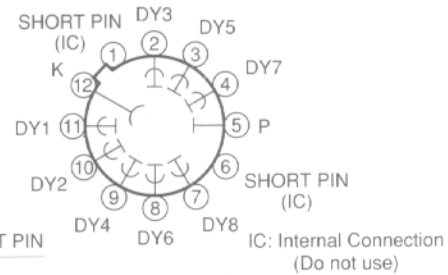
R5600U/P, -01, -03, -04



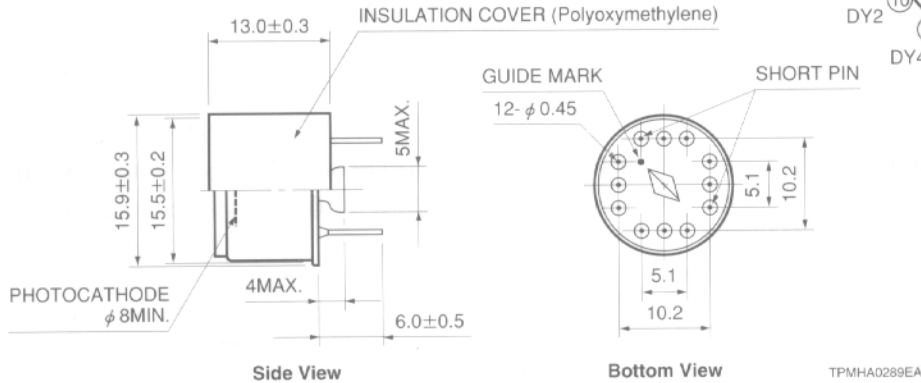
R5600, -01, -03, -04



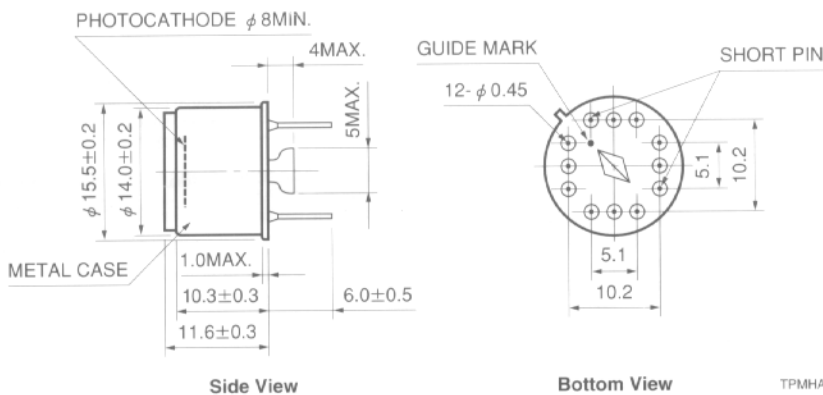
R5600, R5600U/P Series Pin Connection



R5600U-06, R5600P-06

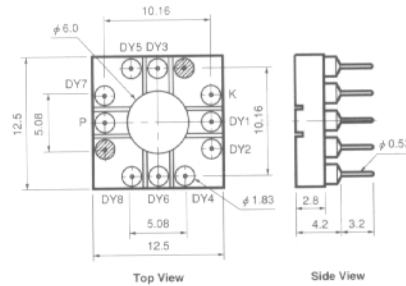


R5600-06



ACCESSORIES **OPTION**

● Socket E678-12M (Unit: mm)

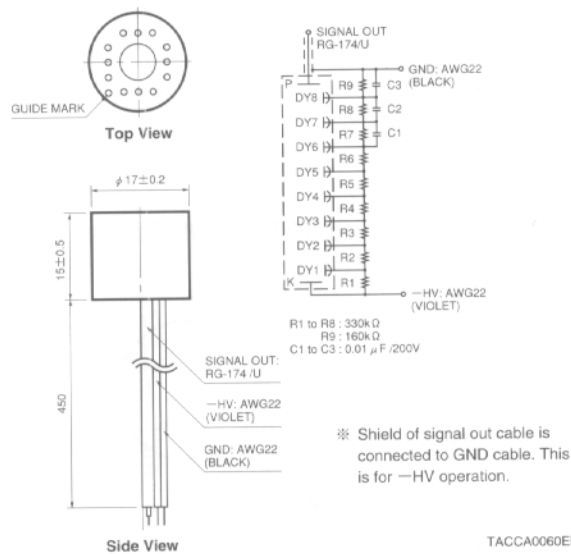


TACCA0059EC

● D Type Socket Assemblies (Unit: mm)

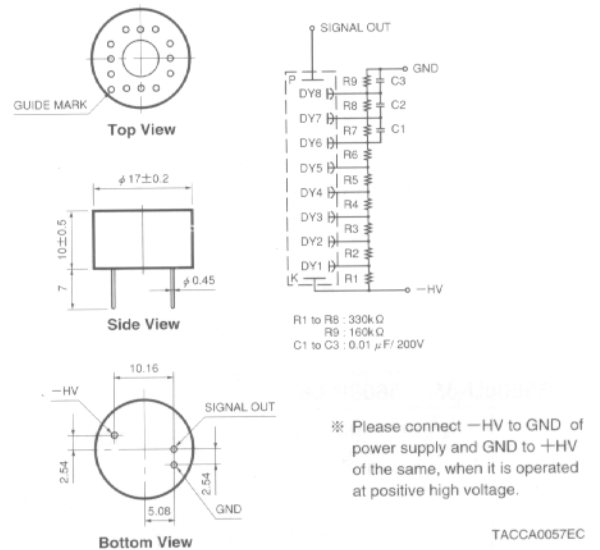
The D type socket assemblies have a built-in voltage divider in a plastic container.

CABLE TYPE E5780



TACCA0060EB

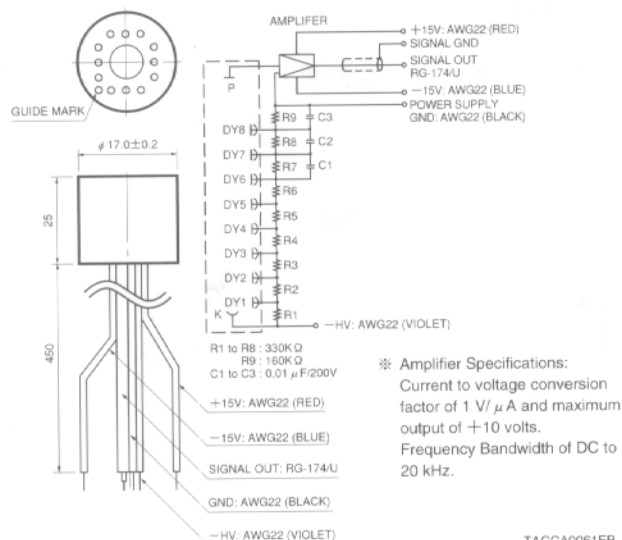
ON-BOARD TYPE E5770



TACCA0057EC

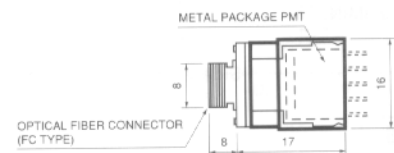
● DA Type Socket Assemblies C5781 (Unit: mm)

The DA type socket assemblies feature a built-in voltage driver and amplifier.



TACCA0061EB

● Optical Fiber Adaptor (FC Type) with Insulation Cover E5775 (Unit: mm)



※ E5775 shall be covered on R5600 series when it is shipped. R5600 series has to be modified for E5775.

For other types of connector, please consult our sales office.

TACCA0058EA

METAL PACKAGE PHOTOMULTIPLIER TUBE R5600 SERIES

CAUTION ~High Voltage Warning~

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. This caution is specially noted for R5600 series which doesn't have an insulation cover with the product. It is recommended to select R5600U series if the external dimension isn't critical.

● Reference:

- H. Kyushima, et al. : Photomultiplier Tube of New Dynode Configuration; IEEE Trans. Nnd. Sci., Vol. 41, No.4 (1994) 725
- Hamamatsu Photonics Technical Information : METAL PACKAGE PHOTOMULTIPLIER TUBES R5600U SERIES (Cat. No. TPMH9001E04)

RELATED PRODUCTS

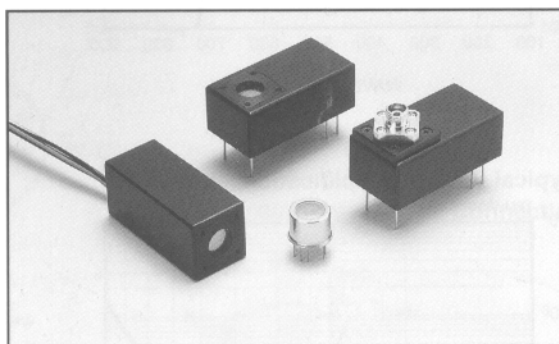
PHOTOSENSOR MODULES H5773/H5783/H5784 SERIES

The H5773/H5783 series are new light sensor modules including the compact photomultiplier tube, (METAL PACKAGE PMT) and operating power supply. It features low voltage operation (+11.5V to +15.5V) and low power consumption (Approx. 180mW). Compared with current light sensors, it has several advantages like high sensitivity, wide dynamic range and fast time response. These are featured by the PMT and the Cockcroft-Walton high voltage power supply. The H5773 series are on-board types which facilitates mounting directly on a printed circuit board and the H5783 series have a cable output. H5784 series are cable out type with an amplifier of DC to 20 kHz bandwidth. These versions accept direct light input or an optical fiber with the optional fiber connector of E5776.

FEATURES

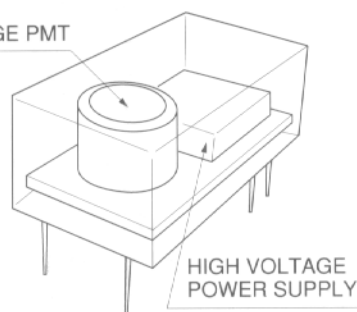
- Low Power Consumption
- Low Voltage Drive
- Easy to Use
- High Sensitivity
- Wide Dynamic Range
- Fast Time Response

Please refer the individual detail data sheet of H5773/H5783/H5784 series.



▲Left: H5783 Center: H5773 Right: H5773 with E5776
Front: METAL PACKAGE PMT

METAL PACKAGE PMT



H5773 Series

TPMH0093EA

H5773 Series: SIZE: 25 (W) × 50 (D) × 18 (L) mm WEIGHT: 50g
H5783 Series: SIZE: 22 (W) × 22 (D) × 50 (L) mm WEIGHT: 80g
H5784 Series: SIZE: 22 (W) × 22 (D) × 60 (L) mm WEIGHT: 100g

※ PATENT: USA 1 (PAT. No. 5410211) PATENT PENDING: JAPAN 12, USA 8, EUROPE 9

HAMAMATSU

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