

High Sensitivity, Wide Dynamic Range Fast Time Response

The H5773/H5783/H5784 series are light sensor modules including a compact photomultiplier tube (**METAL PACKAGE PMT**) and operating power supply. They feature low voltage operation (+11.5V to +15.5V for H5773/H5783 series and $\pm 11.5V$ to $\pm 15.5V$ for H5784 series) and low power consumption (Approx. 180mW). Advantages include 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. The H5784 series have a low noise amplifier with a cable output. These versions accept direct light input or an optical fiber with the optional fiber adaptor E5776.



▲ Left : H5783 Center : H5773 Right : H5784
Front : METAL PACKAGE PMT

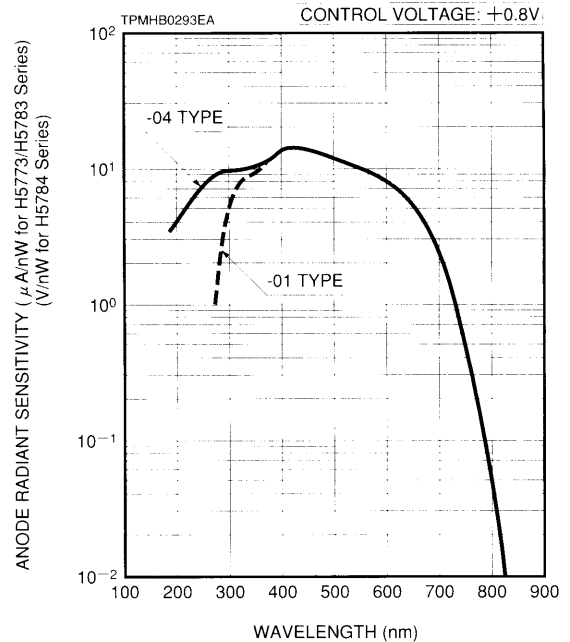
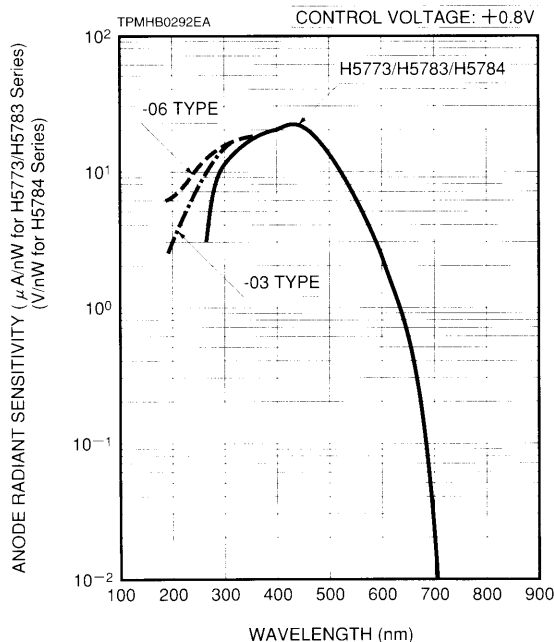
FEATURES

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

APPLICATIONS

- O/E Converter
- Ultra Low Light Level Detection
- Portable Optical Detection Instrument

Figure 1: Typical Spectral Response



PHOTOSENSOR MODULES H5773/H5783/H5784 SERIES

STANDARD PHOTOSENSORS

Type No.	Spectral Response	Lead Type
H5773	300 to 650 nm	On-board Type
-01	300 to 820 nm	
-03	185 to 650 nm	
-04	185 to 820 nm	
-06*	185 to 650 nm	
H5783	300 to 650 nm	Cable Out Type
-01	300 to 820 nm	
-03	185 to 650 nm	
-04	185 to 820 nm	
-06*	185 to 650 nm	

Type No.	Spectral Response	Lead Type
H5784	300 to 650 nm	Cable Out Type
-01	300 to 820 nm	
-03	185 to 650 nm	
-04	185 to 820 nm	
-06*	185 to 650 nm	

*) Suffix -06 has higher sensitivity at less than 300nm in comparison with suffix -03.

Note : "P" type (ex. H5783P-suffix) is available for H5773 & H5783 series. Incorporated PMT is selected for Photon Counting.

Note : When a photosensor module or socket assembly is operated in a vacuum, gas may be released from the circuit components used inside the assembly and also spike noise by discharge may occur. Do not use these modules or assemblies under these conditions.

SPECIFICATIONS

● GENERAL

Parameter	H5773 Series	H5783 Series	H5784 Series	Unit
Supply Voltage Range Vcc & Vee	+11.5 to +15.5		±11.5 to ±15.5	V
Supply Current Requirement	No Signal	9	9 / 1*2	mA
	Max. Output	12	12 / 1*2	mA
Supply Adjustable Range (Relative Sensitivity)	1 : 10 ⁴			—
Settling Time (Sensitivity Control) *1	2			s
Effective Area	8			mm dia.
Weight	Approx. 50	Approx. 80	Approx. 100	g

*1) Stabilized time in the control voltage adjustment from +1.0V to +0.5V.

*2) "Minus Voltage" requires 1mA current.

● MAXIMUM RATINGS (Absolute Maximum Values)

Parameter	H5773 Series	H5783 Series	H5784 Series	Unit
Supply Voltage Vcc & Vee	+18		±18	V
Operating Temperature	+5 to +50			°C
Storage Temperature	-20 to +50			°C
Output Current / Output Voltage *1	100 μ A	10V		—
Control Voltage *2 Vcontrol	+1.0			V

*1) Averaged over any interval of 30 seconds maximum.

*2) Applying the maximum value for more than 30 seconds continuously may cause a damage.

● H5773 / H5783 SERIES CHARACTERISTICS (at 25°C)

Parameter	H5773/H5783	-01, -04	-03, -06	Unit
Radiant Sensitivity (at 420nm) ®	21	15	21	μ A/nW
Dark Current ®	0.5	1	0.5	nA
Induced Ripple in Signal (Measured across 1M Ω /22pF load for H5773/H5783 Series)	1.1			mVp-p
Time Response ® Anode Pulse Rise Time	0.65			ns
Recommended Control Voltage Range Vcontrol	+0.25 to +1.0			V

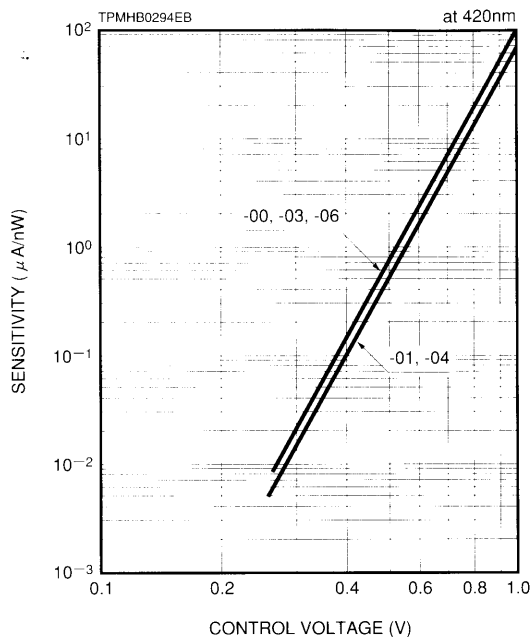
● H5784 SERIES CHARACTERISTICS (at 25°C)

Parameter	H5784	-01, -04	-03, -06	Unit
Radiant Sensitivity (at 420nm) ®	21	15	21	V/nW
Output Offset ®	3	3	3	mV
Induced Ripple in Signal (Measured across 1M Ω /22pF load for H5784 Series)	2			mVp-p
Current to Voltage Conversion Factor	1			V/ μ A
Frequency Bandwidth	DC to 20			kHz
Recommended Control Voltage Range Vcontrol	+0.25 to +1.0			V

@ Control voltage +0.8V

Figure 2: Typical Sensitivity Adjustable Characteristics

H5773 / H5783 SERIES



H5784 SERIES

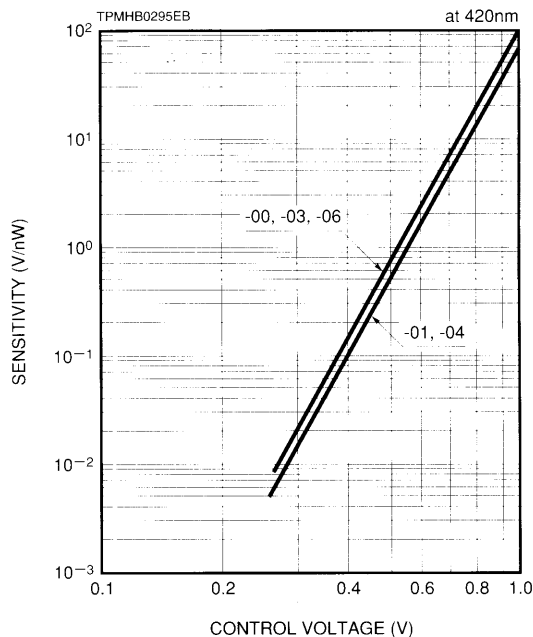
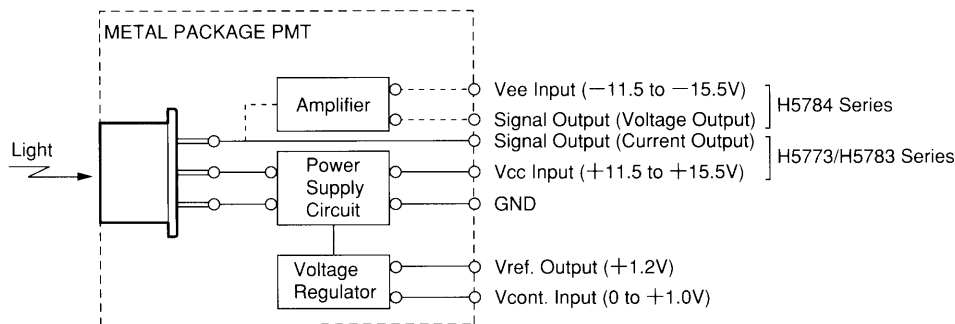


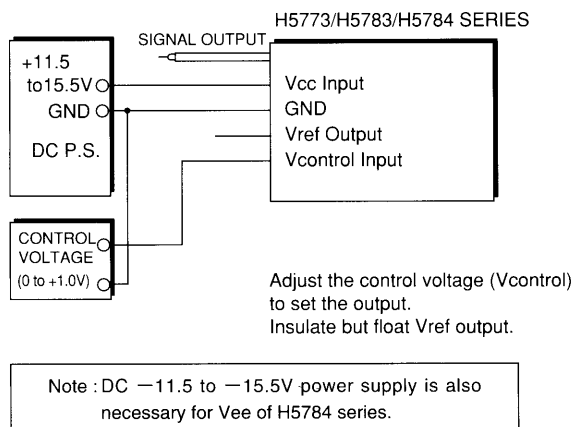
Figure 3: Module Functional Diagram



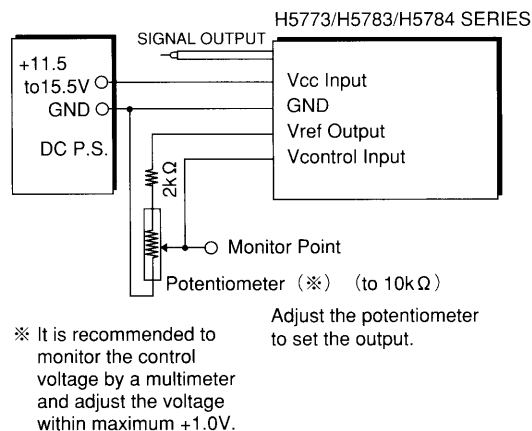
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Figure 4: Wiring Examples For Sensitivity Adjustment

VOLTAGE PROGRAMMING



RESISTANCE PROGRAMMING

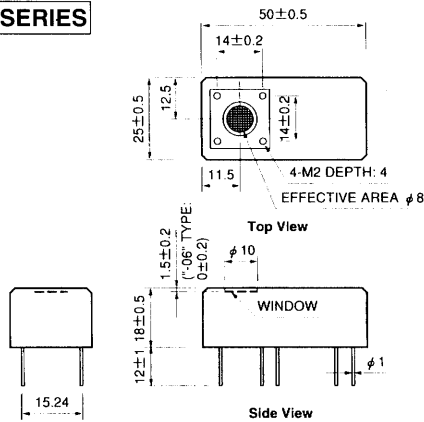


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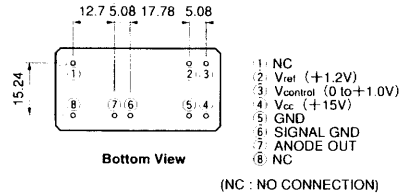
PHOTOSENSOR MODULES H5773/H5783/H5784 SERIES

Figure 5: Dimensional Outlines (Unit: mm)

H5773 SERIES



Pin Connection

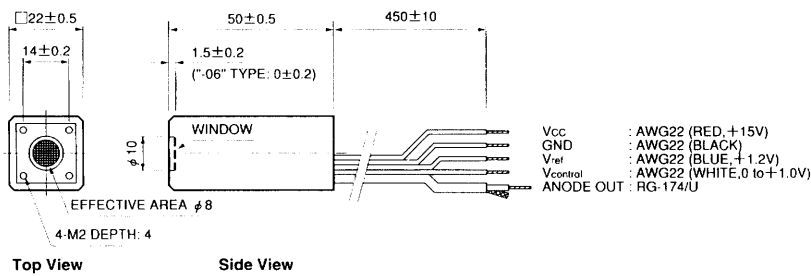


H5773 / H5783 / H5784 Series

Note : Suffix -06 type has the depth of 0±0.2mm for the detector window position instead of 1.5±0.2mm for the other types.

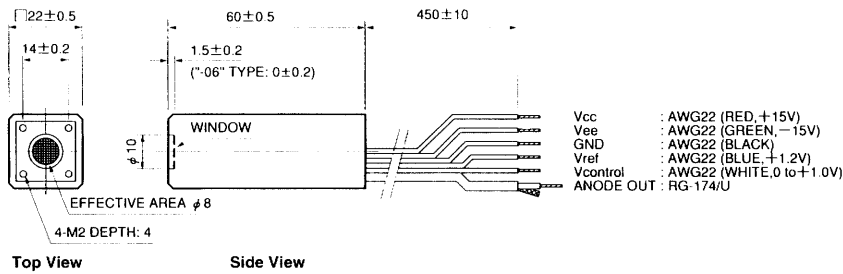
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H5783 SERIES



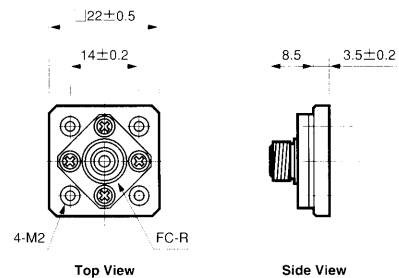
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H5784 SERIES



TPM1A0288EB

E5776 Optical Fiber Adapter (FC Type) OPTION



TACCA0055EA

Reference:

[Technical information]

METAL PACKAGE PHOTOMULTIPLIER TUBES R5600 SERIES and PHOTODIODE MODULES (Cat. No. TPMH9001E05)

[Individual Data Sheet]

METAL PACKAGE PHOTOMULTIPLIER TUBES R5600 SERIES (Cat. No. TPMH1066E08)

For the other adapters such as SMA, ST and SC types please consult our sales office.

※ PATENT: USA Pat.No. 5410211

PATENT PENDING: JAPAN 12, USA 8, EUROPE 9

HAMAMATSU

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 10

United Kingdom: Hamamatsu Photonics UK Limited, Lough Point, 2 Gladbeck Way, Windmill Hill, Enfield, Middlesex EN2 7JA, United Kingdom, Telephone: (44)181-367-3560, Fax: (44)181-367-6384

North Europe: Hamamatsu Photonics Norden AB, Smidesvågen 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

TPMH1121E07

MAR. 1999 SI (9708)

Printed in Japan (500)