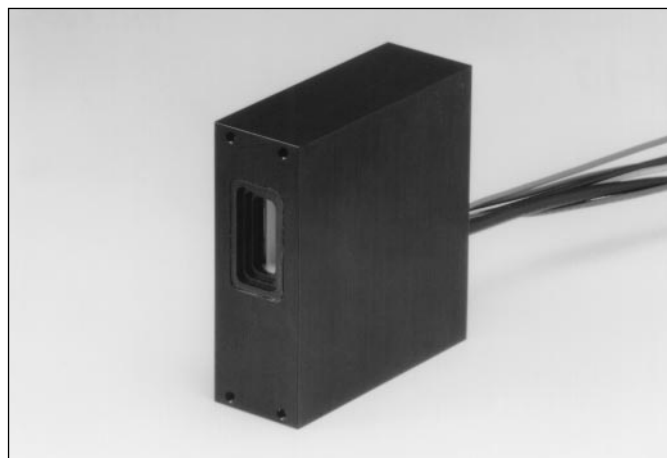


Integrated Photomultiplier Modules Including High Voltage Power Supply and Amplifier

The H5700, H5701, and H5702 series are photomultiplier tube (PMT) based integrated photosensor modules. All the models in these series comprise a 13mm (1/2 inch) diameter side-on photomultiplier tube and a Cockcroft-Walton type high voltage power supply assembled in a compact aluminum housing. They feature very high sensitivity, excellent output linearity, and power consumption which is low enough to enable battery-powered operations.

The H5700 series outputs current signal direct from the photomultiplier tube anode.

The H5701 and H5702 series employ a current to voltage converter which eliminates the need for an external amplifier. The Formar series includes a high gain 20kHz BW amplifier, and the latter series includes a low gain 200kHz BW amplifier.



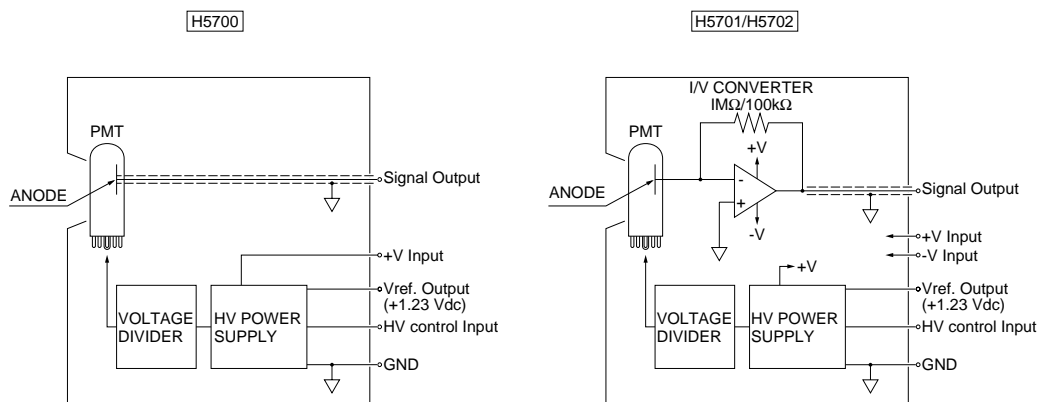
FEATURES

- Easy to Use
- Compact Size
- Integrated Package
- Low Power Consumption
- High Sensitivity
- Excellent Output Linearity
- No Exposed High Voltage

APPLICATIONS

- O/E Conversion
- Transmission/Absorption/Reflection Detection
- Emission/Fluorescence Detection
- Other Low Light Level Detection

Figure 1: Schematic Diagrams



TPMSC0031EB

PHOTOSENSOR MODULES H5700/H5701/H5702 SERIES

STANDARD PHOTODIODE MODULES

Type No.	Spectral Range	Amplifier Section	
		Current to Voltage Conversion Factor	Bandwidth
H5700-01	185 to 650nm	—	—
H5700-02	185 to 850nm	—	—
H5700-50	185 to 900nm	—	—
H5701-01	185 to 650nm	1V/μA (1MΩ)	DC to 20kHz
H5701-02	185 to 850nm	1V/μA (1MΩ)	DC to 20kHz
H5701-50	185 to 900nm	1V/μA (1MΩ)	DC to 20kHz
H5702-01	185 to 650nm	0.1V/μA (100kΩ)	DC to 200kHz
H5702-02	185 to 850nm	0.1V/μA (100kΩ)	DC to 200kHz
H5702-50	185 to 900nm	0.1V/μA (100kΩ)	DC to 200kHz

SPECIFICATIONS

● TYPICAL CHARACTERISTICS (Control Voltage: +1Vdc, Ta: 25°C)

Parameter	Type No.	Value	Unit
Luminous Sensitivity (with 2856K light source)	H5700-01	130	A/lm
	H5700-02	200	A/lm
	H5700-50	1300	A/lm
	H5701-01	130	V/μlm
	H5701-02	200	V/μlm
	H5701-50	1300	V/μlm
	H5702-01	13	V/μlm
	H5702-02	20	V/μlm
	H5702-50	130	V/μlm
Radiant Sensitivity at Maximum Response -01: at 340nm -02: at 530nm -50: at 600nm	H5700-01	120	μA/nW
	H5700-02	60	μA/nW
	H5700-50	280	μA/nW
	H5701-01	120	V/nW
	H5701-02	60	V/nW
	H5701-50	280	V/nW
	H5702-01	12	V/nW
	H5702-02	6	V/nW
	H5702-50	28	V/nW
Dark Current	H5700-01	0.5	nA
	H5700-02	1	nA
	H5700-50	1	nA
Offset Voltage	H5701	-3	mV
	H5702	-2	mV
Induced Ripple in Signal (Measured across 1MΩ/20pF load for H5700)	H5700	1	mVp-p
	H5701	4	mVp-p
	H5702	4	mVp-p
Linearity of PMT Output Current at 10μA (In DC Mode)	All Models	±0.5	%

● GENERAL

Parameter		Value	Unit
Recommended Supply Voltage Range	H5700	+11.5 to +15.5	Vdc
	H5701, H5702	±11.5 to ±15.5	Vdc
Supply Current (No Signal Input, Control Voltage: +1V)	H5700 +15V	7	mA Max.
	H5701, H5702 +15V/-15V	7/1	mA Max.
Control Voltage to PMT Applied Voltage Ratio		1: 10 ³	—
Sensitivity Adjustable Range (Relative Sensitivity)		1: 10 ⁴	—
Settling Time (Sensitivity Control)		2*	s Max.
Photosensitive Area		2.0 × 13.0	mm
Overall Dimensions		19.0 × 50.8 × 53.2	mm
Weight		Approx. 100	g

* Against HV control voltage change of +1.0V to +0.5V.

● MAXIMUM RATINGS (Absolute Maximum Values)

Parameter		Value	Unit
Supply Voltage	H5700	+18	Vdc
	H5701, H5702	±18	Vdc
Control Voltage		+1.2	Vdc
Output Current	H5700	-10	μA
Output Voltage (In DC mode)	H5701	+10	V
	H5702	+1	V
Operating Temperature		+5 to +50	°C
Storage Temperature		-20 to +50	°C
Operating/Storage Humidity		90*	%RH

* With no moisture condensation

Figure 2: Typical Spectral Responses (H5700)

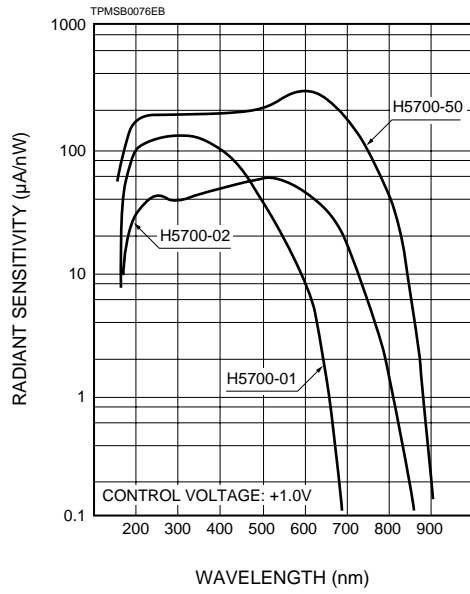


Figure 3: Typical Spectral Responses (H5701/H5702)

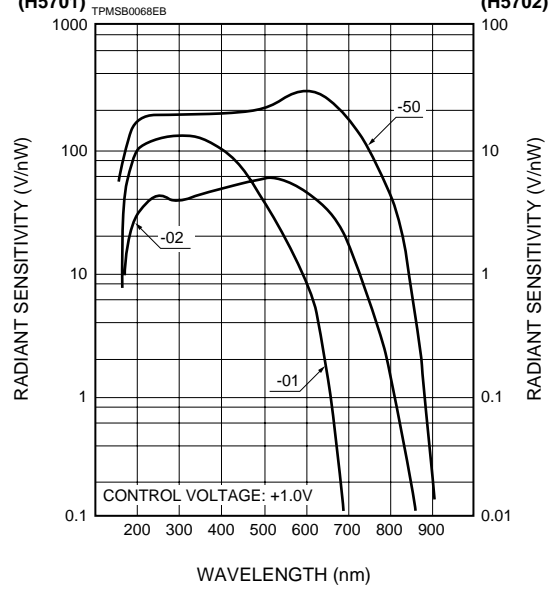


Figure 4: Sensitivity Adjusting Characteristics (H5700)

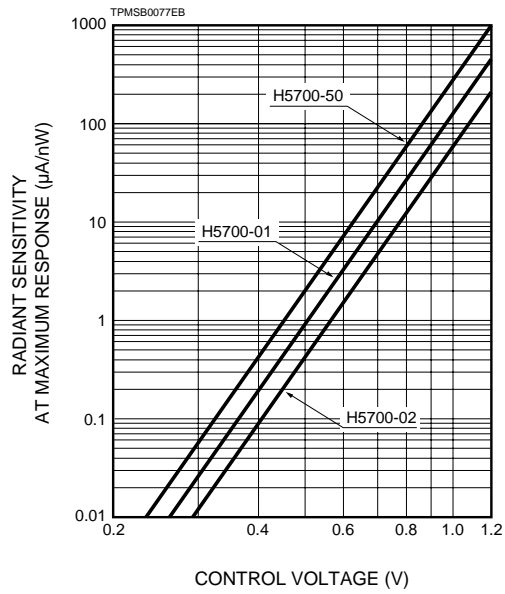


Figure 5: Sensitivity Adjusting Characteristics (H5701/H5702)

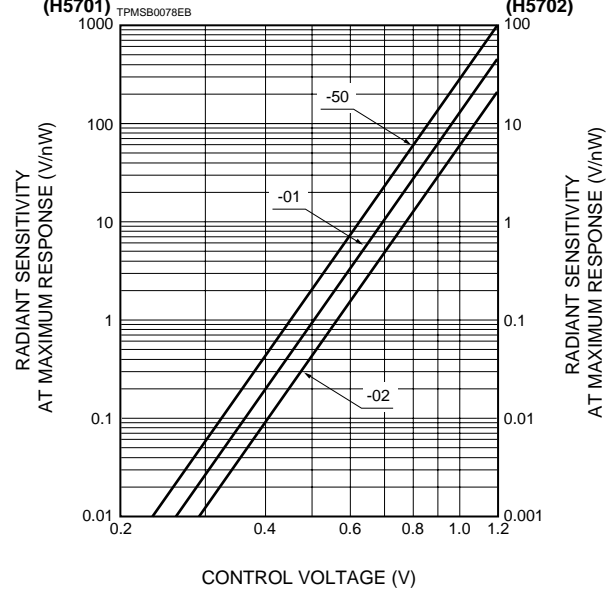
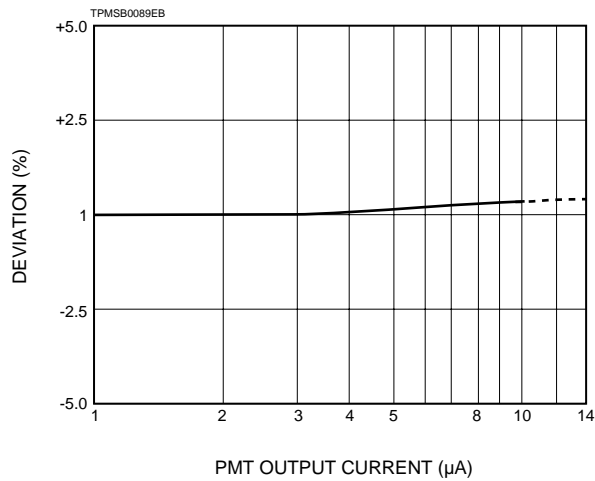


Figure 6: DC Linearity of PMT Output (H5700)



PHOTOSENSOR MODULES H5700/H5701/H5702 SERIES

Figure 7: Wiring Examples

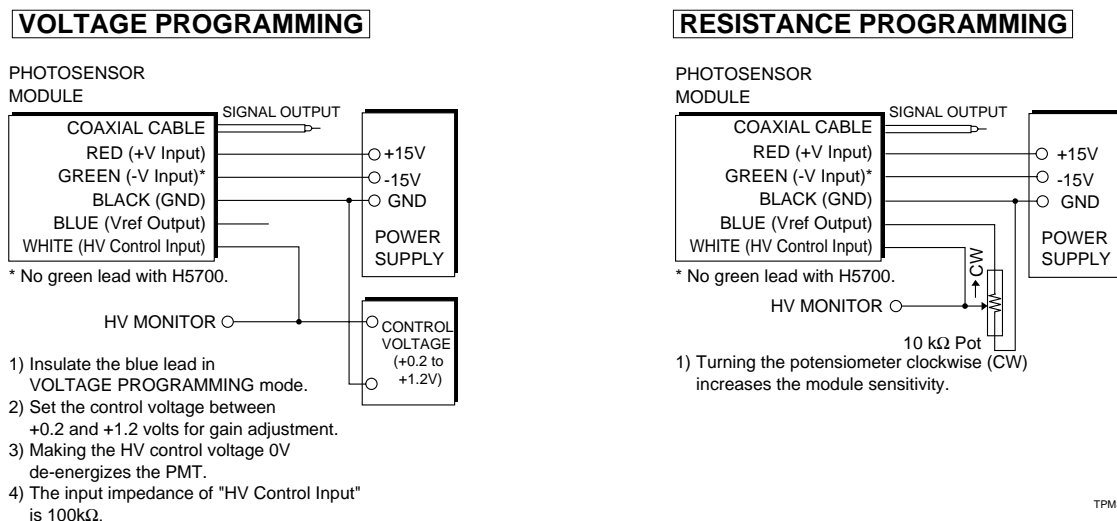
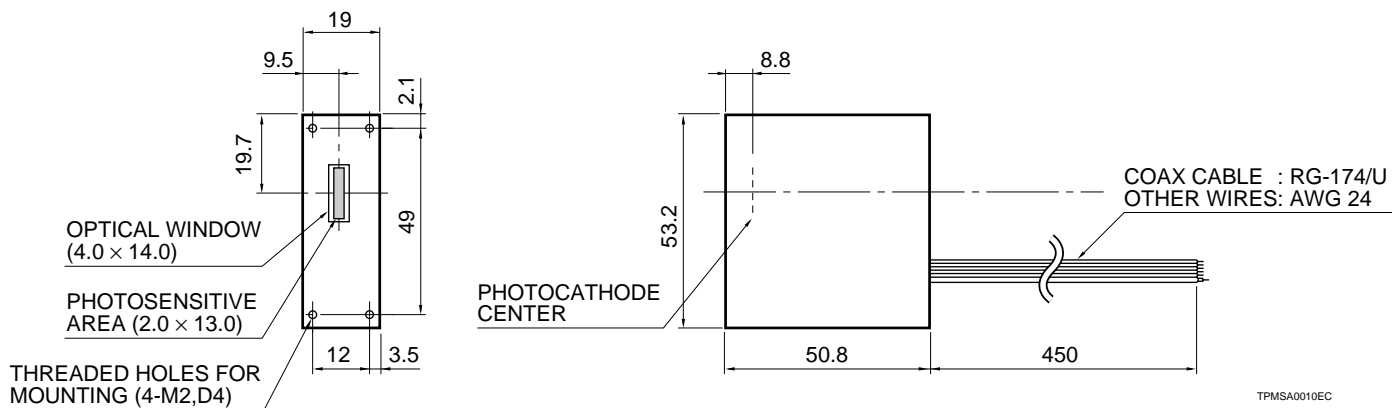


Figure 8: Dimensional Outline (Unit: mm)



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