Compact Side-on PMT

Photosensor Modules H7710/H8567 Series



The H7710/H8567 series photosensor modules contain a high-voltage power supply circuit and a 13-mm (1/2") diameter side-on photomultiplier tube in a compact aluminum housing. The 13-mm (1/2") side-on photomultiplier tube has a reflection mode photocathode that delivers high quantum efficiency at wavelengths above 600 nm, an adequate gain of up to 10^7 and fast time response. A high S/N ratio can be obtained even when measuring extremely low level light at high speeds.
The H7710 series uses a Cockcroft-Walton circuit with low power consumption, while the H8567 series has a high-voltage power supply circuit comprised of a Cockcroft-Walton circuit and an active divider circuit to shorten the settling time. Select the desired type that meets your application. Five types are available according to the required spectral response range. Flexible cables are used for easy installation in equipment.

Product Variations

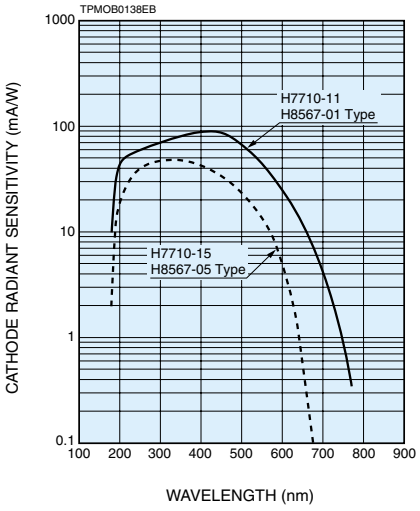
Type No.		Spectral Response	Features
H7710-11	H8567-01	185 nm to 750 nm	High sensitivity in UV to visible range
H7710-12	H8567-02	185 nm to 900 nm	For general applications in UV to near IR range
H7710-13	H8567-03	185 nm to 900 nm	High sensitivity in UV to near IR range
H7710-14	H8567-04	185 nm to 830 nm	Low dark current in UV to near IR range
H7710-15	H8567-05	185 nm to 650 nm	For general applications in UV to visible range

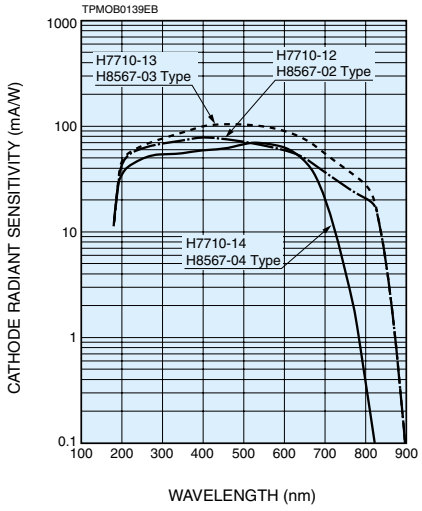
Specifications

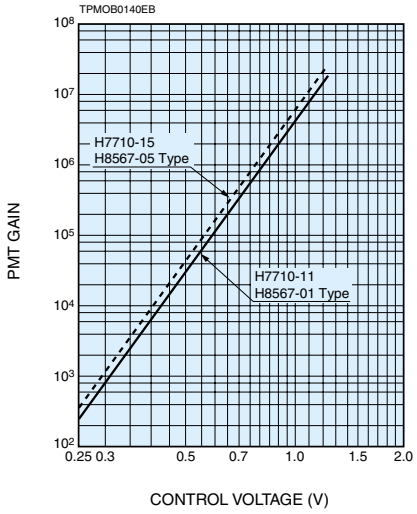
Parameter			H7710 / H8567 Series					Unit
Suffix	H7710 Series		-11	-12	-13	-14	-15	—
	H8567 Series		-01	-02	-03	-04	-05	
Input Voltage			+11.5 to +15.5					V
Max. Input Voltage			+18					V
Max. Input Current	H7710 Series		7					mA
	H8567 Series		25					
Max. Output Signal Current			10					μA
Max. Control Voltage			+1.2 (Input impedance H7710 Series: 1 MΩ, H8567 Series: 100 kΩ)					V
Recommended Control Voltage Adjustment Range			+0.25 to +1.0					V
Effective Area			3.7 × 13.0					mm
Sensitivity Adjustment Range			1: 10^4					—
Peak Sensitivity Wavelength			420	400	450	530	340	nm
Cathode	Luminous Sensitivity	Min.	80	200	350	140	20	μA/lm
		Typ.	120	300	500	200	40	
	Blue Sensitivity Index (CS 5-58)		10	—	—	—	5	—
	Red/White Ratio		—	0.3	0.4	0.15	—	—
	Radiant Sensitivity *1		90	77	105	70	48	mA/W
Anode	Luminous Sensitivity *2	Min.	100	400	1000	300	50	A/lm
		Typ.	700	2000	2000	700	300	
	Radiant Sensitivity *1 *2		5.2×10^5	5.2×10^5	4.2×10^5	2.5×10^5	3.6×10^5	A/W
	Dark Current *2 *3	Typ.	1	1	2	0.1	0.5	nA
		Max.	10	10	10	1	5	
Rise Time *2			1.4					ns
			H7710 Series		H8567 Series			
Ripple Noise *2 *4 (peak to peak)		Max.	0.6		0.6			mV
Settling Time *5			10		0.2			s
Operating Ambient Temperature			+5 to +50		+5 to +45			°C
Storage Temperature			-20 to +50					°C
Weight			100					g

*1: Measured at the peak sensitivity wavelength *2: Control voltage = +1.0 V *3: After 30 minute storage in darkness
*4: Cable RG-174/U, Cable length 450 mm, Load resistance = 1 MΩ, Load capacitance = 22 pF
*5: The time required for the output to reach a stable level following a change in the control voltage from +1.0 V to +0.5 V.

Characteristics (Cathode radiant sensitivity, PMT gain)

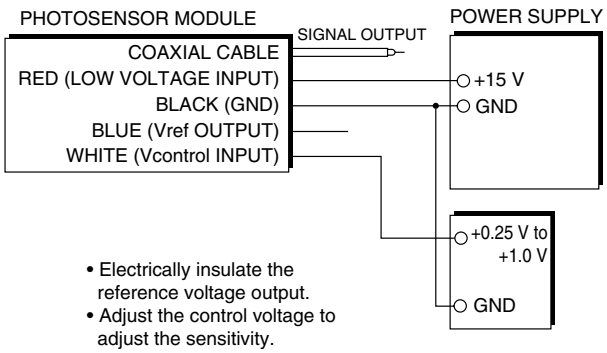






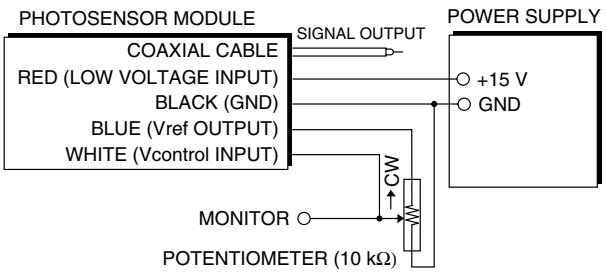
Sensitivity Adjustment Method

Voltage Programming



- Electrically insulate the reference voltage output.
- Adjust the control voltage to adjust the sensitivity.

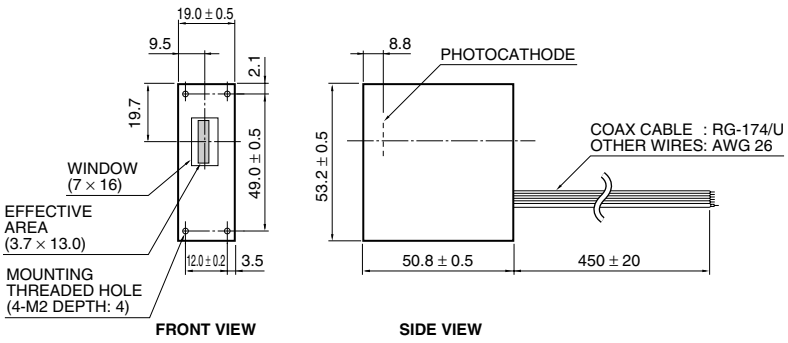
Resistance Programming



When using a potentiometer, adjust sensitivity while monitoring the control voltage.

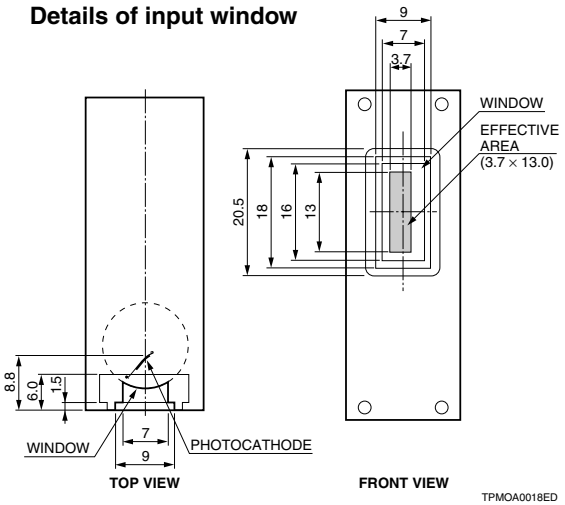
TPMOC0146EB

Dimensional Outlines (Unit: mm)



TPMOA0013ED

Details of input window



TPMOA0018ED