

Metal package PMT

Photosensor Modules H10722 Series



The H10722 series is a photosensor module containing a metal package PMT, a low-power consumption high-voltage power supply circuit, and a low-noise amplifier. The amplifier converts the PMT current output to a voltage output so that the signal can be easily processed. Also, the amplifier is connected close to the PMT anode output pin in order to make the signal less affected by external noise. Four types of photocathodes are available, including a super bialkali photocathode that has higher sensitivity than conventional bialkali photocathodes, an ultra bialkali photocathode that offers even higher sensitivity, a multialkali photocathode with sensitivity extending to the near infrared region, and a red sensitivity enhanced multialkali photocathode.

Product Variations

Parameter	Spectral Response	Current-to-Voltage Conversion Factor*	Frequency Bandwidth*	Features
H10722-110	230 nm to 700 nm	1 V/ μ A	DC to 20 kHz	Super bialkali photocathode, high sensitivity in visible range
H10722-210	230 nm to 700 nm			Ultra bialkali photocathode, high sensitivity in visible range
H10722-01	230 nm to 870 nm			For UV to near IR range
H10722-20	230 nm to 920 nm			Infrared-extended multialkali photocathode with enhanced sensitivity

* The amplifier specification can be changed upon request. Feel free to contact our sales office.
This product can't be used at vacuum environment or reduced pressure environment.

Specifications

Parameter		H10722-110	H10722-210	H10722-01	H10722-20	Unit		
Input Voltage		± 4.5 to ± 5.5				V		
Max. Input Voltage		± 5.5				V		
Max. Input Current *1		+6.2 / -3.5				mA		
Max. Output Signal Voltage *2		+4 (Load resistance 10 k Ω)				V		
Max. Control Voltage		+1.1 (Input Impedance 1 M Ω)				V		
Recommended Control Voltage Adjustment Range		+0.5 to +1.1 (Input Impedance 1 M Ω)				V		
Effective Area		$\phi 8$				mm		
Peak Sensitivity Wavelength		400	400	400	630	nm		
Cathode	Luminous Sensitivity	Min.	80	100	100	μ A/lm		
		Typ.	105	135	200			
	Blue Sensitivity Index (CS 5-58)	Typ.	13.5	15.5	—	—		
	Red / White Ratio	Typ.	—	—	0.2	0.45		
Radiant Sensitivity *3		Typ.	110	130	77	78	mA/W	
Anode	Luminous Sensitivity *4	Min.	8.0×10^7	1.0×10^8	1.0×10^8	3.5×10^8	V/lm	
		Typ.	2.1×10^8	2.7×10^8	4.0×10^8	1.0×10^9		
	Radiant Sensitivity *3 *4		Typ.	220	260	150	150	V/nW
	Voltage Output Depending on PMT Dark Current *4 *5		Typ.	1	1	1	10	mV
		Max.	10	10	10	100		
Current-to-Voltage Conversion Factor		1				V/ μ A		
Output Offset Voltage		Typ. ± 1				mV		
Ripple Noise *4 *6 (peak to peak)		Max. 0.5				mV		
Settling Time *7		Max. 10				s		
Operating Ambient Temperature *8		+5 to +50				$^{\circ}$ C		
Storage Temperature *8		-20 to +50				$^{\circ}$ C		
Weight		Typ. 100				g		

*1: At ± 5 V input voltage, +1.0 V control voltage, and output current equal to dark current *2: At ± 5 V input voltage

*3: Measured at the peak sensitivity wavelength *4: Control voltage = +1.0 V

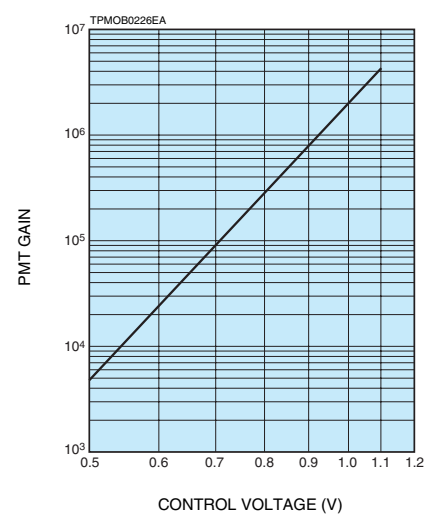
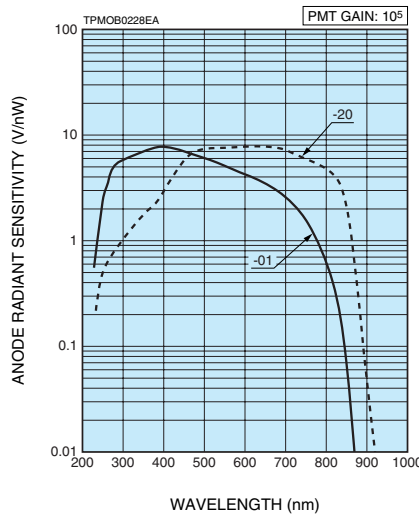
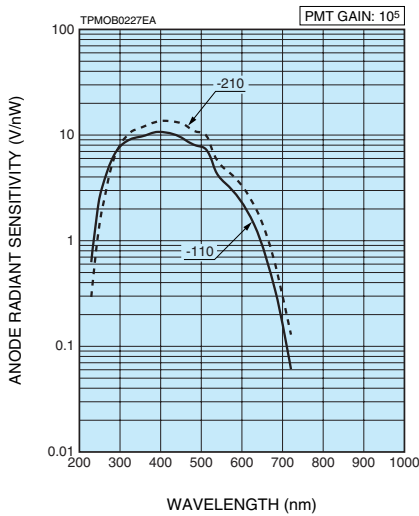
*5: After 30 minutes storage in darkness. The actual output value in darkness is the sum of dark current and offset voltage.

*6: Cable RG-174/U, Cable length 450 mm, Load resistance = 1 M Ω , Load capacitance = 22 pF

*7: 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.

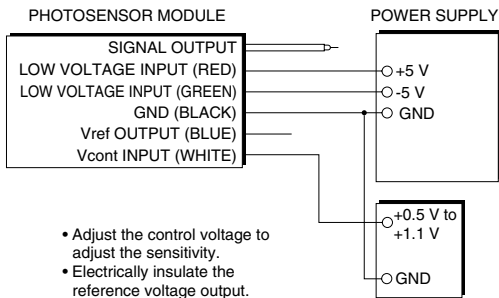
*8: No condensation

Characteristics (Anode radiant sensitivity, PMT gain)

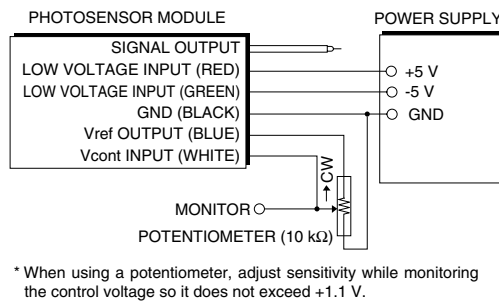


Sensitivity Adjustment Method

VOLTAGE PROGRAMMING

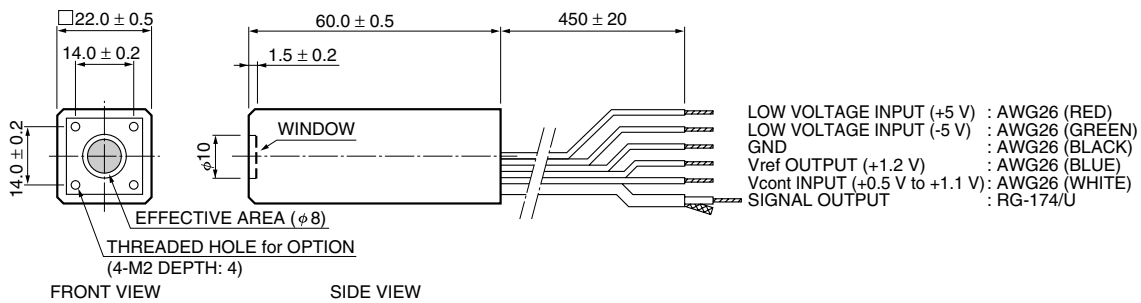


RESISTANCE PROGRAMMING



TPMOC0232EA

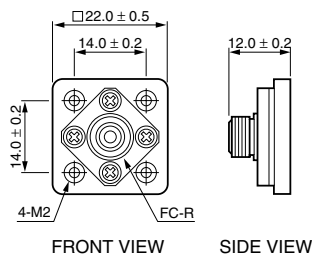
Dimensional Outlines (Unit: mm)



TPMOA0063EA

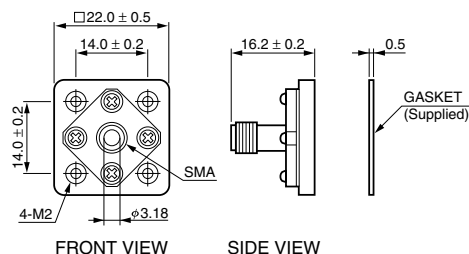
Options (Optical Fiber Adapter) (Unit: mm)

E5776 (FC Type)



TACCA0055EB

E5776-51 (SMA Type)



TACCA0239EB