

Metal package PMT

Photon Counting Head H10682 Series



The H10682 series is a photon counting head device consisting of a metal package photomultiplier tube, along with a high speed photon counting circuit and a high-voltage power supply circuit. The high voltage supply for photomultiplier tube and the discrimination level are preset to optimum values, allowing photon counting measurement by just connecting a +5 V supply.

The H10682-110 has the super bialkali (SBA) photocathode and the H10682-210 has the ultra bialkali (UBA) photocathode, so they have higher sensitivity than conventional photon counting heads.

The H10682 series has also over light detection function to output a signal at the state that an output count falls by excessive incident light. By this signal, measurement data can be judged that it is normal or not.

Product Variations

Type No.	Spectral Response	Features
H10682-110	230 nm to 700 nm	Super Bialkali Photocathode, high sensitivity in visible range
H10682-210	230 nm to 700 nm	Ultra Bialkali Photocathode, high sensitivity in visible range
H10682-01	230 nm to 870 nm	Multialkali Photocathode, For UV to near IR range

This product can't be used at vacuum environment or reduced pressure environment.

Specifications

(at 25 °C)

Parameter			H10682-110	H10682-210	H10682-01	Unit
Input Voltage			+4.75 to +5.25			V
Max. Input Voltage			+6			V
Max. Input Current			40			mA
Effective Area			φ8			mm
Peak Sensitivity Wavelength			400			nm
Count Sensitivity	Typ.	300 nm	3.7×10^5	3.9×10^5	2.7×10^5	$s^{-1} \cdot pW^{-1}$
		400 nm	4.9×10^5	6.1×10^5	3.6×10^5	
		500 nm	3.7×10^5	4.6×10^5	2.8×10^5	
		600 nm	1.1×10^5	1.3×10^5	2.0×10^5	
		700 nm	7.7×10^3	9.1×10^3	1.2×10^5	
		800 nm	—	—	3.0×10^4	
Count Linearity *1			5.0×10^6			s^{-1}
Dark Count *2		Typ.	50	50	600	s^{-1}
		Max.	100	100	1000	
Pulse-pair Resolution			20			ns
Output Pulse Width			10			ns
Output Pulse Height	50 Ω Load	Min.	+2			V
		Typ.	+2.2			
	Un-terminated	Min.	+4			
		Typ.	+4.4			
Signal Output Logic			Positive logic			—
Recommended Load Resistance			50			Ω
Over Light Detection Output *3	High Level	Min.	+3.5			V
	Low Level	Max.	+0.5			
Operating Ambient Temperature *4			+5 to +40			°C
Storage Temperature *4			-20 to +50			°C
Weight			47			g

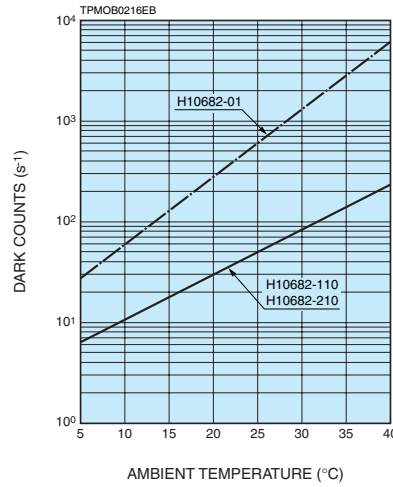
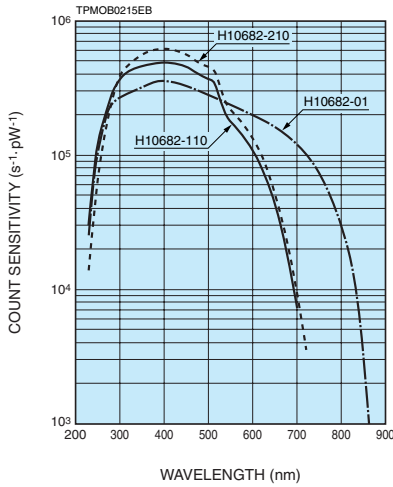
*1: Random pulse, at 10 % count loss

*2: After 30 minutes storage in darkness

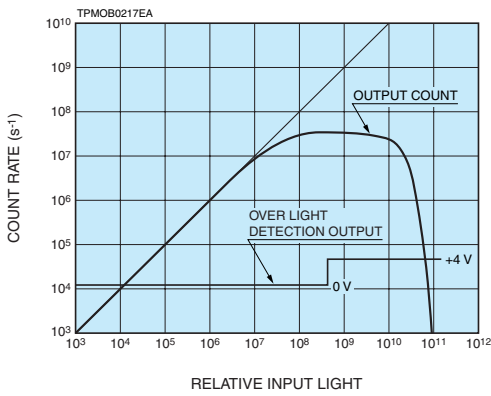
*3: Load resistance 10 kΩ

*4: No condensation

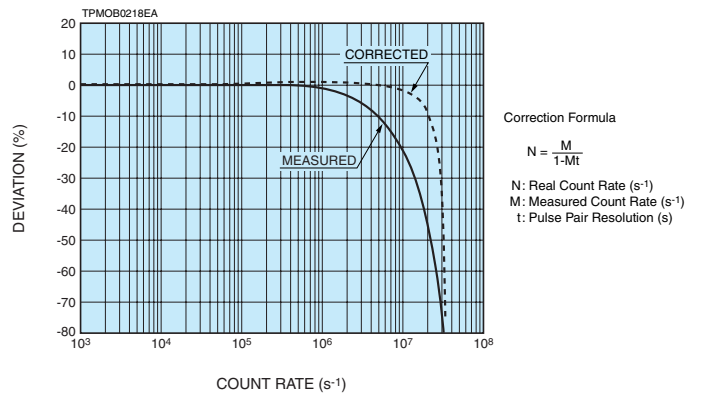
Characteristics (Count sensitivity, Dark count)



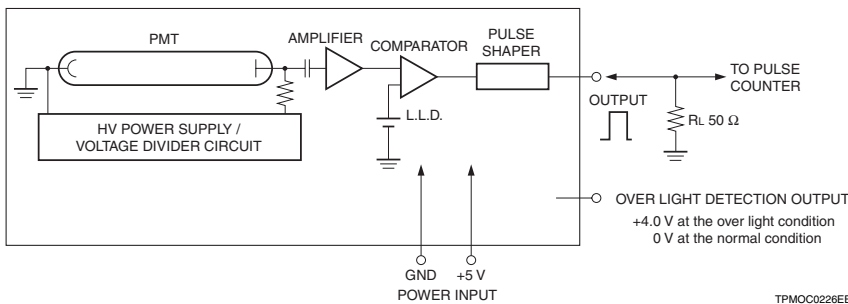
Count Rate Linearity and Over Light Detection Output



Count Rate Linearity Correction



Block Diagram

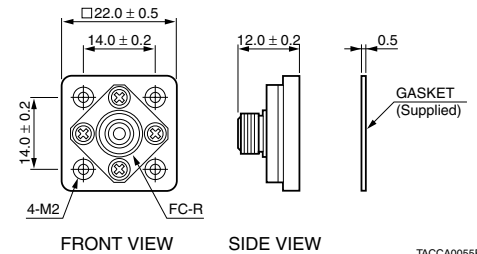


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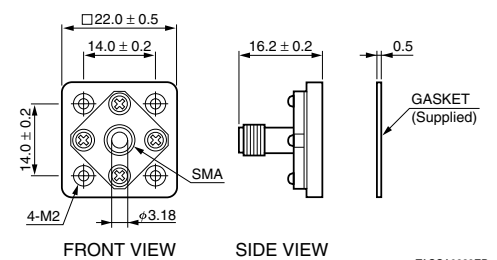
Options

(Optical Fiber Adapter) (Unit: mm)

E5776 (FC Type)



E5776-51 (SMA Type)



Dimensional Outlines (Unit: mm)

