

OVERVIEW

The H13467 series is a wide sensitive area photon counting head device containing a 25 mm (1") diameter head-on photomultiplier tube, a high-voltage power supply circuit and a photon counting 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 H13467 series has a function of over light detection output for indicating the excessive light operating condition.



PRODUCT VARIATIONS

Type No.	Spectral response	Photocathode	Window material	Notes
H13467-01	300 nm to 650 nm	Low noise bialkali	Borosilicate glass	Low dark count. For visible range
H13467-02	300 nm to 650 nm	Bialkali	Borosilicate glass	For visible range
H13467-03	300 nm to 850 nm	Multialkali	Borosilicate glass	For visible to near IR range

SPECIFICATIONS

(at +25 °C)

Parameter			H13467-01	H13467-02	H13467-03	Unit
Input voltage			+4.75 to +5.25			V
Max. input voltage			+6			V
Max. input current			100			mA
Effective area		Min.	φ22			mm
Spectral response			300 to 650		300 to 850	nm
Peak sensitivity wavelength			375	420	420	nm
Count sensitivity	300 nm	Typ.	1.4×10^5	2.3×10^5	2.1×10^5	s ⁻¹ ·pW ⁻¹
	400 nm	Typ.	2.7×10^5	4.1×10^5	2.5×10^5	
	500 nm	Typ.	1.7×10^5	3.4×10^5	2.0×10^5	
	600 nm	Typ.	4.6×10^4	5.7×10^4	1.3×10^5	
	700 nm	Typ.	—	—	7.8×10^4	
Count linearity *1			6.0×10^6			s ⁻¹
Dark count *2		Typ.	15	60	5000	s ⁻¹
		Max.	80	300	15000	
Pulse-pair resolution			18			ns
Output pulse width			9			ns
Output pulse height	50 Ω load	Min.	+2.0			V
	Un-terminated	Min.	+4.0			
Recommended load resistance			50			Ω
Signal output logic			Positive logic			—
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			111			g

*1: Random pulse, at 10 % count loss *2: After 30 minutes storage in darkness *3: Load resistance 10 kΩ *4: No condensation
H13467 series can't be used at vacuum environment or reduced pressure environment.

PHOTON COUNTING HEADS H13467 SERIES

Figure 1: Count sensitivity

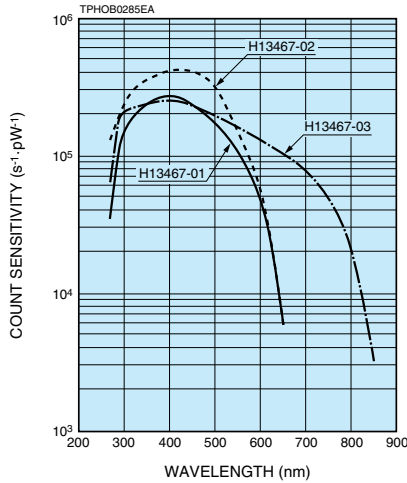


Figure 2: Dark count

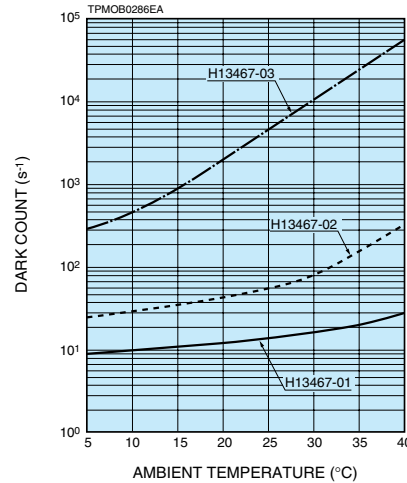


Figure 3: Output waveform

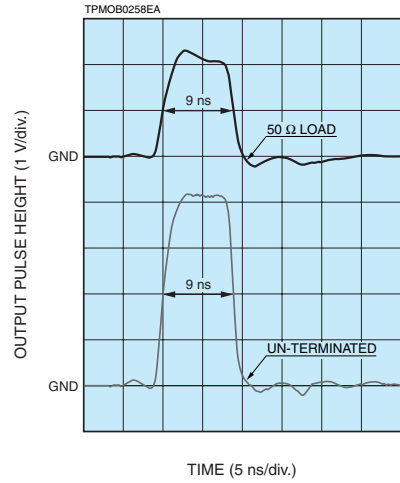


Figure 4: Count rate linearity and over light detection output

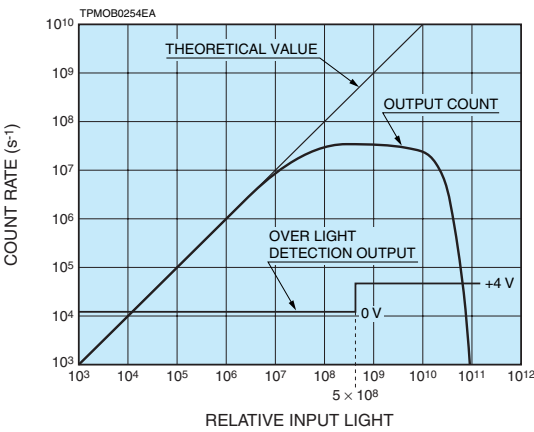


Figure 5: Count rate linearity correction

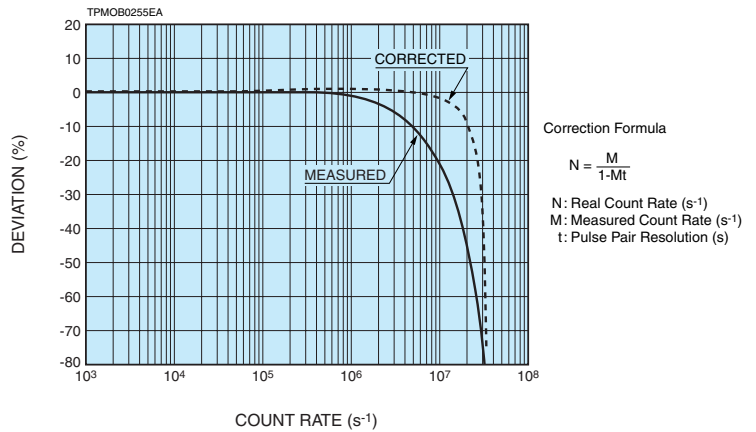


Figure 6: Block diagram

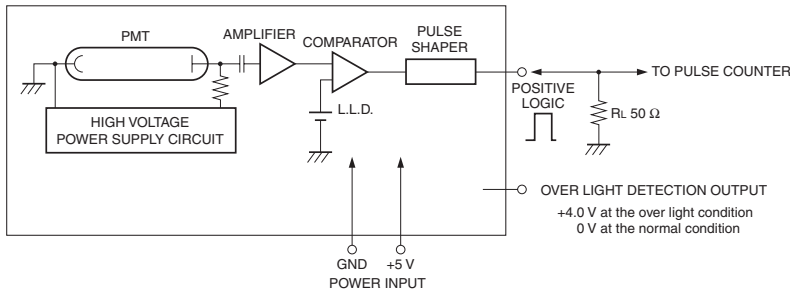
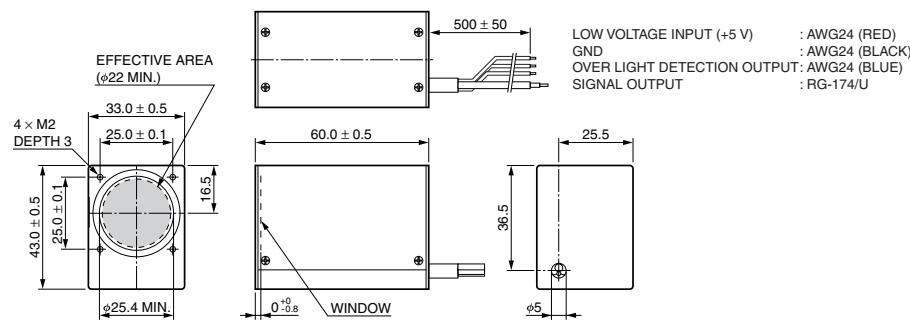


Figure 7: Dimensional outline (Unit: mm)



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