Metal Package PMT with Gate Function

Photosensor Modules H11526 Series

The H11526 series is a photosensor module that allows gate operation. The combination of built-in metal package PMT and gate circuit makes this module compact yet still provides excellent characteristics: 100 ns minimum gate width, 10 kHz repetition rate. This module also contains a high-voltage power supply so that PMT gain can be varied by simply adjusting the control voltage. The internal protection monitor issues an error signal if high-intensity light enters the module.

Product Variations

Parameter	Spectral Response	Features
H11526-110-NN / H11526-110-NF	230 nm to 700 nm	Super bialkali photocathode, High sensitivity in visible range
H11526-01-NN / H11526-01-NF	230 nm to 870 nm	For UV to near IR range
H11526-20-NN / H11526-20-NF	230 nm to 920 nm	Extended red multialkali photocathode with enhanced sensitivity

Gate Mode NN: Normally ON
NF: Normally OFF

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

Specifications

(at +25 °C)

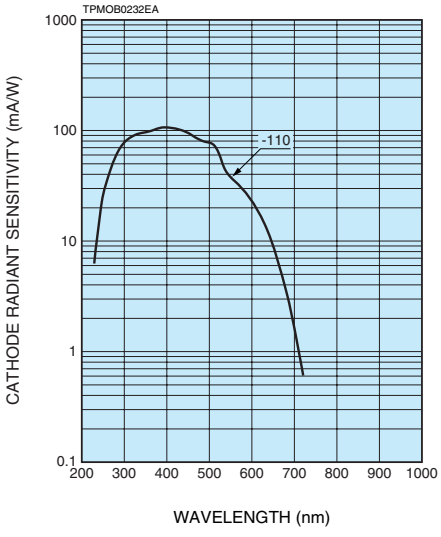
Parameter			H11526 Series		Unit
Suffix			-110-NN / -01-NN / -20-NN	-110-NF / -01-NF / -20-NF	—
Gate Mode	Mode		Normally ON	Normally OFF	—
	Gate Width (FWHM)		100 ns to DC		—
	Rise Time		8	70	ns
	Fall Time		70	8	ns
	Repetition Rate	Max.	10		kHz
	Switching Ratio		10^6		—
	Switching Noise *1	Max.	30		mV
	Delay Time	Max.	80	180	ns
	Gate Jitter	Max.	1		ns
Gate Signal Input	Level		C-MOS (High level: +3.5 V to +5 V)		—
	Input Impedance		10		kΩ
	Pulse Width		20 ns to DC		—

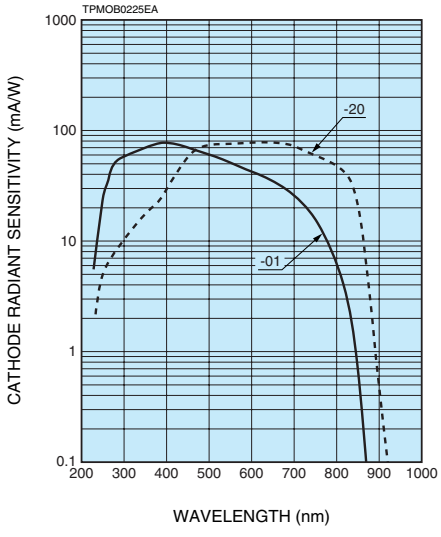
*1: Load resistance = 50 Ω (peak to peak)

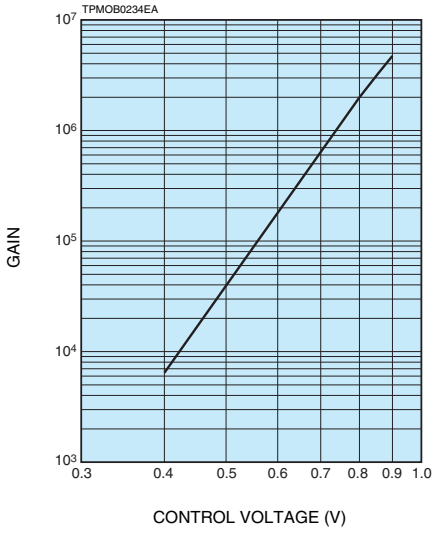
Parameter			H11526 Series			Unit
Suffix			-110-NN / -110-NF	-01-NN / -01-NF	-20-NN / -20-NF	—
Input Voltage			+14.5 to +15.5			V
Max. Input Voltage			+16			V
Max. Input Current			60			mA
Max. Surge Current			300			mA
Max. Output Signal Current			100			μA
Pulse Linearity (±5 % Deviation) *2			30			mA
Max. Control Voltage			+0.9 (Input Impedance 10 kΩ)			V
Recommended Control Voltage Adjustment Range			+0.4 to +0.9 (Input Impedance 10 kΩ)			V
Effective Area			ϕ8			mm
Peak Sensitivity Wavelength			400	400	630	nm
Cathode	Luminous Sensitivity	Min.	80	100	350	μA/lm
		Typ.	105	200	500	
	Blue Sensitivity Index (CS 5-58)	Typ.	13.5	—	—	—
	Red / White Ratio	Typ.	—	0.2	0.45	—
	Radiant Sensitivity *3	Typ.	110	77	78	mA/W
Anode	Luminous Sensitivity *2	Min.	80	100	350	A/lm
		Typ.	210	400	1000	
	Radiant Sensitivity *2 *3	Typ.	2.2×10^5	1.5×10^5	1.5×10^5	A/W
	Dark Current *2 *4	Typ.	1	1	10	nA
		Max.	10	10	100	
Time Response *2	Rise Time	Typ.	0.57			ns
	Transit Time	Typ.	2.7			ns
	T.T.S.	Typ.	0.2			ns
Ripple Noise *2 *5 (peak to peak)		Max.	5			mV
Settling Time *6		Max.	2			s
Operating Ambient Temperature *7			+5 to +45			°C
Storage Temperature *7			-20 to +50			°C
Weight			105			g

*2: Control voltage = +0.8 V
*3: Measured at the peak sensitivity wavelength
*4: After 30 minutes storage in darkness.
*5: Cable RG-174/U, Cable length 450 mm, Load resistance = 1 MΩ, Load capacitance = 22 pF
*6: The time required for the output to reach a stable level following a change in the control voltage from +0.8 V to +0.4 V.
*7: No condensation

Characteristics (Cathode radiant sensitivity, Gain)







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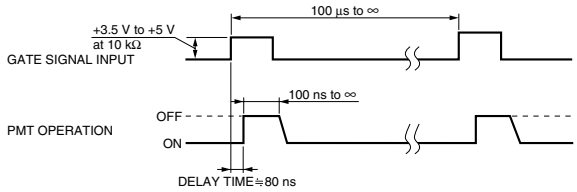
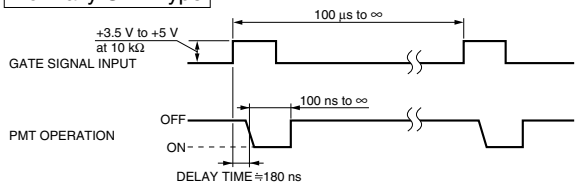
Gate Timing Chart

Normally ON Type



Normally OFF Type



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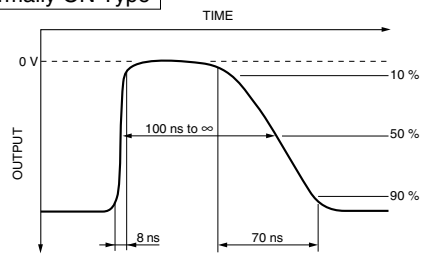
Output Examples

Normally ON Type



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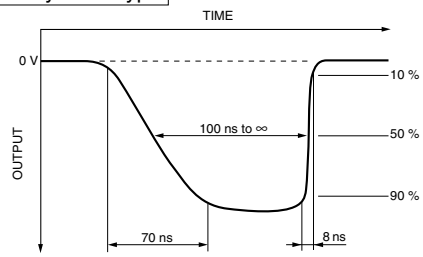
Normally OFF Type



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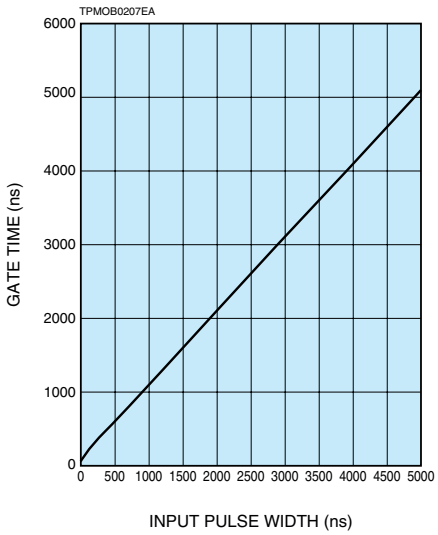
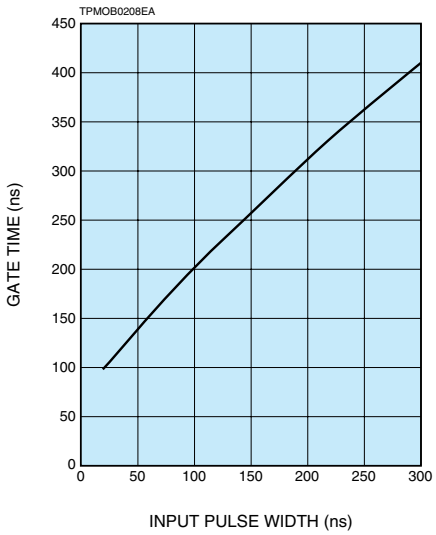
Gate Time Characteristics

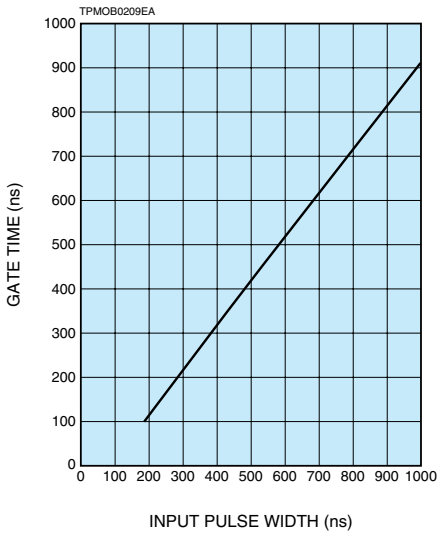
Normally ON Type



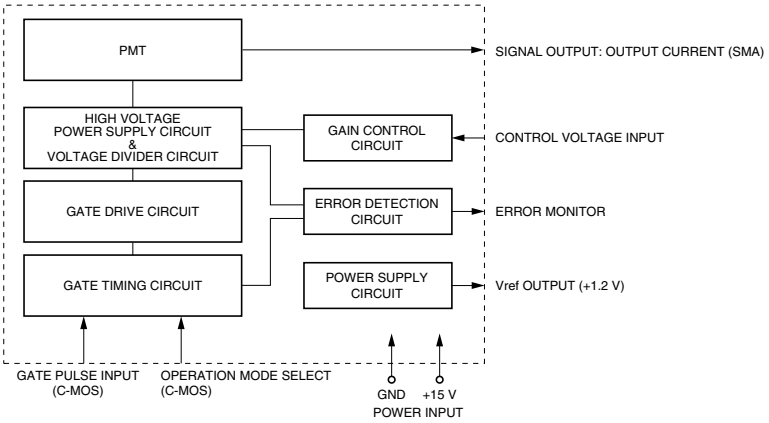
Normally ON Type closeup



Normally OFF Type



Block Diagram



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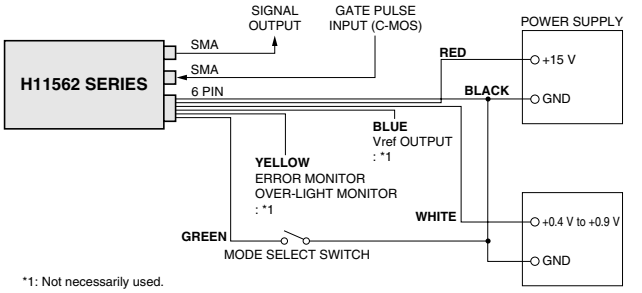
Sensitivity Adjustment Method

Voltage Programming



*1: Not necessarily used.

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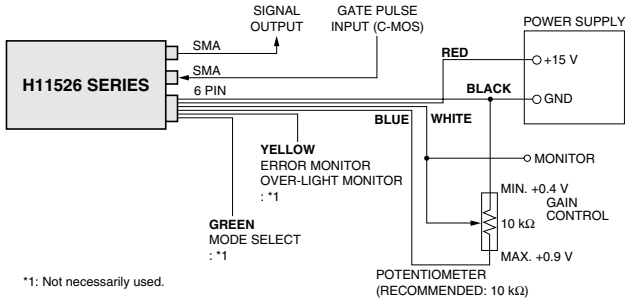
Resistance Programming



*1: Not necessarily used.

When using a potentiometer, adjust sensitivity while monitoring the control voltage so it does not exceed +0.9 V.

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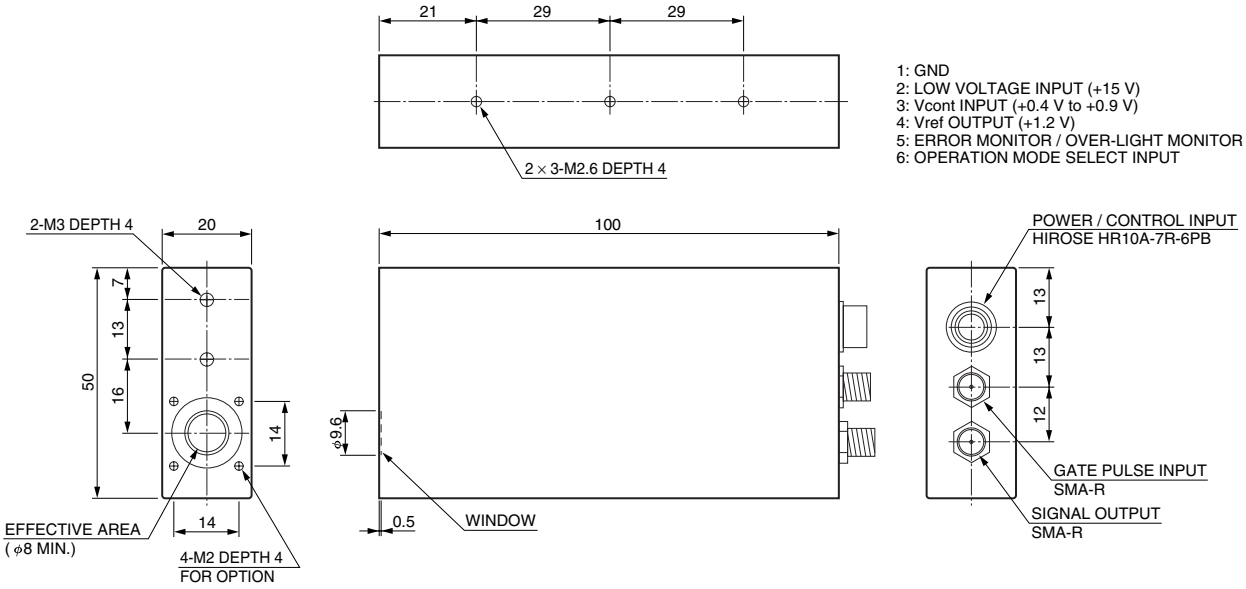
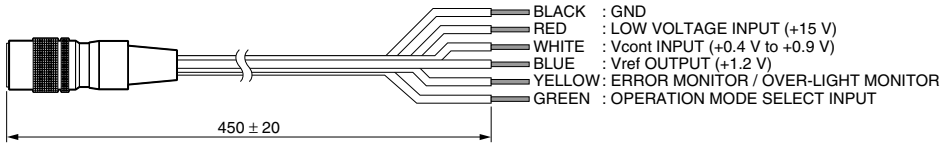
Dimensional Outlines (Unit: mm)



Power cable with connector (HIROSE HR10A-7P-6S) is supplied with H11526 series



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