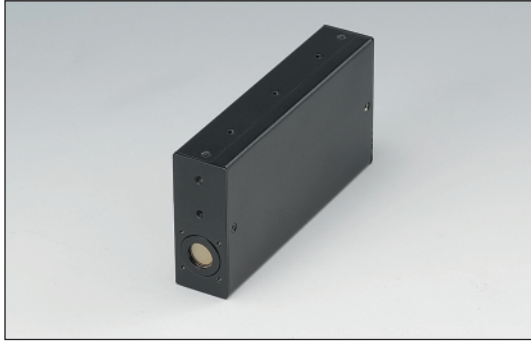


PMT Module with Gate Function

Photosensor Modules H11526 Series

PRELIMINARY DATA



The H11526 series is a photosensor module that allows high-speed gate operation at a high repetition rate. 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

Specifications

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) *1		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 *2		Typ.	110	77	78	mA/W
Anode	Luminous Sensitivity *1	Min.	80	100	350	A/lm
		Typ.	210	400	1000	
	Radiant Sensitivity *1 *2	Typ.	2.2 × 10 ⁵	1.5 × 10 ⁵	1.5 × 10 ⁵	A/W
	Dark Current *1 *3	Typ.	1	1	10	nA
Max.		10	10	100		
Time Response *1	Rise Time	Typ.	0.57		ns	
	Transit Time	Typ.	2.7		ns	
	T.T.S.	Typ.	0.2		ns	

*1: Control voltage = +0.8 V

*2: Measured at the peak sensitivity wavelength

*3: After 30 minutes storage in darkness

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 *4	Max.	30	mV
	Delay Time	Max.	80	180
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		—
Ripple Noise *1 *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

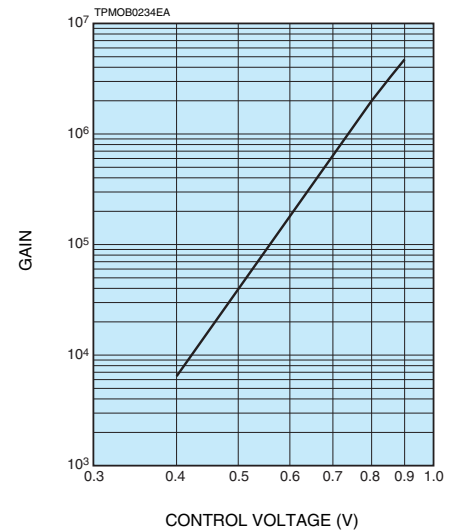
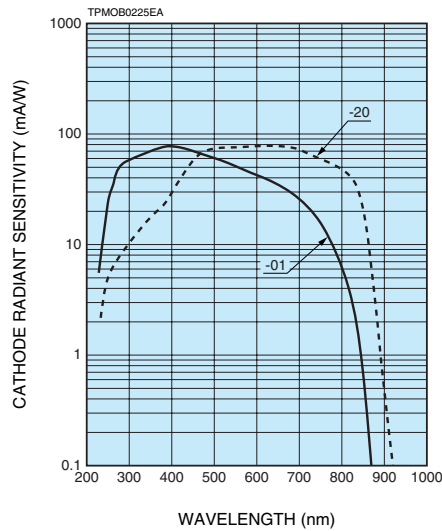
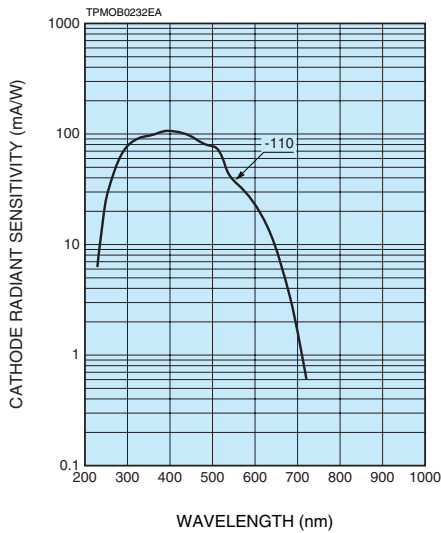
*4: Load resistance = 50 Ω (peak to peak)

*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

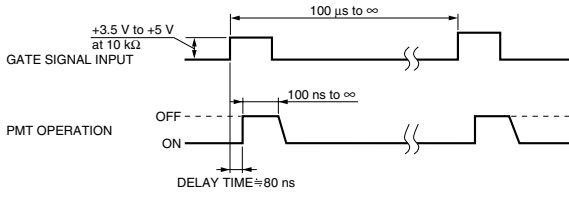
*7: No condensation

Characteristics (Cathode radiant sensitivity, Gain)

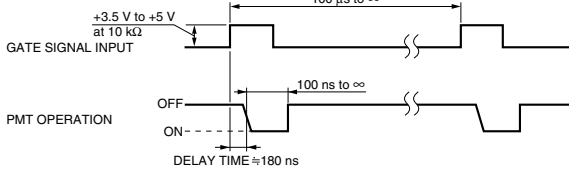


Gate Timing Chart

Normally ON Type



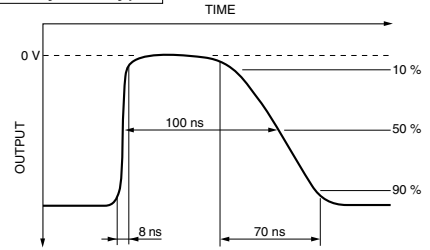
Normally OFF Type



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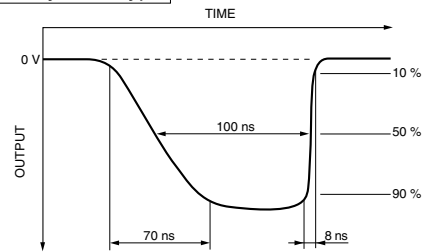
Output Examples

Normally ON Type



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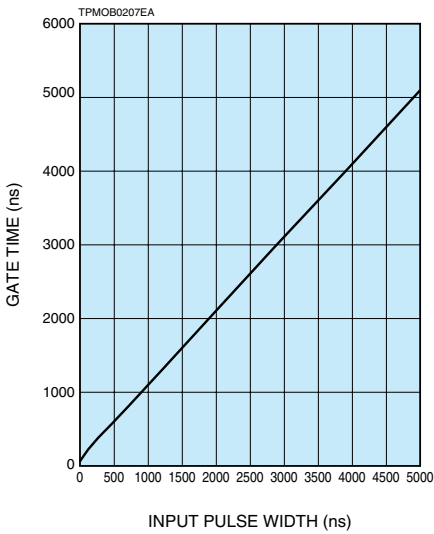
Normally OFF Type



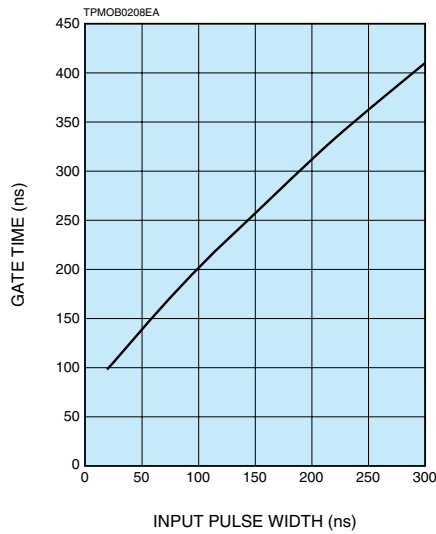
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Gate Time Characteristics

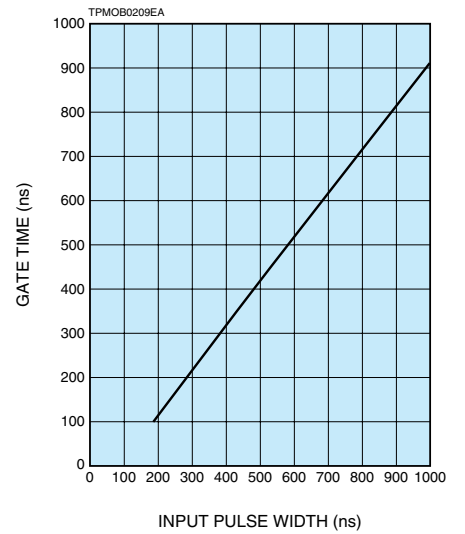
Normally ON Type



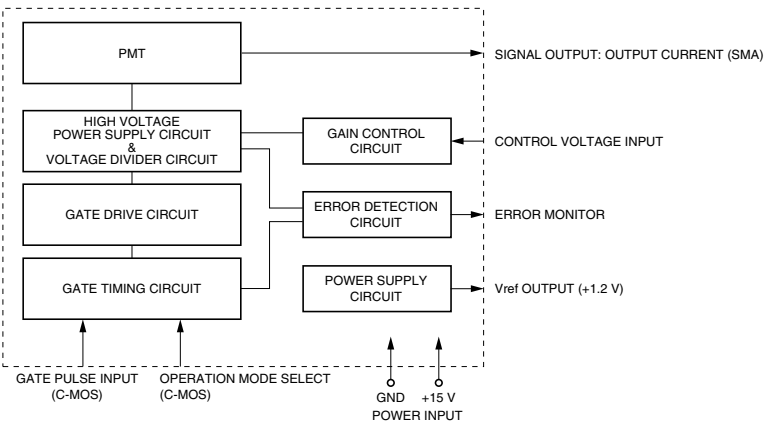
Normally ON Type closeup



Normally OFF Type



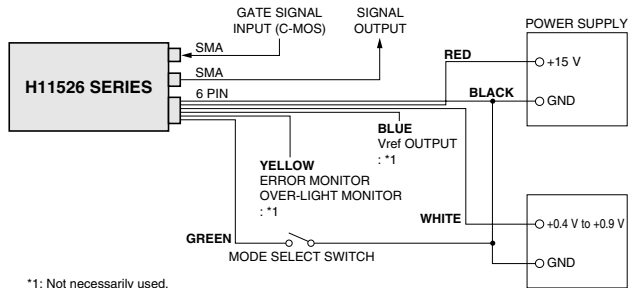
Block Diagram



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Sensitivity Adjustment Method

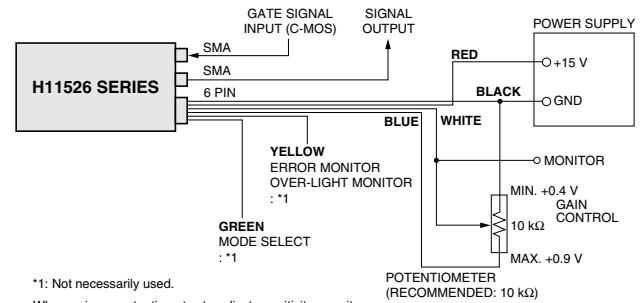
Voltage Programming



*1: Not necessarily used.

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Resistance Programming

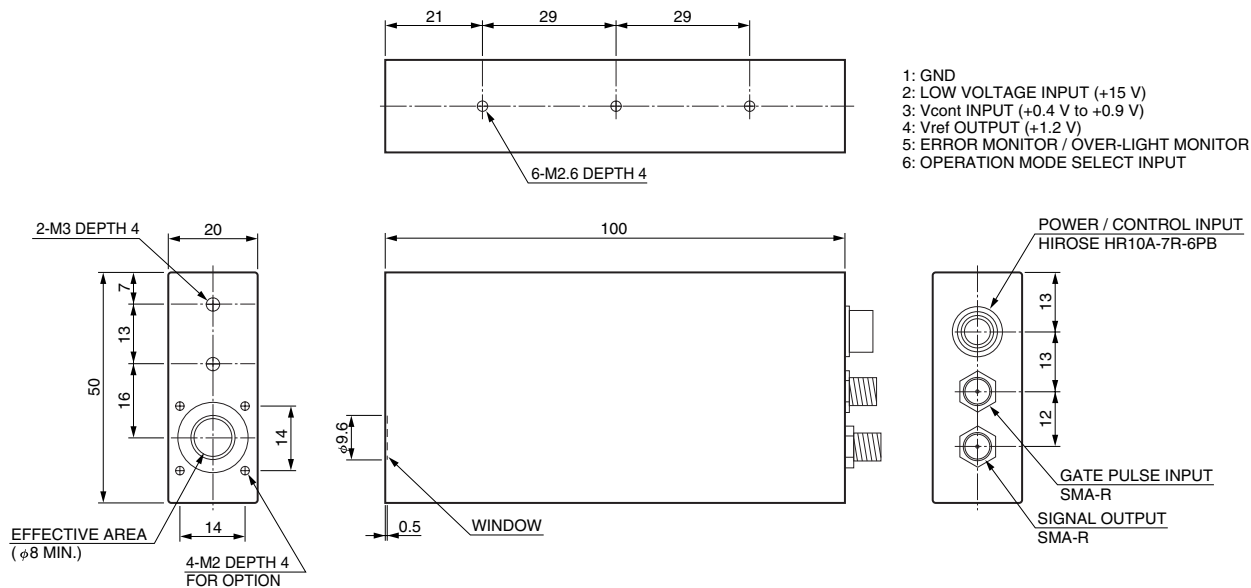


*1: Not necessarily used.

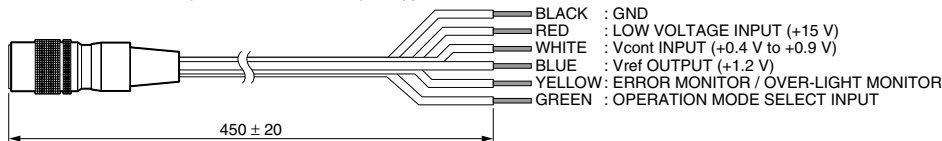
When using a potentiometer to adjust sensitivity, monitor the control voltage so it does not exceed +0.9 V.

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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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