

# 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		—
	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 <sup>6</sup>	—
	Switching Noise *1	Max.	30	mV
	Delay Time	Max.	80	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)

# Photosensor Module with Gate Function

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 <sup>5</sup>	1.5 × 10 <sup>5</sup>	1.5 × 10 <sup>5</sup>	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

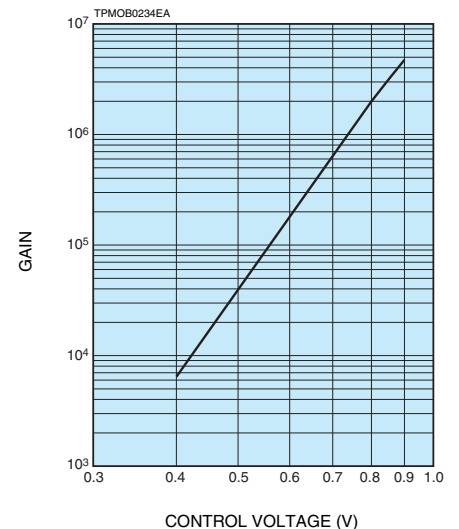
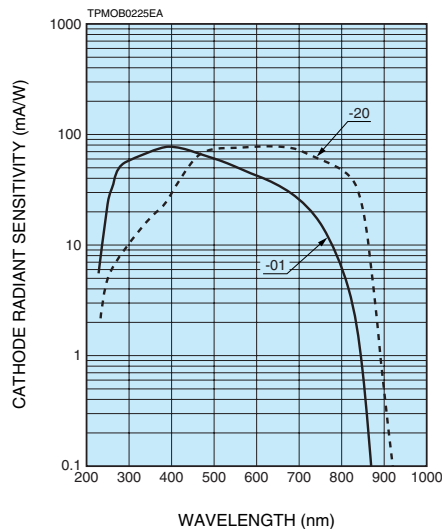
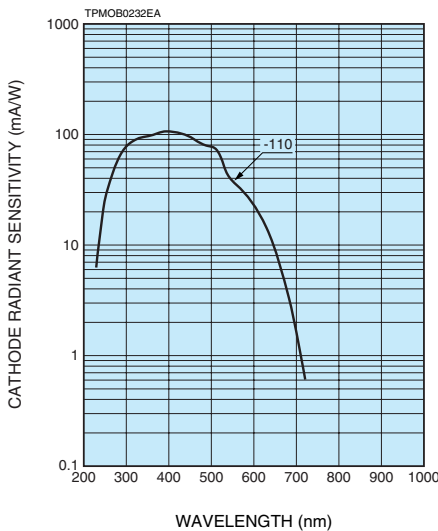
\*4: After 30 minutes storage in darkness.

\*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

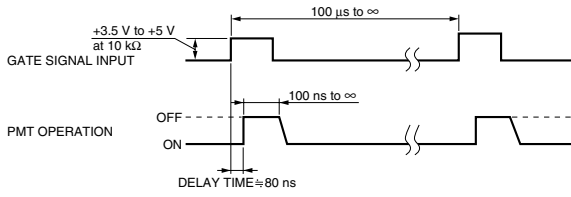
## Characteristics (Cathode radiant sensitivity, Gain)



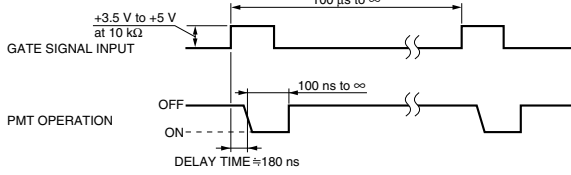
# Metal Package PMT with Gate Function

## Gate Timing Chart

Normally ON Type



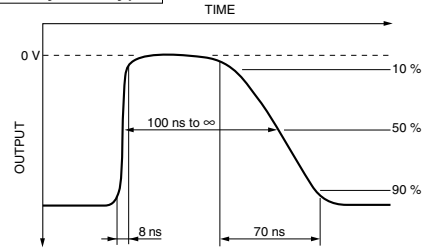
Normally OFF Type



TPMOC0200EA

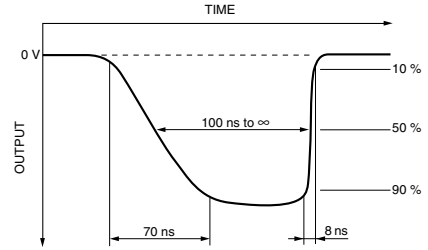
## Output Examples

Normally ON Type



TPMOC0205EA

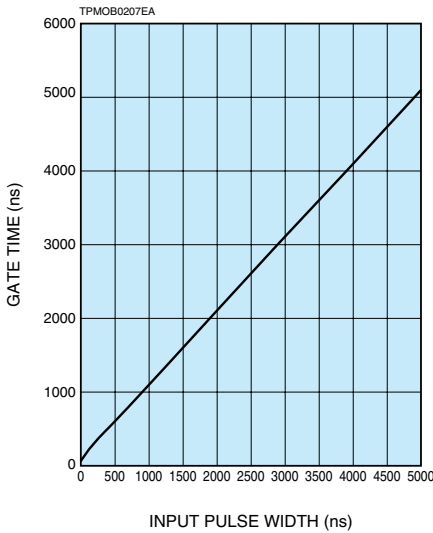
Normally OFF Type



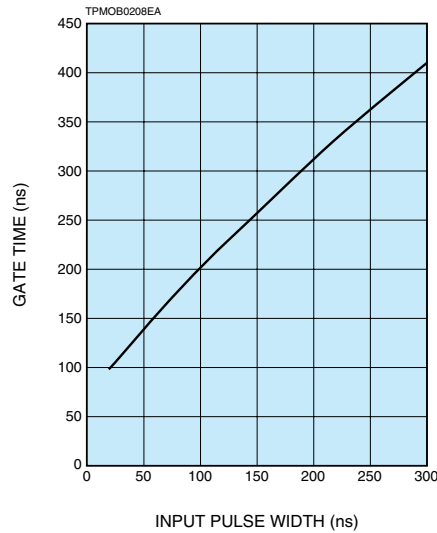
TPMOC0206EA

## Gate Time Characteristics

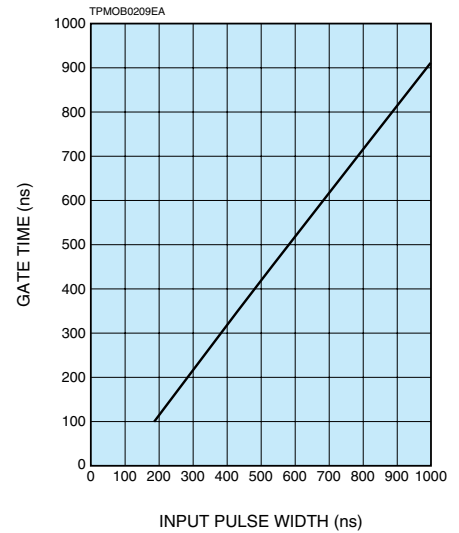
Normally ON Type



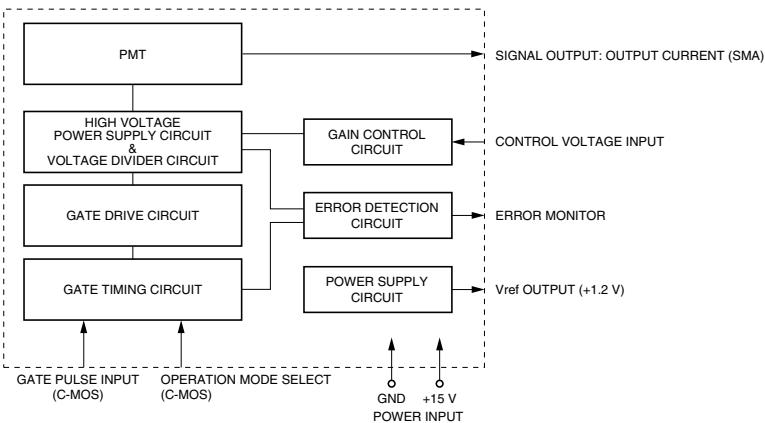
Normally ON Type closeup



Normally OFF Type



## Block Diagram

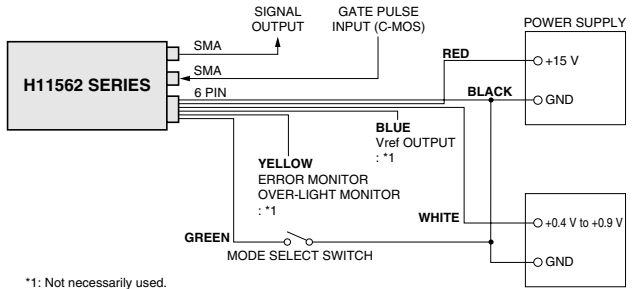


TPMOC0201EB

# Photosensor Module with Gate Function H11526 Series

## Sensitivity Adjustment Method

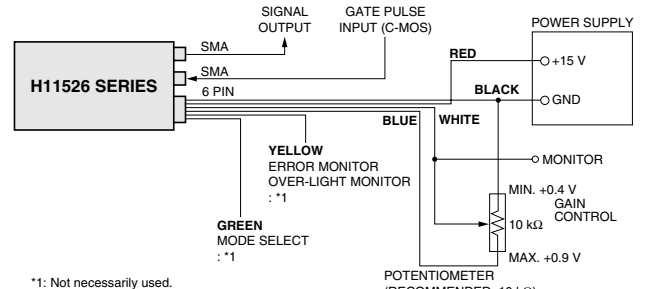
### Voltage Programming



\*1: Not necessarily used.

TPMOC0236EA

### Resistance Programming

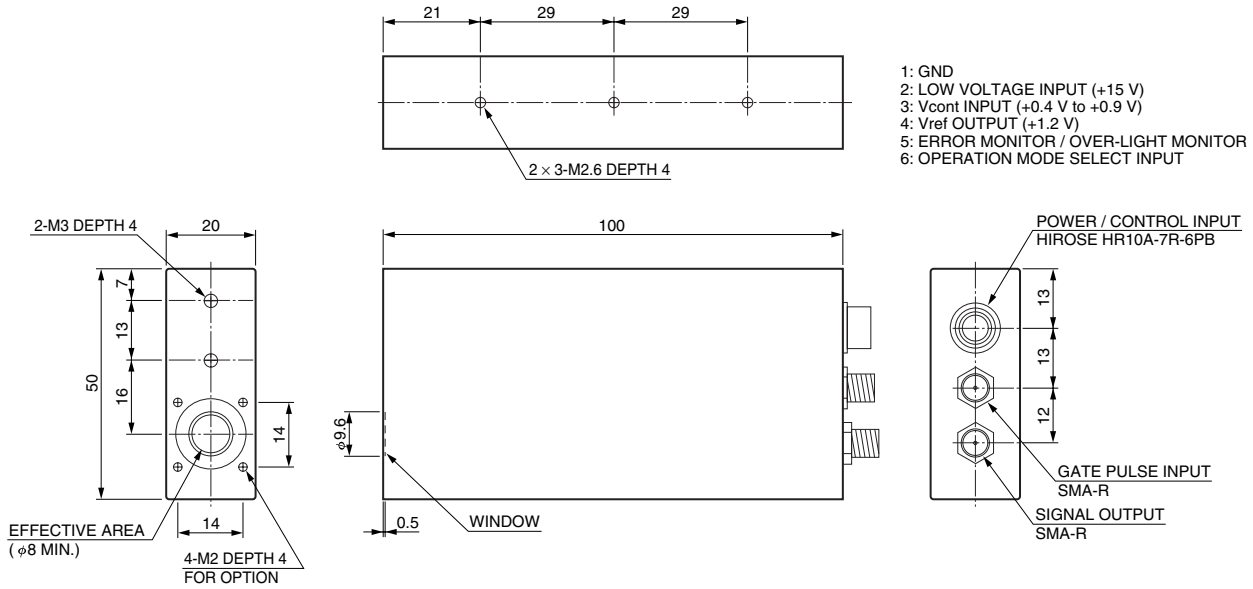


\*1: Not necessarily used.

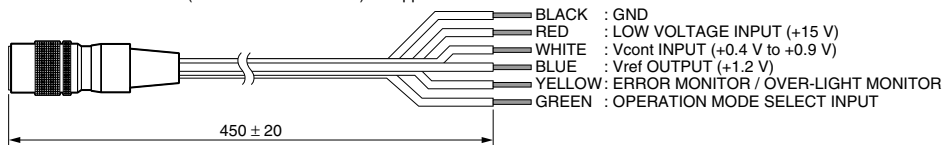
When using a potentiometer, adjust sensitivity while monitoring the control voltage so it does not exceed +0.9 V.

TPMOC0237EA

## Dimensional Outlines (Unit: mm)



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



TPMOA0071EA