

## FEATURES

- High quantum efficiency: GaAsP photocathode
- Compact size
- Gate function



## SPECIFICATIONS

(at +25 °C)

Parameter				H12056-40	H12056P-40	Unit
Input voltage				+4.5 to +5.5		V
Max. input voltage				+6		V
Max. input current <sup>①</sup>				10		mA
Max. output signal current <sup>②</sup>				40		μA
Max. control voltage				+0.9 (Input impedance 1 MΩ)		V
Recommended control voltage adjustment range				+0.5 to +0.8 (Input impedance 1 MΩ)		V
Effective area				φ5		mm
Photocathode material				GaAsP		—
Spectral response				300 to 740		nm
Peak quantum efficiency wavelength				520		nm
Cathode	Quantum efficiency	at peak quantum efficiency wavelength	Min.	40		%
			Typ.	45		
	Radiant sensitivity	at peak quantum efficiency wavelength	Min.	168		mA/W
			Typ.	189		
Anode	Radiant sensitivity <sup>①</sup>	at peak quantum efficiency wavelength	Min.	1.0 × 10 <sup>5</sup>	1.7 × 10 <sup>5</sup>	A/W
			Typ.	1.9 × 10 <sup>5</sup>	3.8 × 10 <sup>5</sup>	
	Dark current <sup>①③</sup>		Typ.	3		nA
			Max.	10		
	Dark count <sup>①③</sup>		Typ.	—		s <sup>-1</sup>
			Max.	6000		
Gain <sup>②</sup>		Min.	6.0 × 10 <sup>5</sup>	1.0 × 10 <sup>6</sup>	—	
		Typ.	1.0 × 10 <sup>6</sup>	2.0 × 10 <sup>6</sup>		
Rise time <sup>②</sup>			Typ.	1.0		ns
Ripple noise <sup>②④</sup> (peak to peak)			Max.	0.6		mV
Settling time <sup>⑤</sup>			Max.	10		s
Operating ambient temperature <sup>⑥</sup>				+5 to +35		°C
Storage temperature <sup>⑥</sup>				-20 to +50		°C
Weight				85		g

**NOTE:** ① At +5 V input voltage and +0.8 V control voltage in darkness

② Control voltage = +0.8 V

③ After 30 min storage in darkness

④ Cable RG-174/U, Cable length 450 mm, Load resistance=1 MΩ, Load capacitance=14 pF

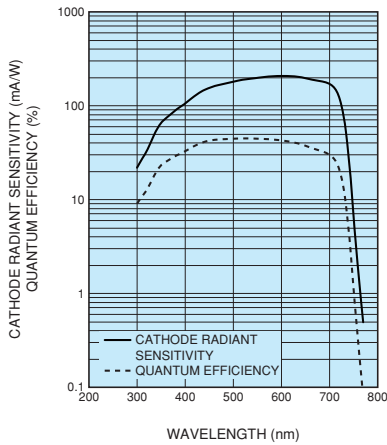
⑤ The time required for the output to reach a stable level following a change in the control voltage from +0.9 V to +0.5 V.

⑥ No condensation

# PHOTOSENSOR MODULE H12056-40 SERIES

Figure 1: Characteristics

## ● SPECTRAL RESPONSE



## ● GAIN

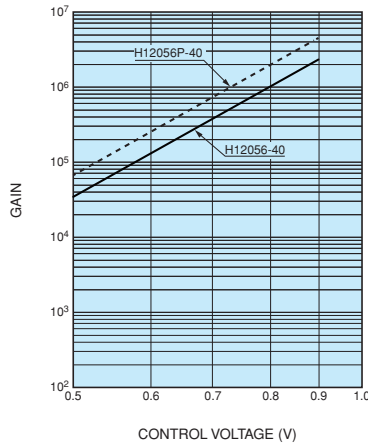


Figure 2: Sensitivity adjustment method

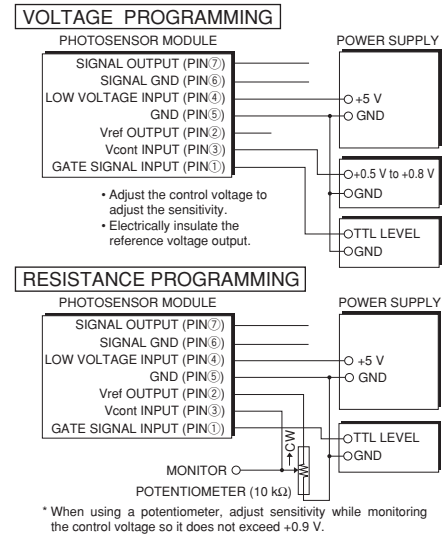


Figure 3: Gate characteristics

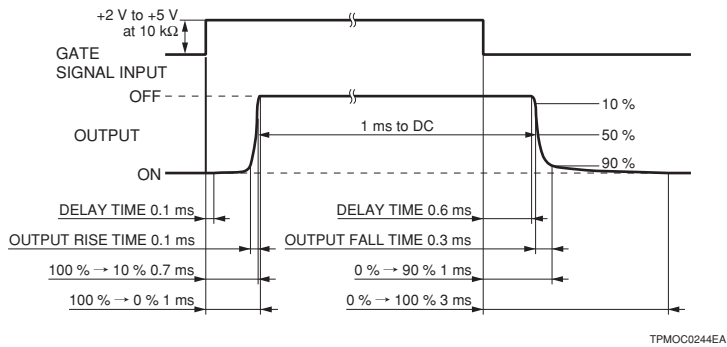
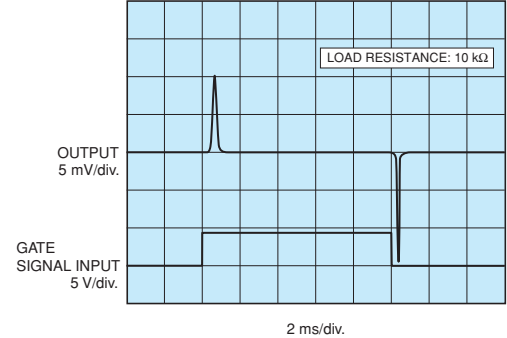


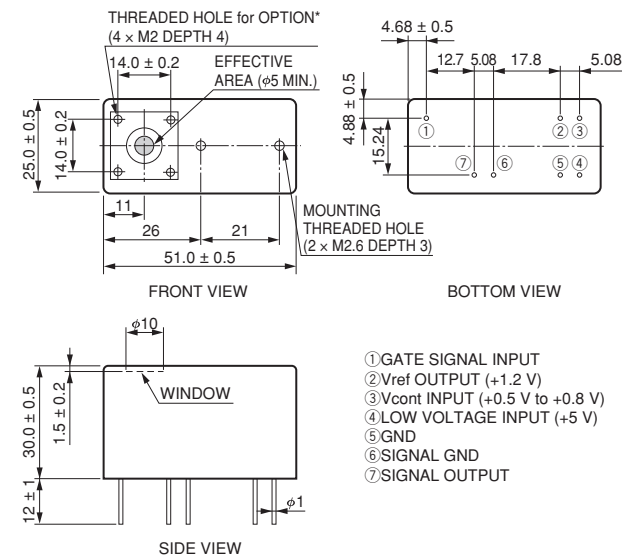
Figure 4: Switching noise characteristics



## GATE SPECIFICATIONS

	Parameter	Description / Value	Unit
Gate mode	Mode	Normally ON	—
	Gate width (FWHM)	1 ms to DC	—
	Rise time	Typ. 0.1	ms
	Fall time	Typ. 0.3	ms
	Repetition rate	Max. 300 Hz (Gate width 1 ms)	—
	Switching ratio	Typ. 10 <sup>3</sup>	—
	Delay time	Typ. 0.1 (At rise), 0.6 (At fall)	ms
Gate signal input	Level	TTL level (High level: +2 V to +5 V)	—
	Input impedance	10	kΩ

Figure 5: Dimensional outline (Unit: mm)



\* Option: Optical fiber adapter (E5776 / E5776-51), C-mount adapter (A9865)

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