HAMAMATSU

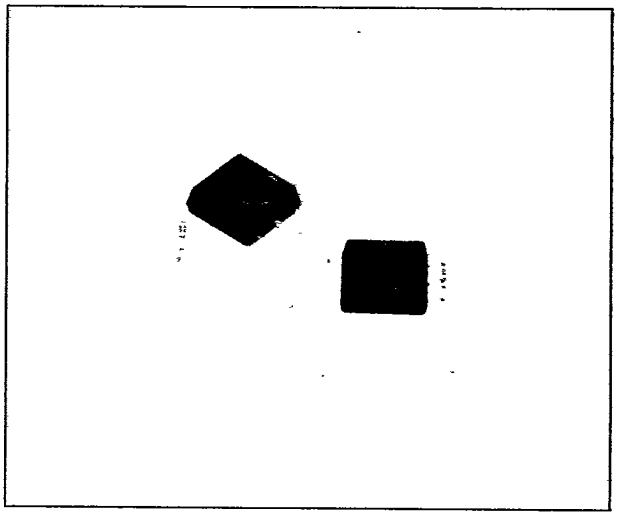
TECHNICAL DATA

PHOTOREFLECTOR P3062-01

T-41-73

Photo IC output (digital output), Long focal distance (3mm), Thin package (4.0 x 4.2 x 1.7mm)

The P3062-01 is a photoreflector combining a high-power infrared LED and a single chip photo IC consisting of a high-sensitivity photodiode, an amplifier, a schmitt trigger, an output transistor, etc. It features an ultra-compact package measuring 4.0 x 4.2 x 1.7mm. Moreover, since the lens is provided, the focal distance extends to 3mm, so that detection is possible over longer distances.



FEATURES

- **Photo IC output (digital output)**
- **Miniature size : 4.0 x 4.2 x 1.7mm**
- **Long focal distance : 3mm**
- **Visible-cut type**
- **High sensitivity**

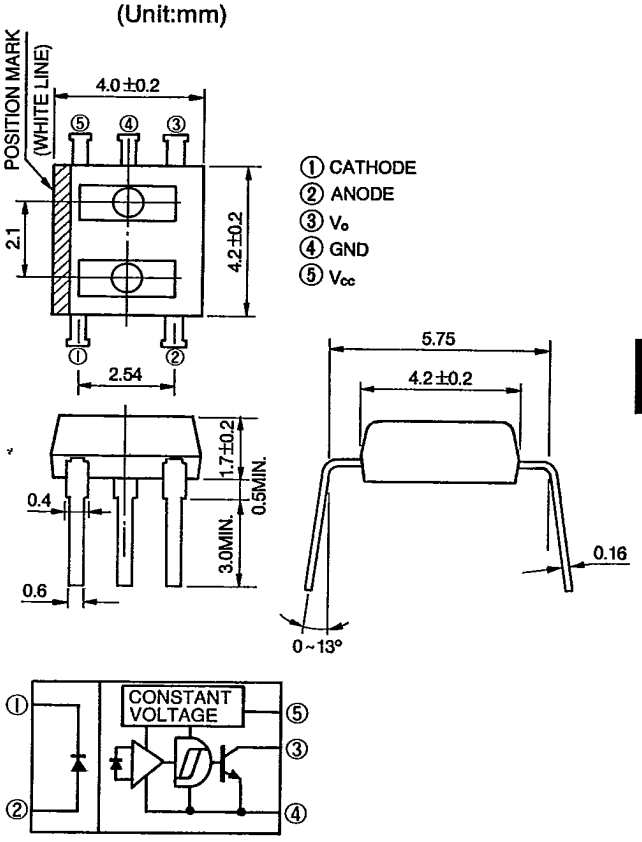
APPLICATIONS

- **Position detection of AF lens**
- **Detection of light protection notches on floppy disc**
- **Paper detection in copiers and printers**
- **Tape-end detection in VTRs and cassette decks**

MAXIMUM RATINGS (Ta = 25°C)

Parameters		Symbols	Ratings	Unit
Input	Forward Current	I_F	50	mA
	Reverse Voltage	V_R	5	V
	Power Dissipation	P	75	mW
Output	Supply Voltage	V_{CC}	16	V
	Low Level Output Current	I_{OL}	50	mA
	Power Dissipation	P_O	150	mW
Operating Temperature		T_{opr}	−25 ~ +85	°C
Storage Temperature		T_{stg}	−40~ +100	°C
Soldering Temperature		260°C, within 5 seconds		

Figure 1: Dimensional Outline and Pin Connection (Unit:mm)



PHOTOREFLECTOR P3062-01

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

	Parameters	Symbols	Conditins	Min.	Typ.	Max.	Unit
Input	Forward Voltage	V_F	I_F = 20mA	–	1.3	1.6	V
	Reverse Current	I_R	V_R = 5V	–	–	10	μA
	Terminal Capacitance	C_t	V = 0, f = 1kHz	–	30	–	pF
Output	Operating Supply Voltage	V_{CC}		4.5	–	16	V
	Low Level Output Voltage	V_{OL}	V_{CC} = 5V, I_{OL} = 16mA, I_F = 0mA	–	0.1	0.4	V
	High Level Output Current	I_{OH}	V_{CC} = V_O = 15V, I_F = 20mA	–	–	100	μA
	Low Level Supply Current	I_{CCL}	V_{CC} = 5V, I_F = 0mA	–	5.2	12	mA
	High Level Supply Current	I_{CCH}	V_{CC} = 5V, I_F = 20mA	–	3.2	10	mA
Transfer Characteristics	L→H Threshold Input Current (1)	I_{FLH}	V_{CC} = 5V, R_L = 280Ω, d = 3mm Reflected surface = white paper (reflectivity 90% min.)	–	– –	20 –	mA
	Hysteresis		I_{FHL}/I_{FLH}	–	0.9	–	–
	L→H Propagation Delay Time (2)	t_{PLH}	V_{CC} = 5V, I_F = 20mA R_L = 280Ω	–	2.0	9	μs
	H→L Propagation Delay Time (2)	t_{PHL}		–	4.0	15	μs
	Rise Time (2)	t_r		–	0.15	–	μs
	Fall Time (2)	t_f		–	0.05	–	μs

(1) Connect a capacitor of more than 0.01 μF between Vcc and GND.

(2) Response Time Measuring Circuit

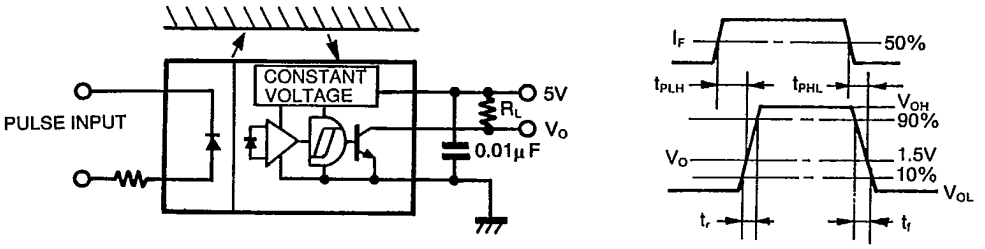


Figure 2: LED Allowable Forward Current vs. Temperature

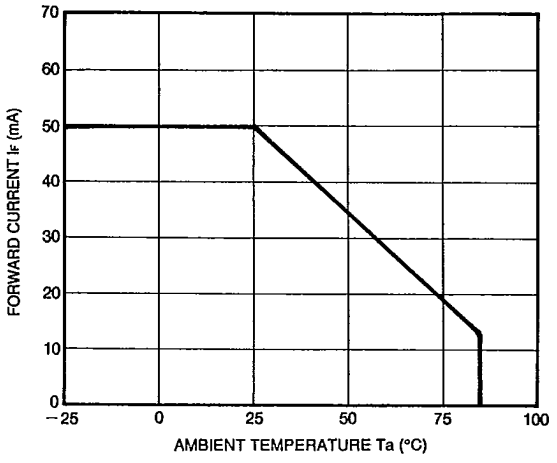


Figure 3: Photo IC Allowable Power Dissipation vs. Temperature

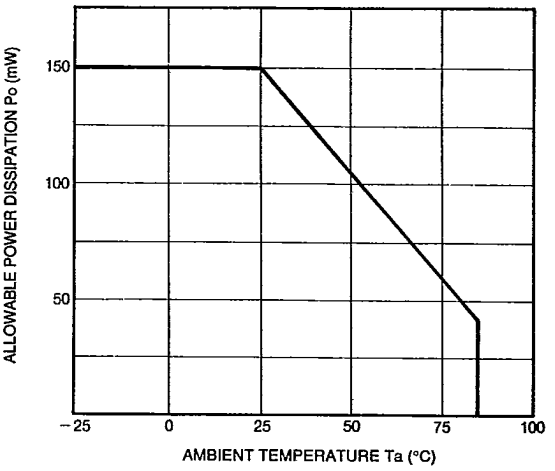


Figure 4: Peak Forward Current vs. Duty Ratio

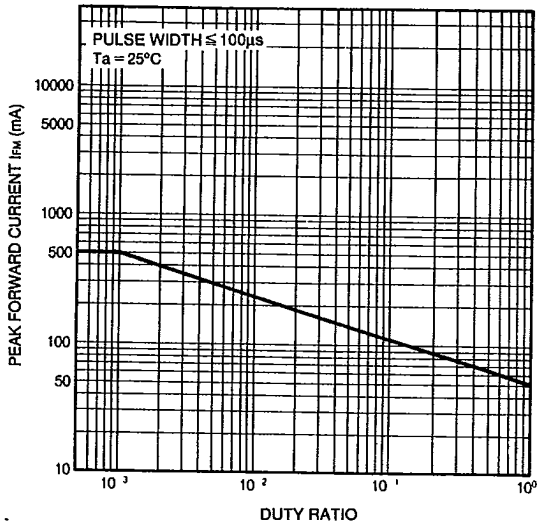


Figure 5: Forward Current vs. Forward Voltage

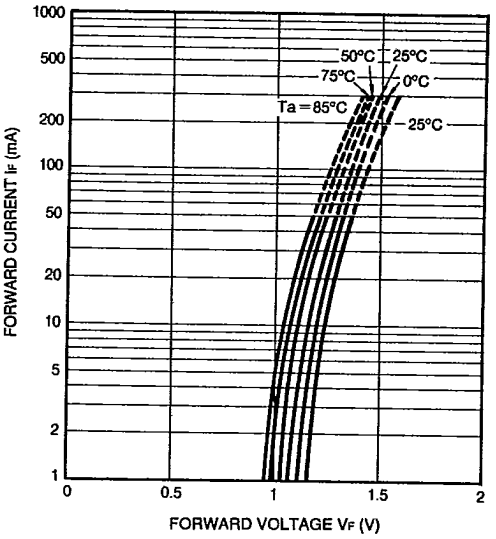


Figure 6: Low Level Output Voltage vs. Output

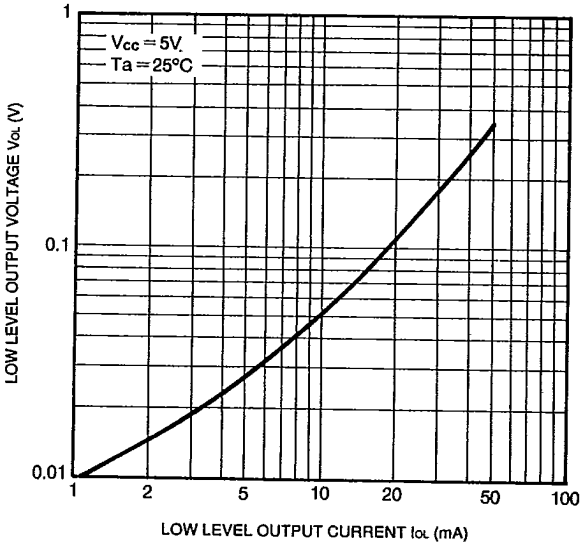


Figure 7: Threshold Input Current vs. Supply Voltage

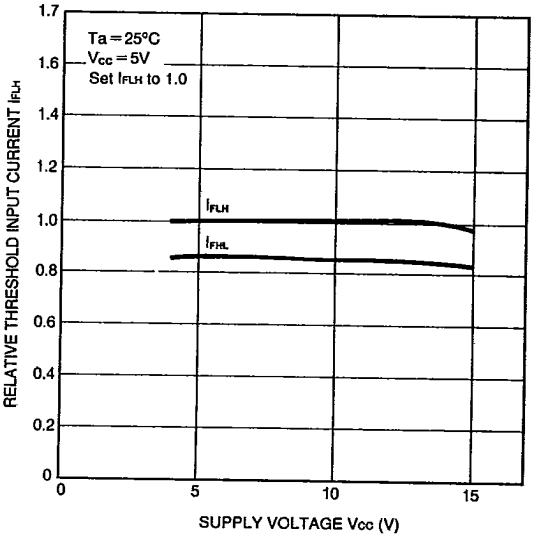


Figure 8: Supply Current vs. Temperature

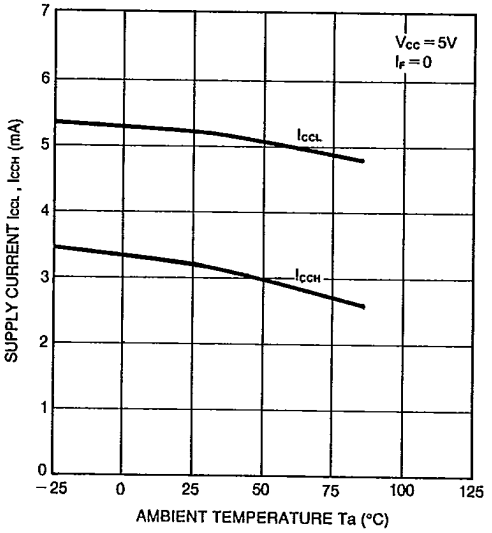


Figure 9: Low Level Output Voltage vs. Temperature

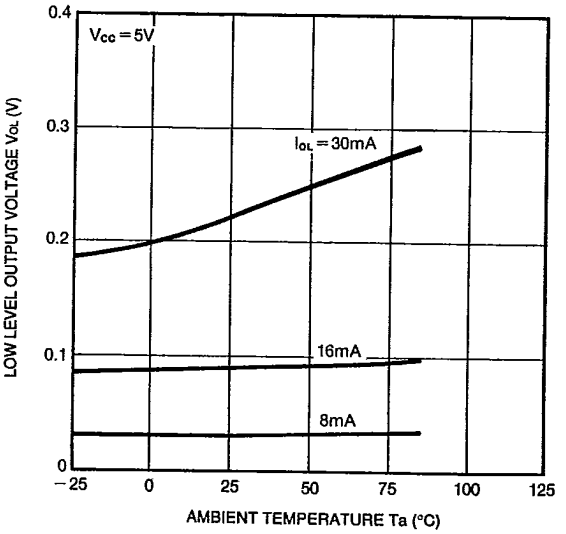


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Figure 10: Threshold Input Current vs. Temperature

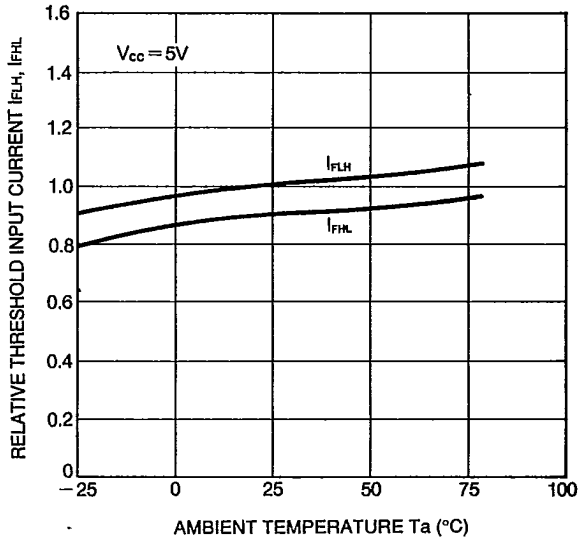

Figure 11: Propagation Delay Time vs. Forward Current

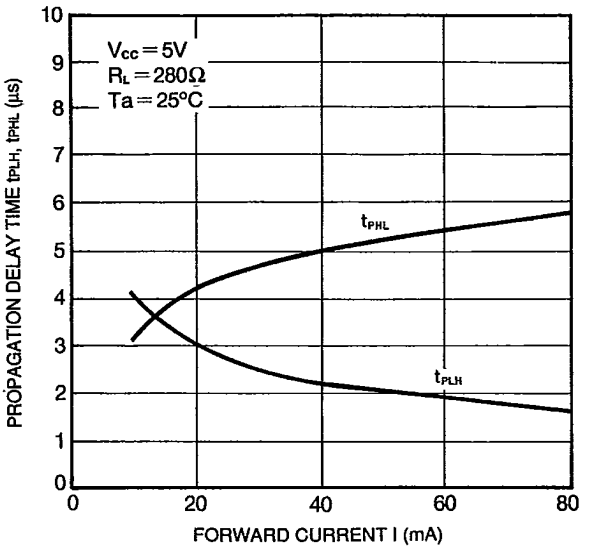

Figure 12: Rise/Fall Time vs. Load Resistance

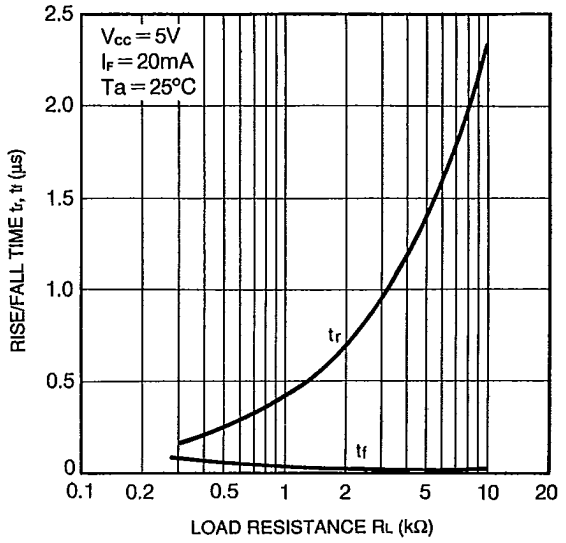

Figure 13: Position Detection Characteristic (1)

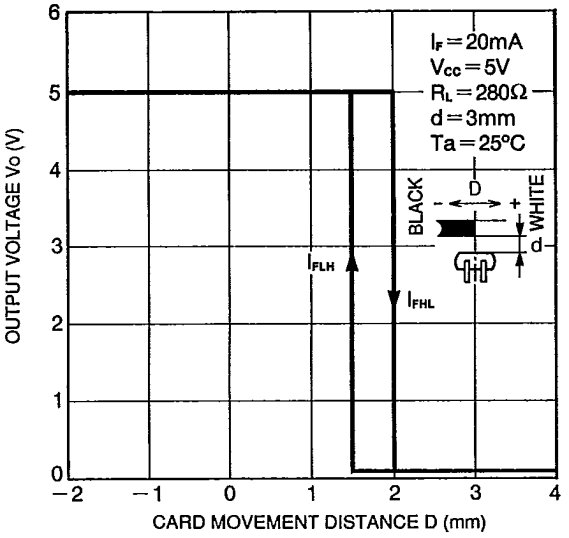

Figure 14: Position Detection Characteristic (2)