

SHARP

GP1A36RA/GP1A36RB

Photointerrupter

OPIC Photointerrupter with Encoder Function

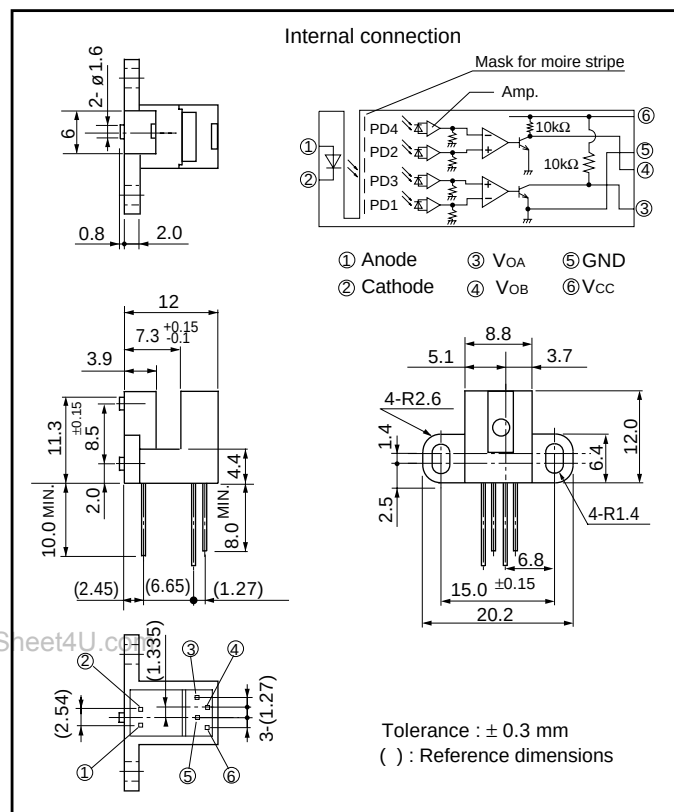
Features

- (1) Linear encoder for reading linear scale
- (2) High sensing accuracy thanks to moire stripe

Applications

- (1) Printers

Outline Dimensions



*OPIC : OPIC (Optical IC) is a trademark of the SHARP Corporation.
An OPIC consists of a light-detecting element and signal-processing circuit integrated onto a single chip.

Absolute Maximum Ratings

(Ta=25°C)

Parameter		Symbol	Rating	Unit
Input	Forward current	I _F	65	mA
	*1 Peak forward current	I _{FM}	1	A
	Reverse voltage	V _R	6	V
	Power dissipation	P	100	mW
Output	Supply voltage	V _{CC}	7	V
	Low level output current	I _{OL}	8	mA
	Power dissipation	P _o	250	mW
Operating temperature		T _{opr}	0 to +70	°C
Storage temperature		T _{sg}	-40 to +80	°C
*2 Soldering temperature		T _{sol}	260	°C

*1 Pulse width ≤ 100 μs, Duty ratio = 0.01 *2 For 5 s

(Notice)

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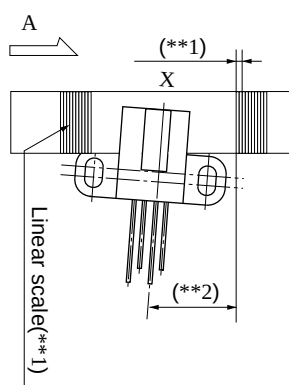
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Electro-optical Characteristics

(Ta=25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Input	Forward voltage	V _F	I _F = 30 mA	-	1.2	1.5	V
	Reverse current	I _R	V _R = 3 V	-	-	10	μA
Output	Operating supply voltage	V _{CC}	-	4.5	5.0	5.5	V
	Low level output voltage	V _{OL}	I _{OL} = 8 mA, I _F = 30 mA, V _{CC} = 5 V	-	0.1	0.4	
	High level output voltage	V _{OH}	V _{CC} = 5 V, I _F = 30 mA	4.0	4.9	-	
	Supply current	I _{CC}	V _{CC} = 5 V, I _F = 30 mA	-	5	20	mA
Transfer characteristics	Duty ratio	D _A	I _F = 30 mA, V _{CC} = 5 V	30	50	70	%
		D _B					
	Phase difference	θ _{AB1}	*1 f=70 Hz, Z= 0.3 mm ^{+0.2 mm}	50	90	130	°
	Response time	t _r	I _F = 30 mA, V _{CC} = 5 V *1 f=70 Hz, Z= 0.3 mm ^{+0.2 mm}	-	1.0	2.0	μs
		t _f		-	1.0	2.0	
	Response frequency	f _{max}	I _F = 30 mA, V _{CC} = 5 V Z=0.3 mm ^{+0.2 mm}	-	-	7	kHz

*1 GP1A36RB: f =100 Hz



**1 GP1A36RA: 90 DPI
GP1A36RB: 150 DPI

**2 GP1A36RA: 7.1°
GP1A36RB: 4.28°

Fig.1 Forward Current vs. Ambient Temperature

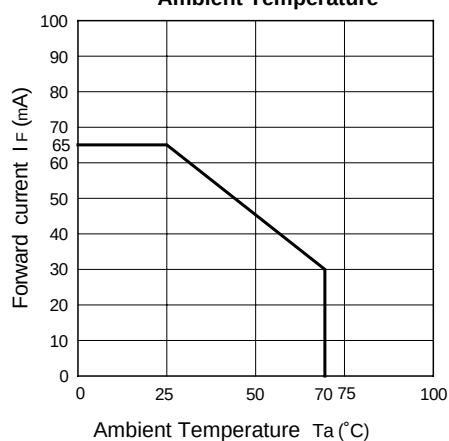
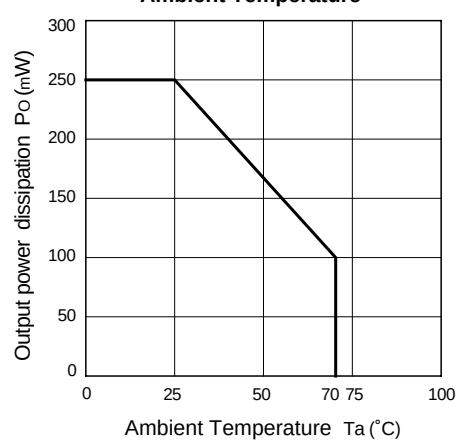


Fig.2 Output Power Dissipation vs. Ambient Temperature



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 - Test and measurement equipment
 - Industrial control
 - Audio visual equipment
 - Consumer electronics
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 - Gas leakage sensor breakers
 - Alarm equipment
 - Various safety devices, etc.
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