SHARP

GP1A038RBK/GP1A038RBKL/GP1A038RCK/GP1A038RCKL

GP1A038RBK/GP1A038RBKL/ GP1A038RCK/GP1A038RCKL

Features

- 1. Linear encoder for reading linear scale
- 2. Since the multi-divided photodiode system is adopted, highprecision reading is possible even if the angle is deviated between the scale and encoder.
- 3. High resolution:

Resolution 150LPI (GP1A038RBK/GP1A038RBKL) Resolution 180LPI (GP1A038RCK/GP1A038RCKL)

Applications

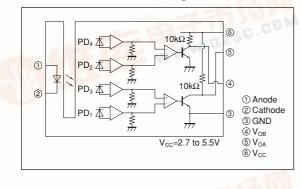
1. Printers

Absolute Maximum Ratings (T_a=25°C)

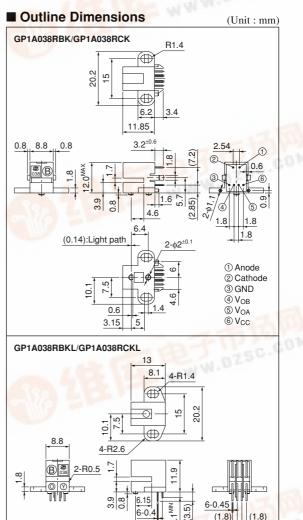
Parameter		Symbol	Rating	Unit
Input	*1 Forward current	$I_{\rm F}$	50	mA
	Reverse voltage	VR	4	V
Output	Supply voltage	V _{CC}	7	V
	Low level output current	I _{OL}	8	mA
	*1 Power dissipation	Po	150	mW
Operating temperature		T _{opr}	-10 to +70	°C
Storage temperature		T _{stg}	-40 to +80	°C
*2 Soldering temperature		T _{sol}	260	°C

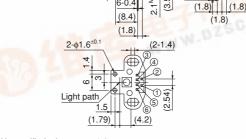
*1 The derating factors of absolute maximum ratings due to ambient temperature are shown in Fig.2 to 3 *2 For 5s

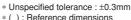
Internal connection diagram



OPIC Photointerrupter with Encoder Function







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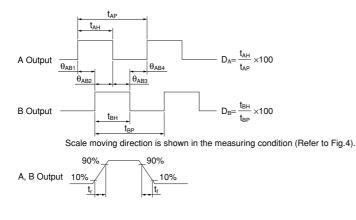
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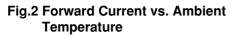
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Electro-optical Characteristics $(T_a=25^{\circ}C)$										
Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit			
Input	Forward voltage	V _F	I _F =11mA	-	1.3	1.5	V			
	Reverse current I_R $V_R=1V$		-	-	100	μA				
Output	Operating supply voltage	V _{CC}	_	2.7	5.0	5.5	V			
	Low level output voltage	Vol	V _{CC} =2.7 to 5.5V, I _F =11mA, I _{OL} =8mA	-	_	0.4	V			
	High level output voltage V _{OH} V _{CC} =2.7 to 5.5V, I _F =11mA		V _{CC} -0.3	-	-	V				
	Supply current	I _{CC}	V _{CC} =2.7 to 5.5V, I _F =11mA, A and B low level	-	-	5	mA			
* ¹ Transfer charac- teristics	Duty ratio	D _A D _B		35	50	65	%			
	Phase difference	$\theta_{AB1 to 4}$	$V_{CC}=2.7$ to 5.5V, $I_F=11mA$, f=10kHz, Z=0.3 ^{+0.7} 0.2mm		90	135	0			
	Response time	t _r	1-10KHZ, Z-0.3-0.2HHH	-	1.0	2.0	μs			
		t _f		-	1.0	2.0	μs			
	Response frequency	fmax	$V_{CC}=2.7$ to 5.5V, $I_{F}=11$ mA, $Z=0.3^{+0.7}_{-0.2}$ mm	-	-	20	kHz			

*1 Refer to the measuring condition. The values of transfer characteristics do not include an error of linear scale. Z is the distance between scale face and holder on the detector side.

Fig.1 Output Waveforms





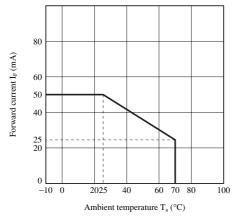
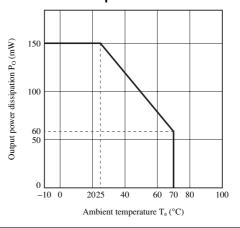


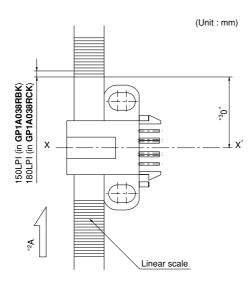
Fig.3 Output Power Dissipation vs. Ambient Temperature

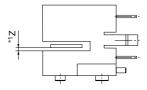


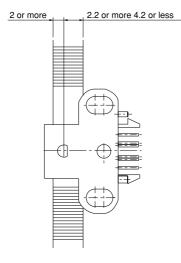
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Fig.4 Measuring Condition







- *1 Distance between scale face and holder on the detector side
- *2 Scale moving direction
- *3 X-X' is the line which is through the center of
- holder positioning pin, and it is parallel to the scale slit.

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 - --- Industrial control
 - --- Audio visual equipment
 - --- Consumer electronics
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 - --- Traffic signals
 - --- Gas leakage sensor breakers
 - --- Alarm equipment
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