KIR1004S

The KIR1004S carrying a unique hysterisis transistor(BAMBIT) developed by KODENSHI CORP. facililates digital output bymeans of two leads. This digital photointerrupter, because of its ultra-compact size, requires little space.

FEATURES

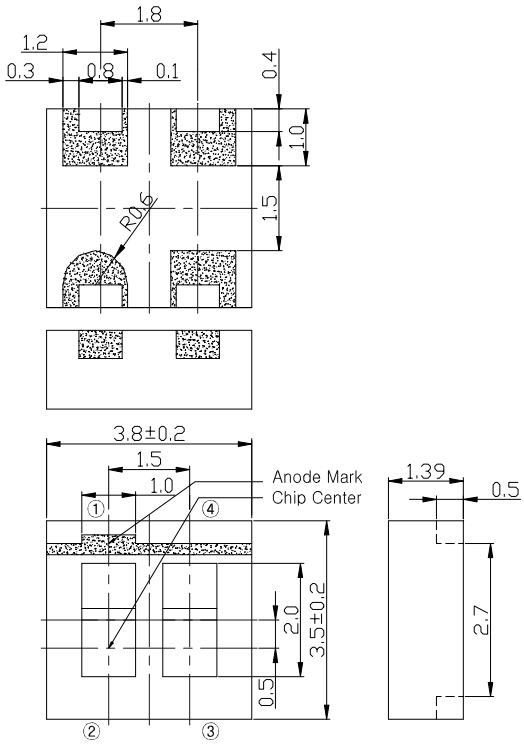
- Digital output : Directly connect to a microcomputer digital port.
- Hysterisis : Stable against chattering of the object.
- High speed response : Faster than transistor output type.
- RoHS Compliance.

APPLICATIONS

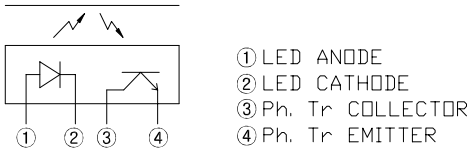
- Detection of paper marks
- Detection of high speed object
- Detection of bar codes
- Portable video camera
- Printer
- Projection TV
- Card readerProjection TV

DIMENSION

(Unit : mm)



■ Block Diagram



MAXIMUM RATINGS

(Ta=25℃)

Parameter		Symbol	Rating	Unit
Input	Forward Current	I_F	50	mA
	Reverse Voltage	V_R	5	V
	Power Dissipation	P_D	75	mW
Output	Collector-Emitter Breakdown Voltage	BV_{CEO}	10	V
	Emitter-Collector Breakdown Voltage	BV_{ECO}	0.3	V
	Collector Current	I_C	0.5	mA
Storage Temperature		T_{stg}	-30~+100	℃
Operating Temperature*1		T_{opr}	-25~+85	℃
Lead Soldering Temperature*2		T_{sol}	260	℃

*1. No icebound or dew

*2. For 2 times at 26℃ reflow

ELECTRO-OPTICAL CHARACTERISTICS

(Ta=25℃, unless otherwise noted)

Parameter		Symbol	Condition	Min.	Typ.	Max.	Unit.
Input	Forward Voltage	V_F	I_F=10mA	-	-	1.30	V
	Reverse Current	I_R	V_R=5V	-	-	10	mA
	Peak Wavelength	λ_P	I_F=20mA	-	940	-	nm
Output	Operating Supply Voltage	V_{CC}	-	2.0	5.0	7.0	V
	Low Level Output Voltage	V_{OL}	V_{CC}=5V, I_F=0mA, R_L=100kΩ	-	0.5	0.7	V
	High Level Output Voltage	V_{OH}	V_{CC}=5V, I_F=20mA, R_L=100kΩ	4.5	4.7	-	V
	Peak Wavelength	λ_P	-	-	880	-	nm
Transmission	Threshold Input Current*3	I_{FLH}	V_{CC}=5V, R_L=100Ω	2.0	-	7.2	mA
	Hysterisis*4	I_{FHL}/I_{FLH}		-	0.85	-	-
	L -> H Propagation Time	t_{PLH}	V_{CC}=5V, I_F=0mA, R_L=100kΩ	-	15	0.4	ms
	H -> L Propagation Time	t_{PHL}		-	40	-	ms
Rise Time		tr		-	4.5	-	ms
Fall Time		tf		-	25	-	ms

*3. IFLH represents forward current when output changes from low to high.

*4. IFHL represents forward current when output changes from high to low.

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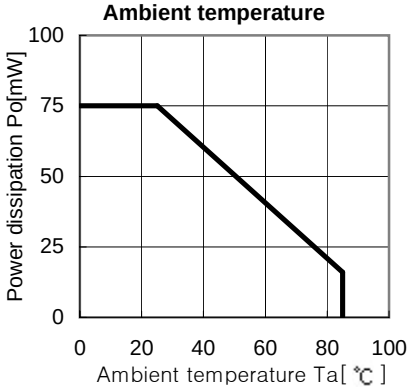
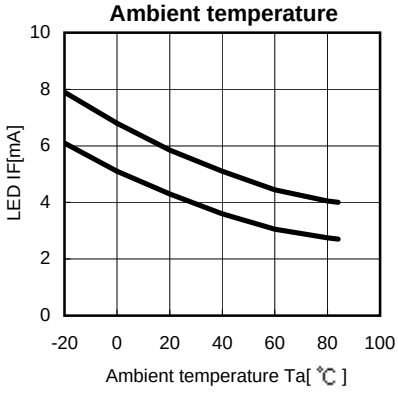
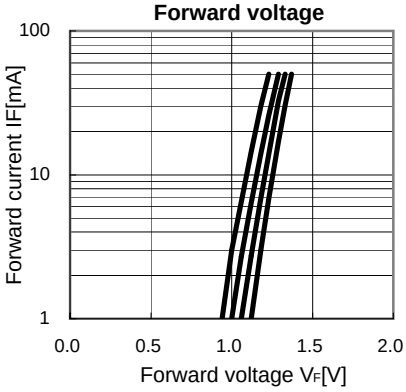
Power dissipation Vs. Ambient temperature



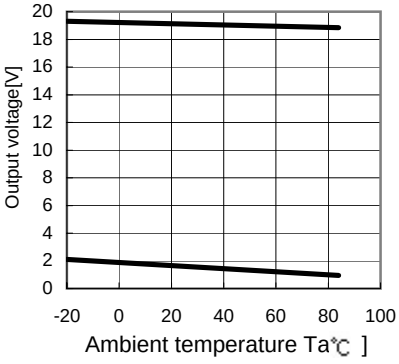
Threshold input current Vs. Ambient temperature



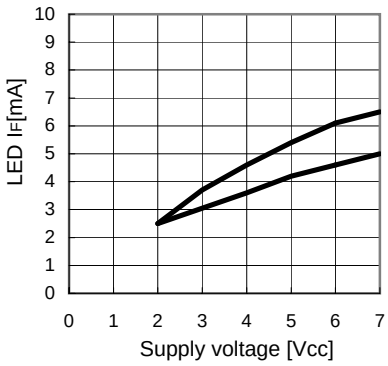
Forward current Vs. Forward voltage



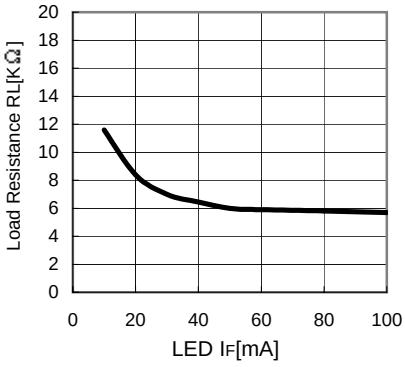
Output voltage Vs. Ambient temperature



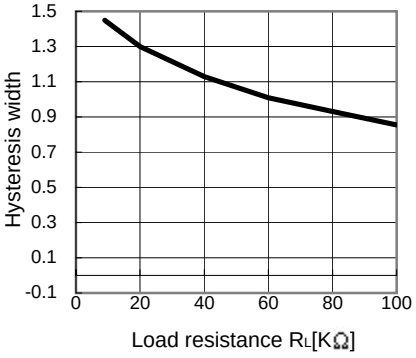
LED Vs. Supply voltage



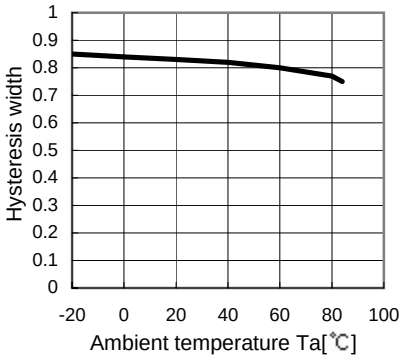
LED Vs. Load resistance



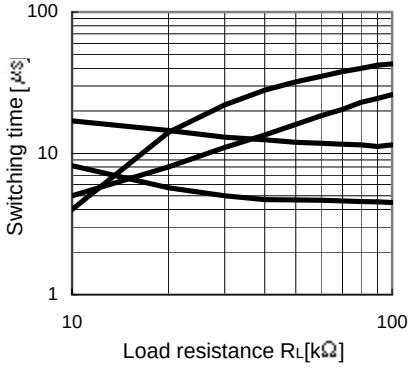
Hysteresis width Vs. Load resistance



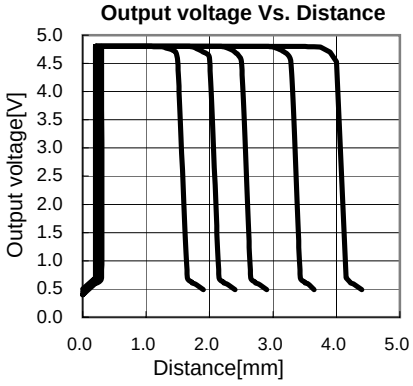
Hysteresis width Vs. Ambient temperature



Switching time Vs. Load resistance



Output voltage Vs. Distance



Measurement of propagation time