

DG - 112

The DG – 112 carrying a unique hysteresis transistor (BAMBIT) developed by KODENSHI CORP. facilitates digital output by means of two leads.

FEATURES

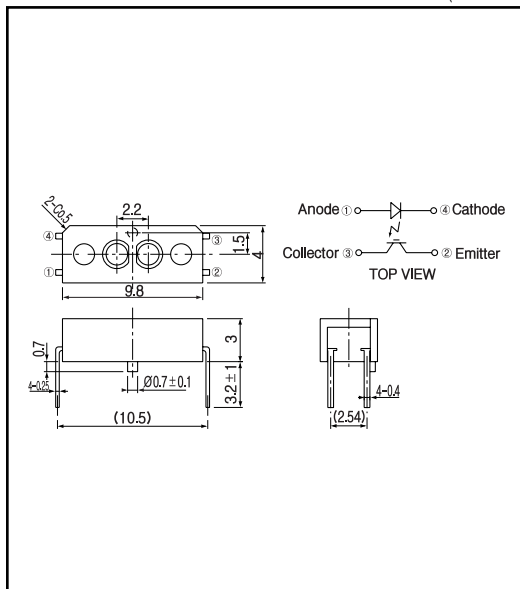
- DIGITAL OUTPUT: directly connect to a microcomputer digital port.
- HYSTERESIS: stable against chattering of the object
- HIGH- SPEED RESPONSE : faster than phototransistor type
- Setting easy

APPLICATIONS

- Detection of paper or marks
- Detection of high – speed object
- Detection of bar codes

DIMENSIONS

(Unit : mm)



MAXIMUM RATINGS

(Ta=25)

Item	Symbol	Rating	Unit
Input	Power dissipation	P _b	75 mW
	Forward current	I _F	50 mA
	Reverse voltage	V _R	5 V
	Pulse forward current *1	I _{FP}	1 A
Output	Collector current	I _C	0.5 mA
	C - E voltage	V _{CEO}	10 V
	E - C voltage	V _{ECO}	0.3 V
Operating temp.*2	T _{opr.}	- 20 ~ +85	
Soldering temp.*3	T _{sol.}	260	

*1. pulse width : t_w 100 μsec, period : T=10msec.

*2. No icebound or dew *3. For MAX.5 seconds at the position of 1mm from the package

ELECTRO-OPTICAL CHARACTERISTICS

(Ta=25)

Item	Symbol	Conditions	Min.	Typ.	Max.	Unit.	
Input	Forward voltage	V _F		1.2	1.4	V	
	Reverse current	I _R	I _F = 20mA		10	μA	
	Peak wavelength	λ _p	V _R = 5V I _F = 20mA		940	nm	
Output	Operating supply voltage rang	V _{CC}		2.0	5.5	V	
	Low level output voltage	V _{OL}	V _{CC} = 3V, I _F = 0mA, R _E = 100k		0.35	0.5	V
	High level output voltage	V _{OH}	V _{CC} = 3V, I _F = 20mA, R _E = 100k	2.5	2.65		V
	Peak wavelength	λ _p			880		nm
	Threshold input current *4	I _{FLH}	V _{CC} = 3V, R _E = 100k, L = 2mm kodak90%		5.5	12	mA
Transmisson	Hysteresis *5	I _{FHL} /I _{FLH}	V _{CC} = 3V, R _E = 100k, L = 2mm kodak90%		0.85		
	L - H propagation time	t _{PLH}	V _{CC} = 3V, I _F = 20mA, R _E = 100k		15		μsec.
	H - L propagation time	t _{PHL}			50		μsec.
	Rise time	t _r			3.0		μsec.
	Fall time	t _f			25		μsec.

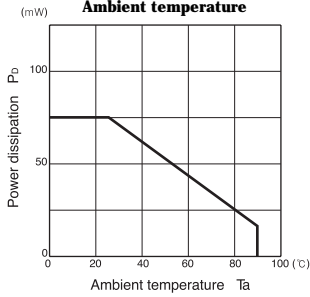
*4. I_{FHL} represents forward current when output changes from low to high.

*5. I_{FHL} represents forward current when output changes from high to low.

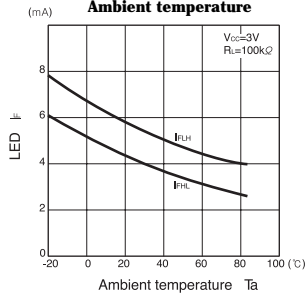
Photo interrupters(Reflective)

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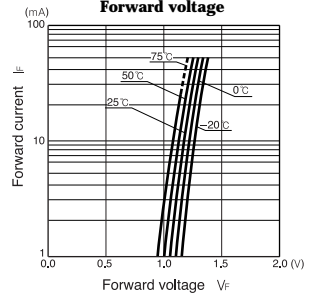
Power dissipation Vs. Ambient temperature



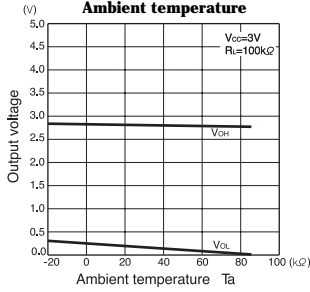
Threshold input current Vs. Ambient temperature



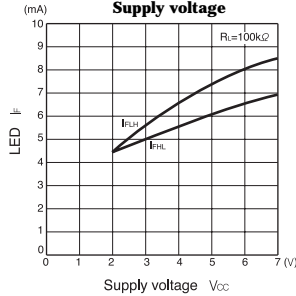
Forward current Vs. Forward voltage



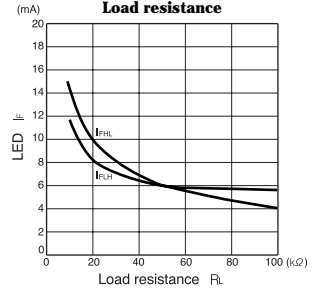
Output voltage Vs. Ambient temperature



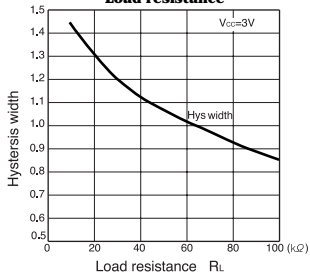
LED Vs. Supply voltage



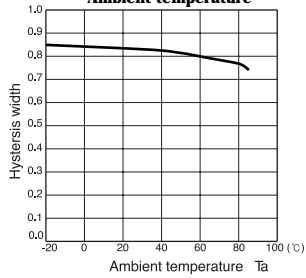
LED Vs. Load resistance



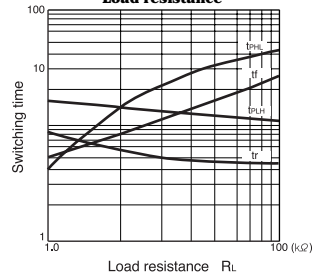
Hysteresis width Vs. Load resistance



Hysteresis width Vs. Ambient temperature



Switching time Vs. Load resistance



Output voltage Vs. Distance

