DG - 105

The DG – 105 carrying a unique hysteresis 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

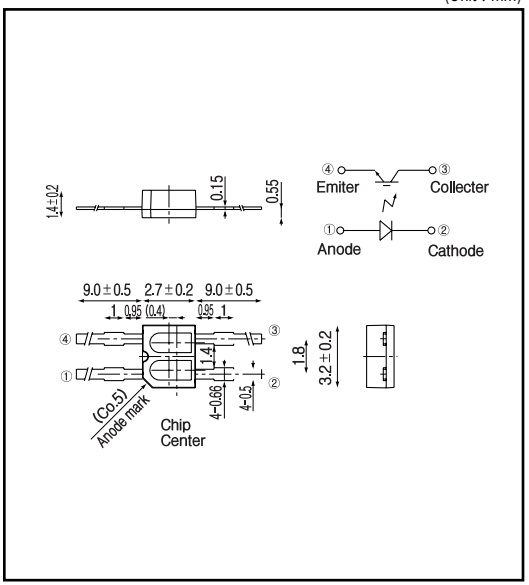
- DIGITAL OUTPUT : directly connect to a microcomputer digital port.
- HYSTERESIS : stable against chattering of the object
- HIGH– SPEED RESPONSE : faster than phototransistor type
- Setting easy

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_D	75	mW
	Forward current	I_F	50	mA
	Reverse voltage	V_R	5	V
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.*1		Topr.	- 25~ +85	℃
Soldering temp.*2		Tsol.	260	℃

*1.No icebound or dew

*2.For MAX.5seconds at the position of 1mm from the package

ELECTRO-OPTICAL CHARACTERISTICS

(Ta=25℃)

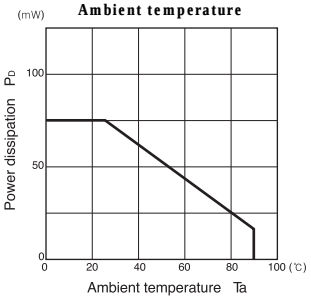
Item		Symbol	Conditions	Min.	Typ.	Max.	Unit.
Input	Forward voltage	V_F	I_F=10mA			1.3	V
	Reverse current	I_R	V_R=5V			10	μA
	Peak wavelength	λp	I_F =20mA		940		nm
Input	Operating supply voltage rang	V_{CC}		2.0	5.0	7.0	V
	Low level output voltage	V_{OL}	V_{CC} =5V,I_F =0mA,R_L =100k Ω		0.5	0.7	V
	High level output voltage	V_{OH}	V_{CC} =5V,I_F =20mA,R_L =100k Ω	4.5	4.7		V
	Peak wavelength	λp			880		nm
Transmisson	Threshold input current*4	I_{FLH}	V_{CC} =5V,R_L =100k Ω	2.0		7.2	mA
	Hysteresis *5	I_{FHL}/I_{FLH}			0.85		-
	L →H propagation time	t_{PLH}	V_{CC} =5V,I_F =20mA,R_L =100k Ω		15		μsec.
	H →L propagation time	t_{PHL}			40		μsec.
	Rise time	tr			4.5		μsec.
	Fall time	tf			25		μsec.

*3.I_{LH} represents forward current when output changes from low to high.

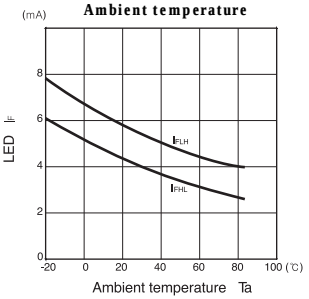
*4.I_{HL} represents forward current when output changes from high to low.

DG - 105

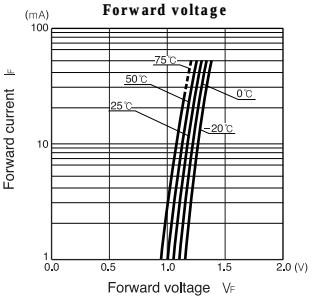
Power dissipation Vs. Ambient temperature



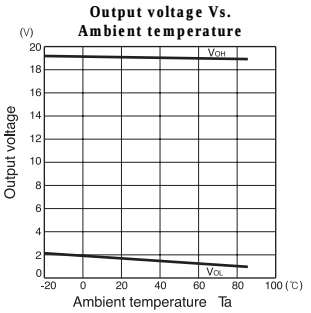
Threshold input current Vs. Ambient temperature



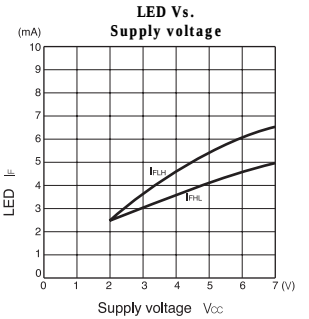
Forward current Vs. Forward voltage



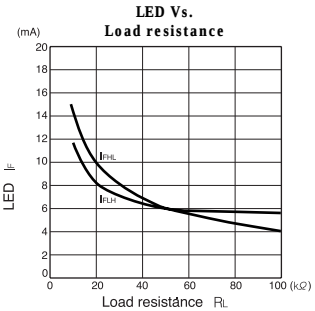
Output voltage Vs. Ambient temperature



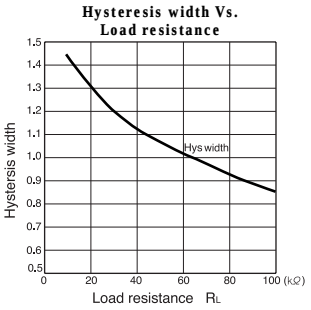
LED Vs. Supply voltage



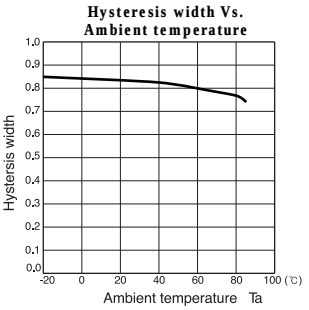
LED Vs. Load resistance



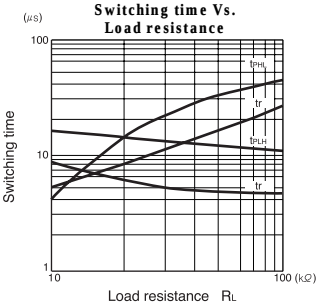
Hysteresis width Vs. Load resistance



Hysteresis width Vs. Ambient temperature



Switching time Vs. Load resistance



Output voltage Vs. Distance