

DG - 290

The DG – 290 carrying a unique hysteresis transistor (BAMBIT) developed by KODENSHI CORP. facilitates digital output by means of two leads. This digital photointerrupter, because of its ultra – compact size, requires little space.

FEATURES

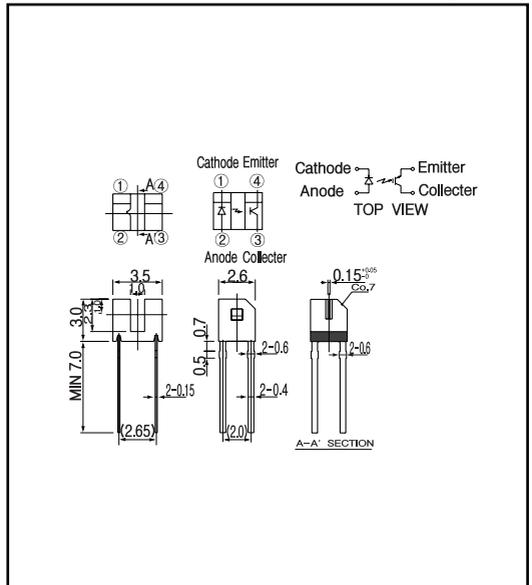
- DIGITAL OUTPUT : directly connect to a microcomputer digital port.
- HYSTERESIS : stable against chattering of the object
- HIGH– SPEED RESPONSE: faster than phototransistor type
- Setting easy

APPLICATIONS

- CD – ROM drive
- Sensor of camera lens position
- Encoder of printer or scanner

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
	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.}	- 25 - +80	
	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	I _F =20mA		1.2	1.4	V
	Reverse current	I _R	V _R =5V			10	µA
	Peak wavelength	λ _p	I _F =20mA		940		nm
Input	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		0.25	0.4	V
	High level output voltage	V _{OH}	V _{CC} = 3V, I _F = 14mA, R _E = 100k	2.5	2.65		V
	Peak wavelength	λ _p			880		nm
Transmission	Threshold input current ^{*4}	I _{F(LH)}	V _{CC} =3V, R _E =100k		6.0	12.0	mA
	Hysteresis ^{*5}	I _{F(HL)/F(LH)}	V _{CC} =3V, R _E =100k		0.85		
	L - H propagation time	t _{PLH}	V _{CC} = 3V, I _F = 14mA, R _E = 100k		10		µsec.
	H - L propagation time	t _{PHL}			25		µsec.
	Rise time	t _r			2.5		µsec.
Fall time	t _f			15		µsec.	

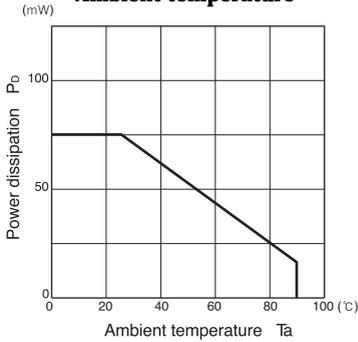
*4. I_{F(LH)} represents forward current when output changes from low to high.

*5. I_{F(HL)} represents forward current when output changes from high to low.

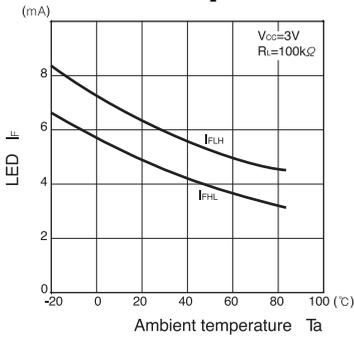
Photointerrupters(Transmissive)

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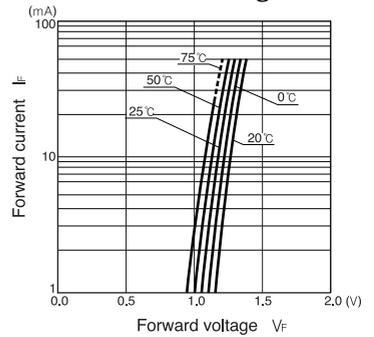
Power dissipation Vs. Ambient temperature



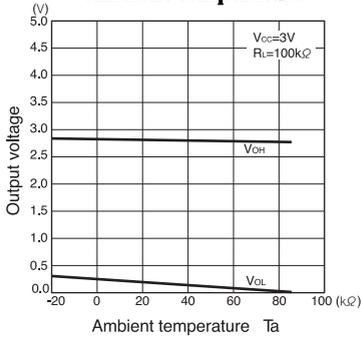
Threshold input current Vs. Ambient temperature



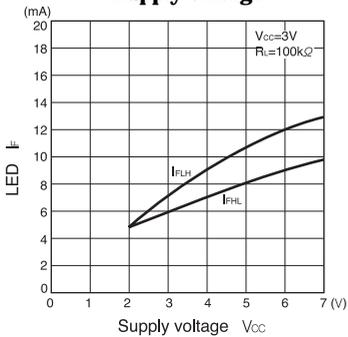
Forward current Vs. Forward voltage



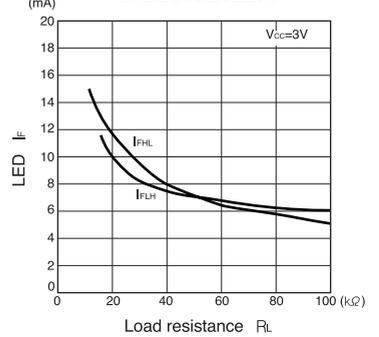
Output voltage Vs. Ambient temperature



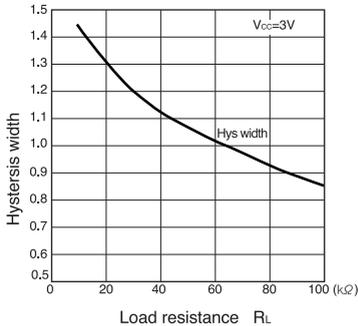
LED Vs. Supply voltage



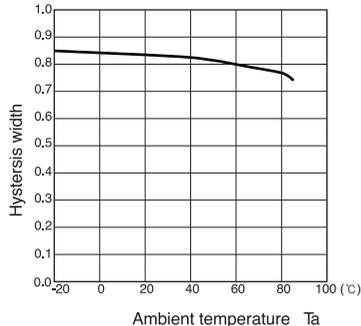
LED Vs. Load resistance



Hysteresis width Vs. Load resistance



Hysteresis width Vs. Ambient temperature



Switching time Vs. Load resistance

