

PRODUCT SPECIFICATION

Date : 2003/12/15

COSMO	Photointerrupter : KW1S50FC	No.60K00001	REV.
ELECTRONICS CORPORATION		Sheet 1 Of 5	1

Horizontal Slit Type Photointerrupter

● Features

1. Horizontal slit type
2. PWB direct mounting type
3. GAP between light emitter and detector : 4.2mm
4. Slit width : 0.5mm
5. With a positioning boss

● Applications

1. OA equipment, such as printer etc.

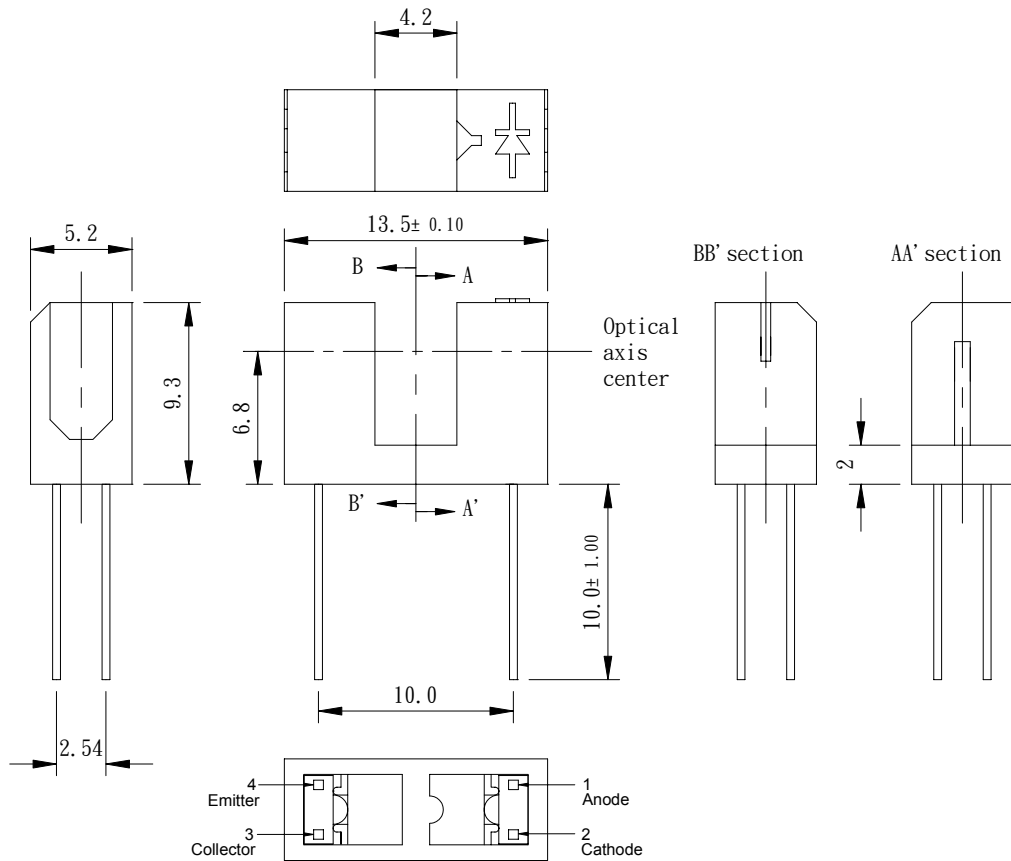
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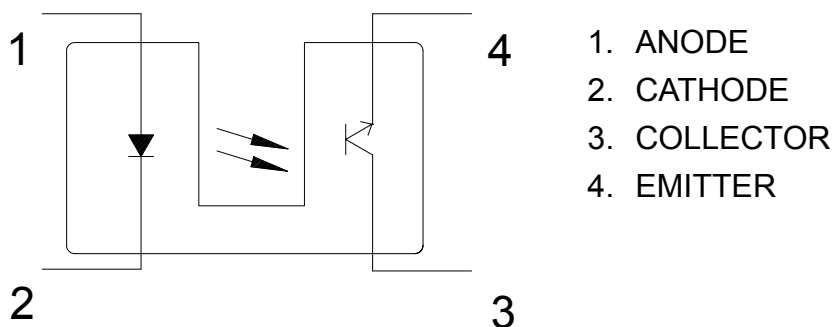
Outside Dimension :

(Unit : mm)



TOLERANCE : ± 0.2mm

Schematic :



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● Absolute Maximum Ratings

	Parameter	Symbol	Rating	Unit
Input	Forward Current	I_F	50	mA
	Peak Forward Current ※1	I_{FP}	1	A
	Reverse Voltage	V_R	6	V
	Power Dissipation	P_D	75	mW
Output	Collector-emitter Voltage	V_{CEO}	35	V
	Emitter-collector Voltage	V_{ECO}	6	V
	Collector Current	I_C	20	mA
	Power Dissipation	P_D	75	mW
	Total Power Dissipation	T_{PD}	100	mW
	Operation Temperature	T_{OPR}	-25 to +85	°C
	Storage Temperature	T_{STG}	-40 to +100	°C
	Soldering Temperature ※2	T_{SOL}	260	°C

※ 1 Pulse width $\leq 100\mu s$, duty ratio=1%

※ 2 For 5 seconds

● Electronics Characteristics

Parameter		Symbol	Conditions	Min.	TYP.	MAX.	Unit
Input	Forward Voltage	V _F	I _F =20mA	—	1.25	1.4	V
	Peak Forward Voltage	V _{FM}	I _{FM} =0.5A	—	3	4	V
	Reverse Current	I _R	V _R =3V	—	—	10	μA
Output	Collector-emitter dark current	I _{CEO}	V _{CE} =20V,I _F =0mA	—	1	100	nA
Transfer Characteristics	Collector Current	I _C	V _{CE} =5V , I _F =20mA	0.5	—	10	mA
	Collector saturation voltage	V _{CE(SET)}	I _F =40mA , I _C =0.5mA	—	—	0.4	V
	Response time (Rise)	Tr	V _{CE} =2V , I _C =0.5mA	—	3	15	μs
	Response time (Fall)	Tf		—	4	20	μs

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Fig. 1 Forward Current vs. Ambient Temperature

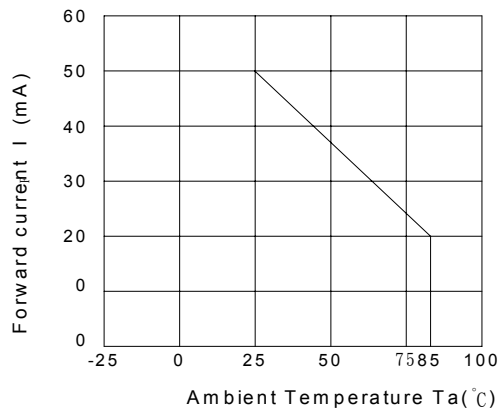


Fig. 2 Collector Power Dissipation vs. Ambient Temperature

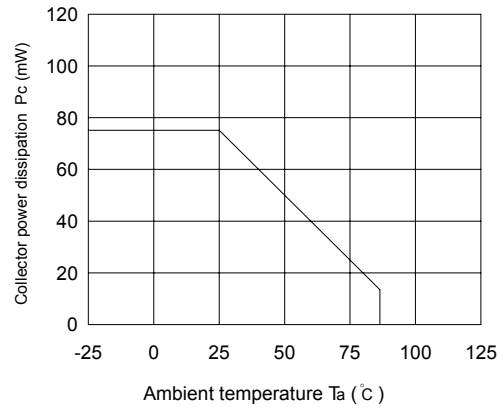


Fig. 3 Peak Forward Current vs. Duty Ratio

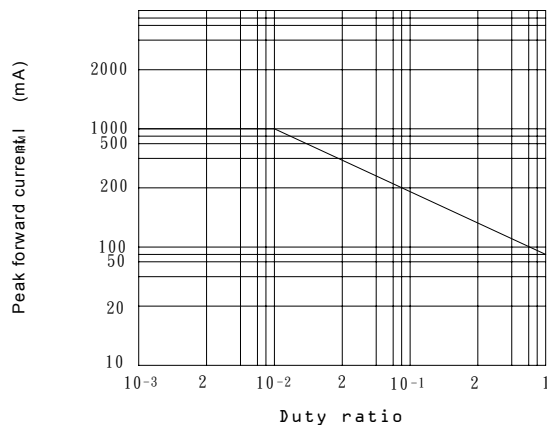


Fig. 4 Forward Current vs. Forward Voltage

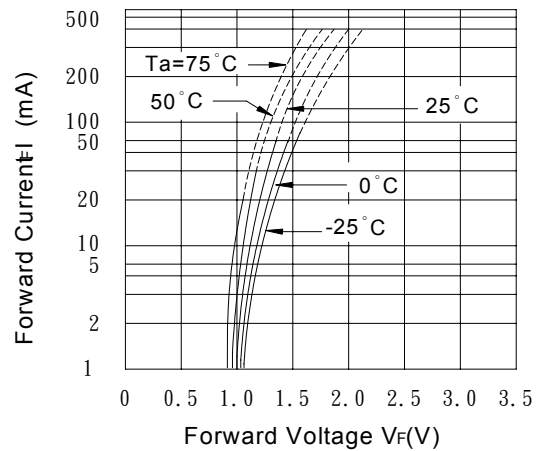


Fig. 5 Collector Current vs. Forward Current

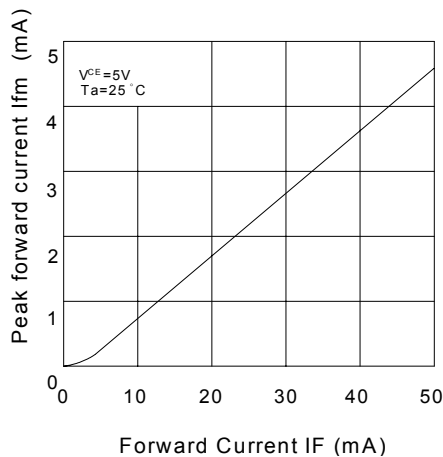
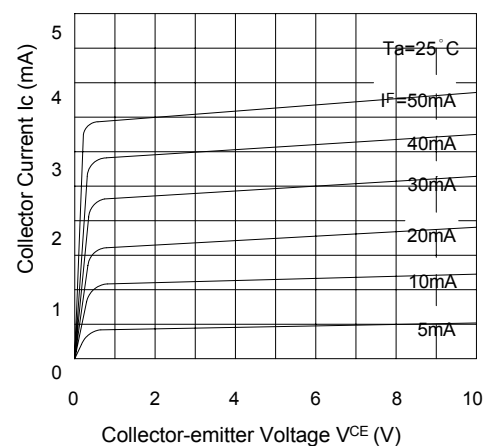


Fig. 6 Collector Current vs. Collector-emitter Voltage



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Fig. 7 Collector Current vs. Ambient Temperature

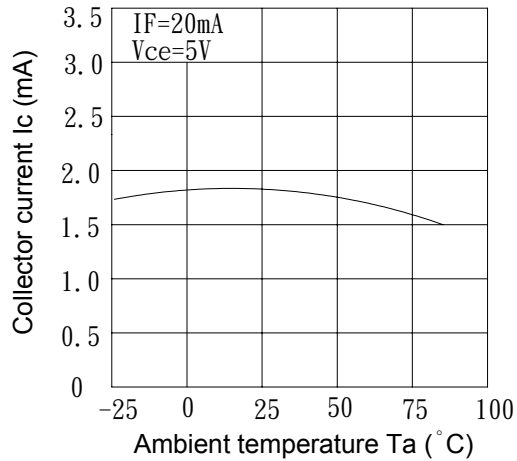


Fig 8 Collector-emitter Saturation Voltage vs. Ambient Temperature

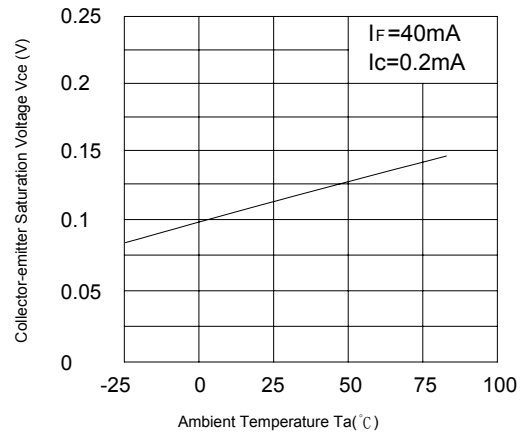
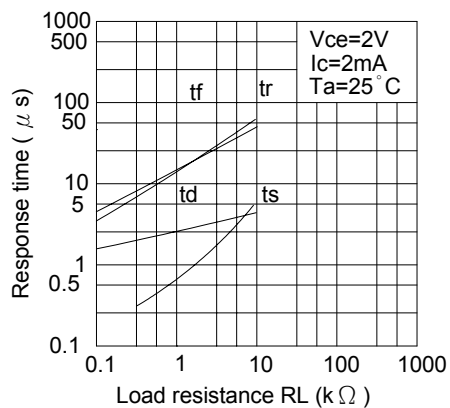


Fig. 9 Response Time vs. Load Resistance



Test Circuit for Response Time

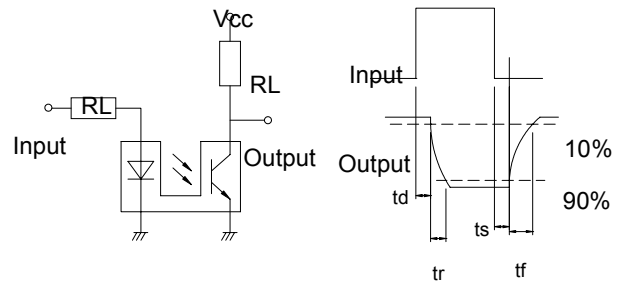


Fig. 10 Relative Collector Current vs. Shield Distance (1)

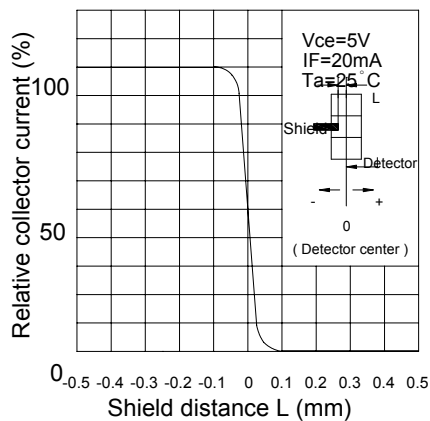


Fig. 11 Relative Collector Current vs. Shield Distance (2)

