

Technical Data Sheet

Opto Interrupter

ITR9606

Features

- Fast response time
- High analytic
- Cut-off visible wavelength λp=940nm
- High sensitivity
- Pb free
- The product itself will remain within RoHS compliant version.

Descriptions

The **ITR9606** consist of an infrared emitting diode and an NPN silicon phototransistor, encased side-by-side on converging optical axis in a black Thermoplastic Housing The phototransistor receives radiation from the IRED only .This is the normal Situation. But when an object is in between ,

phototransistor could not receives the radiation. For additional component information, please refer to IR928-6C and PT928-6C

Applications

- Mouse Copier
- Switch Scanner
- Floppy disk driver
- Non-contact Switching
- For Direct Board

Device Selection Guide

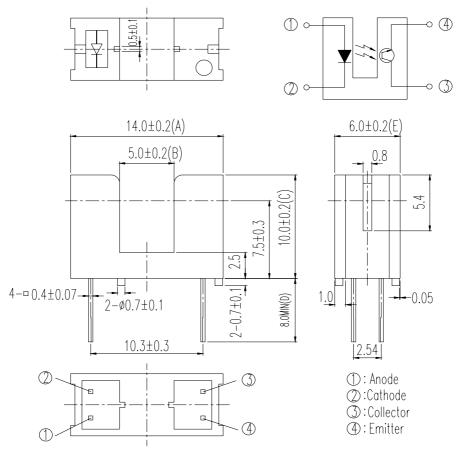
Device No.	Chip Material	LENS COLOR
IR928-6C	GaAlAs	Water clear
PT928-6C	Silicon	Water clear

Everlight Electronics Co., Ltd. http://www.everlight.com Rev 3 Page: 1 of 6

Device No: CDRX-096-004 Prepared date: 08-08-2005 Prepared by: Denky



Package Dimensions



Notes:

- 1.All dimensions are in millimeters
- 2. Tolerances unless dimensions ± 0.2 mm
- 3. Lead spacing is measured where the lead emerge from the package
- 4. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification
- 5. These specification sheets include materials protected under copyright of EVERLIGHT corporation. Please don't reproduce or cause anyone to reproduce them without EVERLIGHT's consent
- 6. When using this product, please observe the absolute maximum ratings and the instructions for use outlined in these specification sheets. EVERIGHT assumes no responsibility for any damage resulting from use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.

Everlight Electronics Co., Ltd. Device No: CDRX-096-004

http:\\www.everlight.com Prepared date: 08-08-2005 Rev 3

Page: 2 of 6

Prepared by : Denky



Absolute Maximum Ratings (Ta=25℃)

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25°C Free Air Temperature	Pd	100	mW
	Reverse Voltage	V_R	5	V
	Forward Current	I_{F}	50	mA
	Peak Forward Current (*1) Pulse width $\leq 100 \mu$ s, Duty cycle=1%	${ m I_{FP}}$	1	A
Output	Collector Power Dissipation	P_{C}	75	mW
	Collector Current	I_{C}	50	mA
	Collector-Emitter Voltage	$\mathrm{B}\mathrm{V}_{\mathrm{CEO}}$	30	V
	Emitter-Collector Voltage	$\mathrm{B}\mathrm{V}_{\mathrm{ECO}}$	5	V
Operating Temperature		Topr	-25~+85	$^{\circ}\!\mathbb{C}$
Storage Te	emperature	Tstg	-40~+85	$^{\circ}\!\mathbb{C}$
	ering Temperature (*2) form body for 5 seconds)	Tsol 260		$^{\circ}$ C

(*1) tw=100 μ sec., T=10 msec. (*2) t=5 Sec

Electro-Optical Characteristics (Ta=25°C)

Parameter		Symbol	Min.	Тур.	Max.	Unit	Conditions	
		V_{F1}		1.2	1.6		$I_F=20\text{mA}$	
	Forward Voltage	V_{F2}		1.4	1.85	V	I_F =100mA,tp=100 μ s,tp/T=0.01	
T4		V_{F3}		2.6	4.0		I_F =1A,tp=100 μ s,tp/T=0.01	
Input	Reverse Current	I_R			10	μ A	$V_R=5V$	
	Peak Wavelength	λ_P		940		nm	I _F =20mA	
	View Angle	201/2		60		Deg	$I_F=20\text{mA}$	
Output	Dark Current	I_{CEO}			100	nA	$V_{CE}=20V, Ee=0mW/cm^2$	
	C-E Saturation Voltage	V _{CE} (sat)			0.4	V	$I_{C}=2mA$,Ee=1mW/cm ²	
Transfer Characteristics	Collect Current	I _C (ON)	0.5		10	mA	$V_{CE}=5V$ $I_F=20\text{mA}$	
	Rise time	$t_{\rm r}$		15		μ sec	$V_{CE}=5V$	
	Fall time t _f	to		15		$\mu \sec$	$I_{C}=1$ mA	
		ι_{f}					$R_L=1K\Omega$	

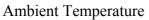
Everlight Electronics Co., Ltd. http://www.everlight.com Rev 3 Page: 3 of 6

Device No: CDRX-096-004 Prepared date: 08-08-2005 Prepared by: Denky



Typical Electrical/Optical/Characteristics Curves for IR

Fig.1 Forward Current vs.



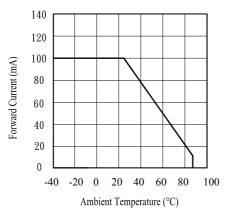


Fig.5 Relative Intensity vs.

Forward Current

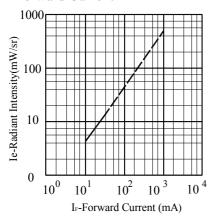


Fig.7 Relative Intensity vs.

Ambient Temperature(°C)

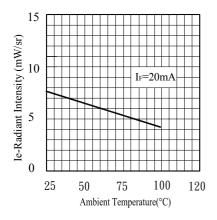


Fig.2 Spectral Distribution

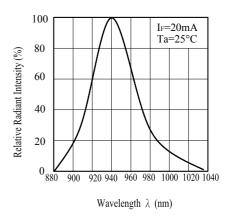


Fig.6 Relative Radiant Intensity vs.

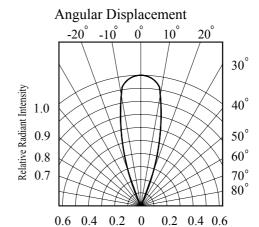
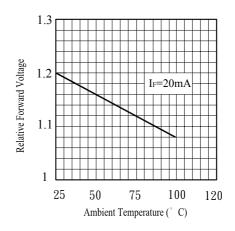


Fig.8 Forward Current vs.
Ambient Temperature(°C)



Everlight Electronics Co., Ltd. http://www.everlight.com Rev 3 Page: 4 of 6

Device No: CDRX-096-004 Prepared date: 08-08-2005 Prepared by: Denky





Typical Electrical/Optical/Characteristics Curves for PT

Fig.1Collector Power Dissipation vs.

Ambient Temperature

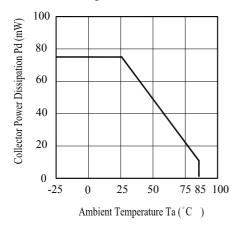


Fig.3 Relative Collector Current vs.

Ambient Temperature

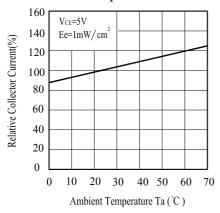


Fig.5 Collector Dark Current vs.

Ambient Temperature

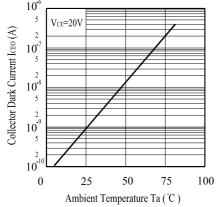


Fig.2 Spectral Sensitivity

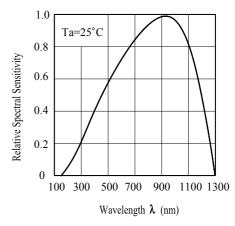


Fig.4 Collector Current vs.

Irradiance

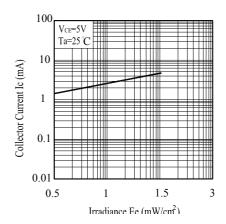
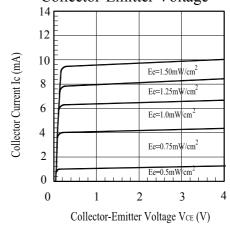


Fig.6 Collector Current vs.

Collector-Emitter Voltage



Everlight Electronics Co., Ltd. http://www.everlight.com Rev 3 Page: 5 of 6

Device No: CDRX-096-004 Prepared date: 08-08-2005 Prepared by: Denky



Reliability Test Item And Condition

The reliability of products shall be satisfied with items listed below.

Confidence level: 90%

LTPD: 10%

NO.	ltem	Test Cond	ition	Test Hours/ Cycle	Sample Size	Failure Judgement Criteria	Ac/Re
1	Solder Heat	TEMP : 260℃	±5 ℃	5 sec	22 PCs	More than 90% of lead to be covered by soldering	0/1
2	Temperature Cycle	H:+100°C ↓ L:-40°C	15 mins 5 min 15 min	300 cycle	22 PCs	I _R ≧Ux2 Ee≦Lx0.8 V _F ≧Ux1.2	0/1
3	Thermal Shock	H:+100°C ↑ 1 L:-10°C	5 min 0 sec 5 min	300 cycle	22 PCs	U :Upper specification limit L :Lower specification limit	0/1
4	High Temperature Storage	TEMP. : +100℃		1000 hrs	22 PCs		0/1
5	Low Temperature Storage	TEMP. : -40℃		1000 hrs	22 PCs		0/1
6	DC Operating Life	V _{CE} =5V I _F =20mA		1000 hrs	22 PCs		0/1
7	High Temperature / High Humidity	85℃ / 85% R.H	l.	1000 hrs	22 PCs		0/1

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Everlight Electronics Co., Ltd. http:\\www.everlight.com Rev 3 Page: 6 of 6 Device No: CDRX-096-004 Prepared date: 08-08-2005 Prepared by : Denky