

## Technical Data Sheet

### OPTO INTERRUPTER ITR

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**PT958-8C**

#### ■ Features

- Fast response time
- High sensitivity
- Wide angle of half sensitivity  $\theta = \pm 11^\circ$
- Pb free
- The product itself will remain within RoHS compliant version.

#### ■ Descriptions

The **PT958-8C** is a high speed and high sensitivity single photo transistor that molded in a clear plastic package with spherical side view lens. The device is spectrally matched with IR emitters.



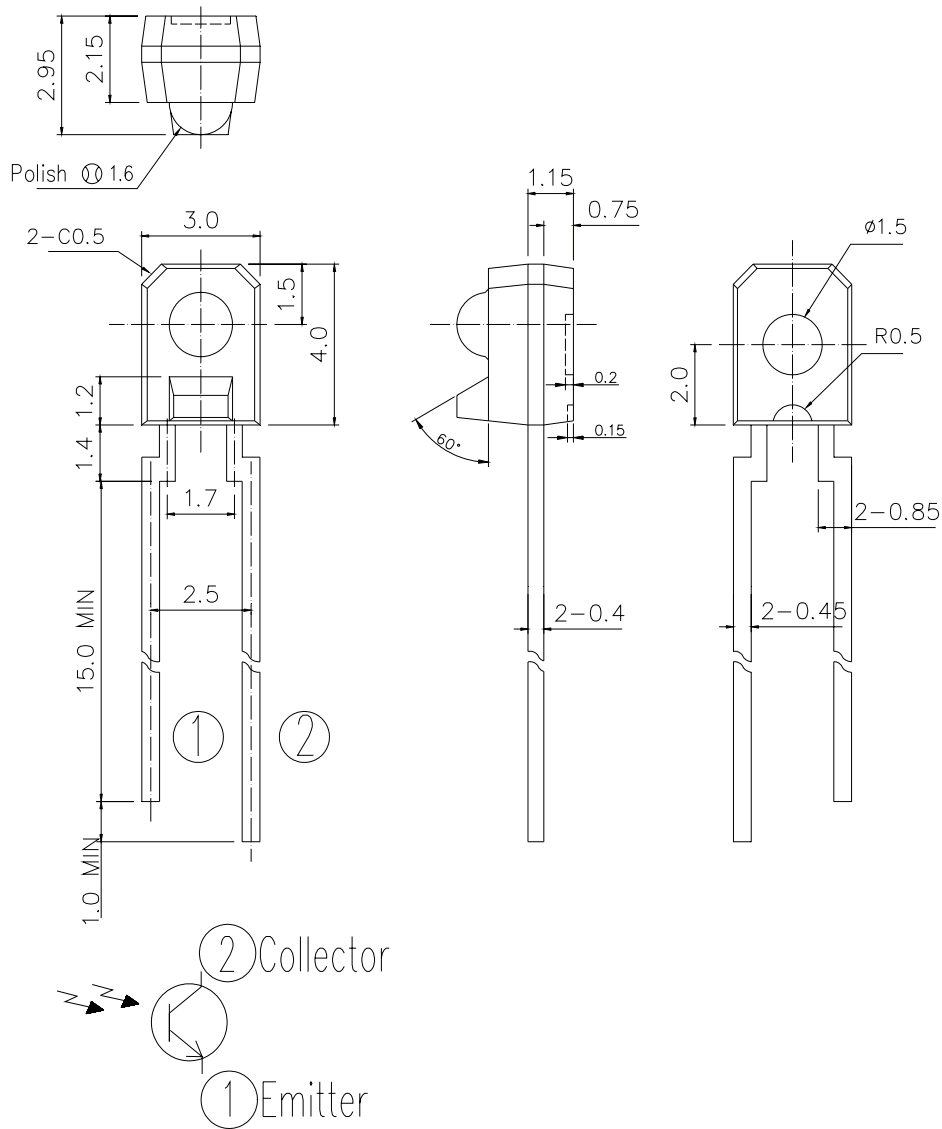
#### ■ Applications

- VCR
- Floppy Disk Drive
- Automatic stroboscope
- F Cassette type recorder
- Opto-electronic Switch
- Photo interrupter

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**Package Dimensions**



**Note:**

1. All dimensions are in millimeter.
2. General tolerance:  $\pm 0.2\text{mm}$
3. Lead spacing is measured where the lead emerge from the package.



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#### ■ Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Rating	Unit
Collector Power Dissipation	Pc	75	mW
Collector-Emitter Voltage	V <sub>CEO</sub>	30	V
Emitter-Collector Voltage	V <sub>ECO</sub>	5	V
Collector Current	Ic	20	mA
Operating Temperature	Topr	-25~+85	°C
Storage Temperature	Tstg	-40~+85	°C
Soldering Temperature (1/16 inch from body for 5 seconds)	Tsol	260	°C

#### ■ Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min	Typ	Max	Unit	Condition	
Collector Dark Current	I <sub>CEO</sub>	-	-	100	nA	V <sub>CE</sub> =20V, Ee=0mW/cm <sup>2</sup>	
C-E Saturation Voltage	V <sub>CE(Sat)</sub>	-	-	0.4	V	Ic=0.5mA, Ee=10mW/cm <sup>2</sup>	
Collector Current	I <sub>C(On)</sub>	0.53	-	3.13	μA	V <sub>CE</sub> =5V, Ee=1mW/cm <sup>2</sup>	
Wavelength of Peak Sensitivity	λ <sub>p</sub>	-	860	-	nm	---	
Range of Spectral Bandwidth	λ <sub>0.5</sub>		400...1200	-	nm	---	
Response Time	Rise Time	t <sub>r</sub>	-	15	-	μSec	V <sub>CE</sub> =5V Ic=1mA R <sub>L</sub> =1000Ω
	Fall Time	t <sub>f</sub>	-	15	-	μSec	
Half sensitivity angle	2θ <sub>1/2</sub>	-	±11	-	Deg	---	

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**Typical Characteristics**

Fig.1 Collector Power Dissipation vs. Ambient Temperature

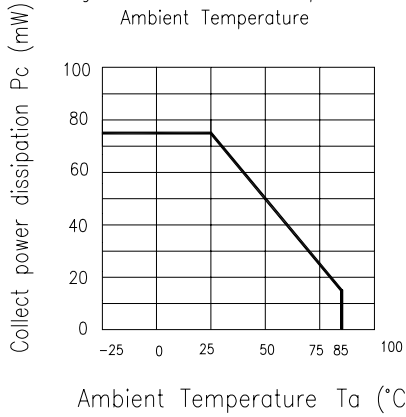


Fig.2 Collector Dark Current vs. Ambient Temperature

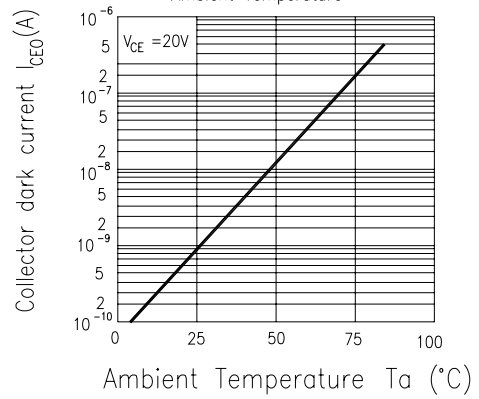


Fig. 3 Relative Collector Current vs. Ambient Temperature

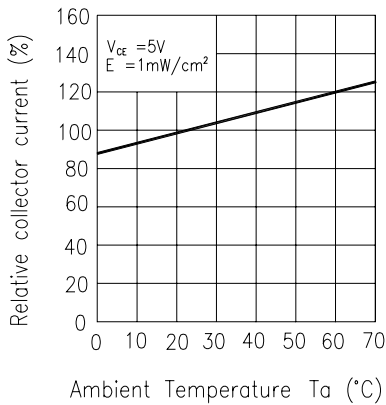


Fig.4 Collector Current vs. Irradiance

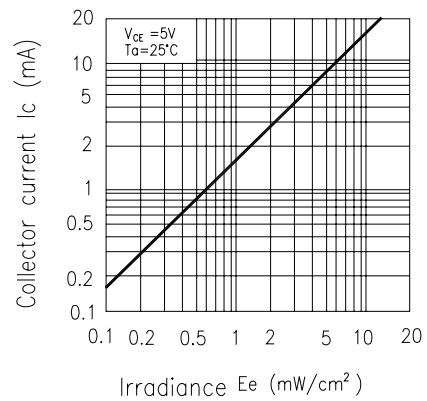


Fig.5 Spectral Sensitivity

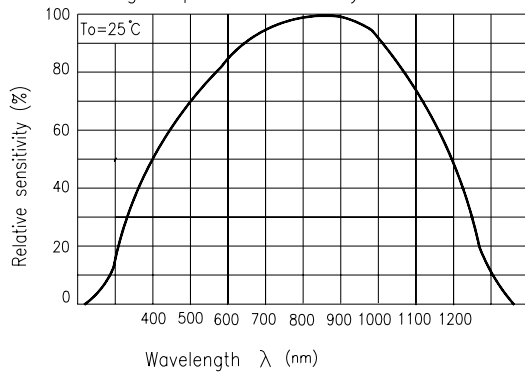
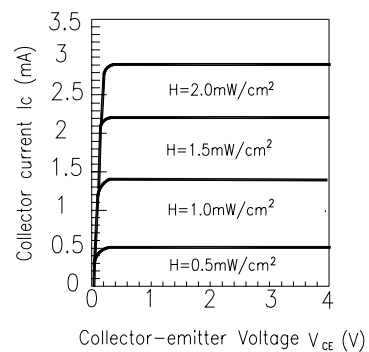


Fig.6 Collector Current vs. Collector-emitter Voltage

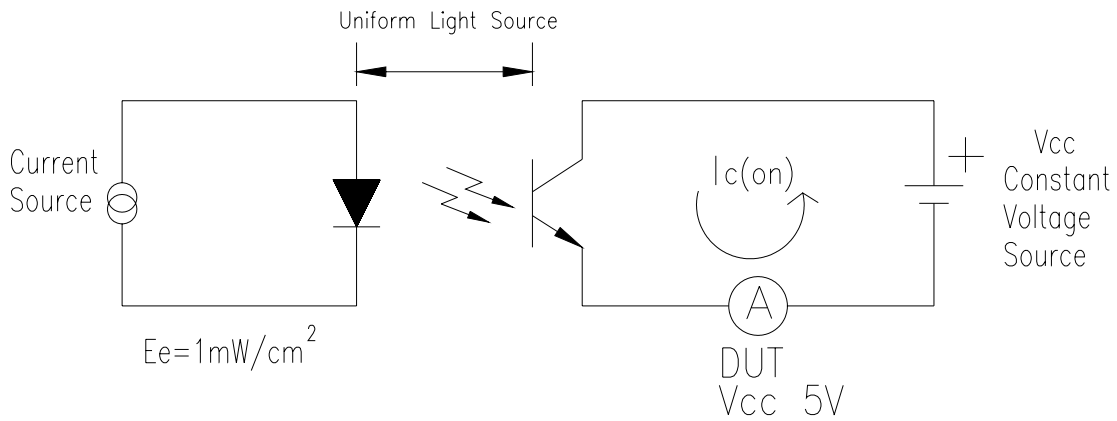


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■ **Test Method**

The collector current testing method for PTR:



■ **Ranks**

Color Code	Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Red	7-3	Ic(on)	0.53	-	1.19	mA	Ee=1mw/cm <sup>2</sup> Vcc=5V
Blue	7-2	Ic(on)	0.88	-	1.7	mA	Ee=1mw/cm <sup>2</sup> Vcc=5V
Yellow	7-1	Ic(on)	1.24	-	2.21	mA	Ee=1mw/cm <sup>2</sup> Vcc=5V
Silver	6-2	Ic(on)	1.59	-	2.98	mA	Ee=1mw/cm <sup>2</sup> Vcc=5V
Green	6-1	Ic(on)	1.77	-	3.41	mA	Ee=1mw/cm <sup>2</sup> Vcc=5V

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**■ Reliability Test Item And Condition**

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

Confidence level : 90%

LTPD : 10%

Test Items	Test Conditions	Failure Judgment Criteria	Samples(n) Defective(c)
Operating life test	$V_{CE}=5V$ $T_a : 25^{\circ}C$ 1000hrs	$I_c(on) \leq L \times 0.8$  $L : \text{Lower specification limit}$	n =22 , c=0
Temperature cycle	1cycle $-55^{\circ}C$ to $+25^{\circ}C$ to $+85^{\circ}C$ (30min) (5min) (30min) 50 cycle test		n =22 , c=0
Thermal shock	$-55^{\circ}C$ to $+85^{\circ}C$ (5min) (10sec) (5min) 50cycle test		n =22 , c=0
High temperature storage	Temp : $+100^{\circ}C$ 1000hrs		n =22 , c=0
Low temperature storage	Temp : $-55^{\circ}C$ 1000hrs		n =22 , c=0
High temperature High humidity	$T_a : 85^{\circ}C$ RH : 85% 1000hrs		n =22 , c=0
Solder heat	Temp : $260 \pm 5^{\circ}C$ 10 sec		n =22 , c=0
Solderability	Temp : $230 \pm 5^{\circ}C$ 3 sec 4mm from the bottom of the package.	More than 90% of lead to be covered by soldering	n =22 , c=0



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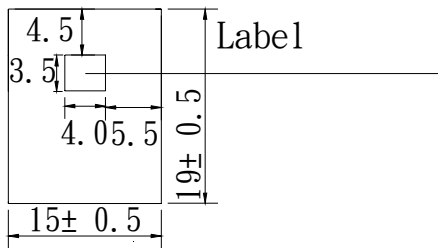
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**■ Packing Quantity Specification**

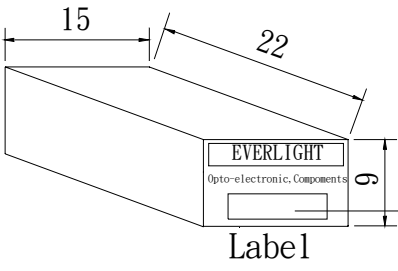
1000 pcs/1bag , 10 bags/1box , 10 boxes/1carton

**■ Label Form Specification**

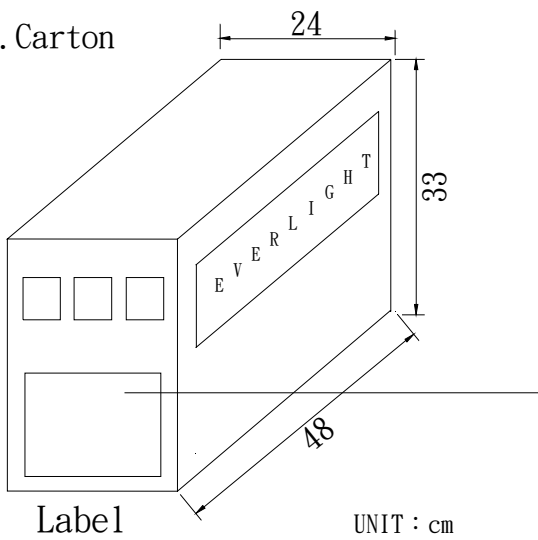
1. Bag



2. Box



3. Carton



- CPN: Customer's product number
- P/N: Product number
- QTY: Packing quantity
- CAT: Ranks
- HUE: Reference
- REF: Reference
- LOT NO: Lot number
- MADE IN TAIWAN: Production place



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■ **Notes**

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
2. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT 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.
3. 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.

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