



1206 Package Chip Phototransistor

MODEL NO : PT15-21C

■ Features :

- Fast response times
- High photo sensitivity
- Suitable for visible and near infrared radiation
- NPN silicon phototransistor
- High reliability

■ Description :

PT15-21C is a phototransistor in miniature SMD package which is molded in a water clear with flat top view lens. The device is spectrally matched to infrared emitting diode.

■ Applications :

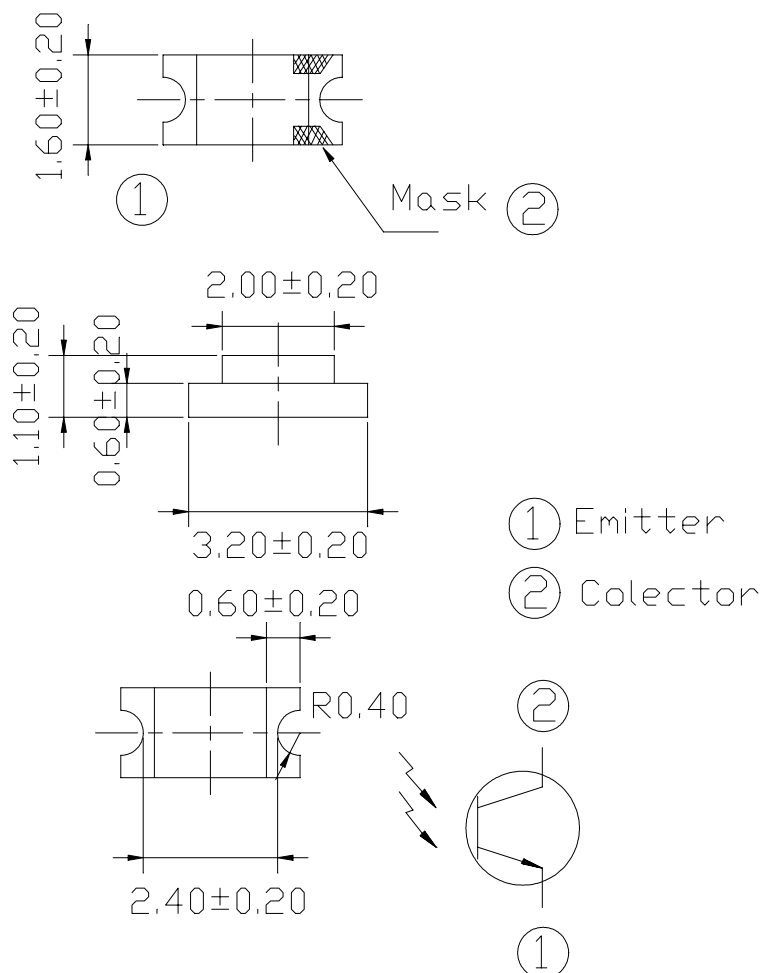
- Optoelectronic switch
- Camera
- Floppy disk drive
- Video
- VCR
- Infrared applied system

PART NO.	CHIP	LENS COLOR
	MATERIAL	
PT	Silicon	Water Clear

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■ Package Dimensions :



■ Notes :

- 1.All dimensions are in millimeter.
- 2.General Tolerance: $\pm 0.25\text{mm}$
- 3.Lead spacing is measured where the lead emerge from the package .
- 4.Lens color : Water clear.
- 5.Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
- 6.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.
- 7.When using this product , please observe the absolute maximum ratings and the instructions for use 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.

**1206 Package Chip Phototransistor**MODEL NO : PT15-21C**■ Absolute Maximum Ratings at T_A = 25°C**

Parameter	Symbol	Rating	Unit	Notice
Collector-Emitter Voltage	V _{CEO}	30	V	
Emitter-Collector- Voltage	V _{ECO}	5	V	
Collector Current	I _C	20	mA	
Operating Temperature	T _{opr}	-25 ~ +85	°C	
Storage Temperature	T _{stg}	-40 ~ +85	°C	
Soldering Temperature	T _{sol}	260	°C	
Power Dissipation at(or below) 25°C Free Air Temperature	P _c	75	mW	

■ Electronic Optical Characteristics :

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Collector-Emitter Breakdown Voltage	BV _{CEO}	30	----	----	V	I _C =100 μA Ee=0mW/cm ²
Emitter-Collector Breakdown Voltage	BV _{ECO}	5	----	----	V	I _E =100 μA Ee=0mW/cm ²
Collector-Emitter Saturation Voltage	V _{CE(sat)}	----	----	0.4	V	I _C =2mA Ee=1mW/cm ²
Rise Time	t _r	----	15	----	μS	V _{CE} =5V I _C =1mA R _L =1000Ω
Fall Time	t _f	----	15	----		
Collector Dark Current	I _{CEO}	----	----	100	nA	V _{CE} =20V Ee=0mW/cm ²
On State Collector Current	I _{C(on)}	0.1	0.4	----	mA	V _{CE} =5V Ee=1mW/cm ²
Wavelength of Peak Sensitivity	λ _p	----	860	----	nm	----
Rang of Spectral Bandwidth	λ _{0.5}	----	400---1200	----	nm	----

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Typical Electrical/Optical/Characteristics Curves

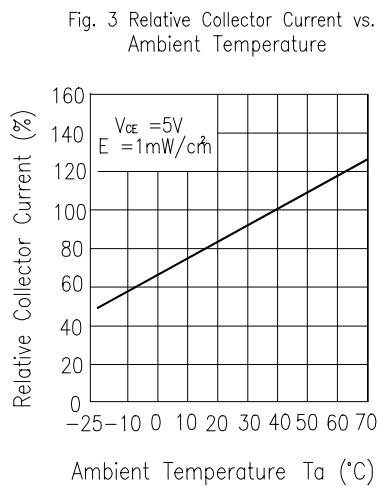
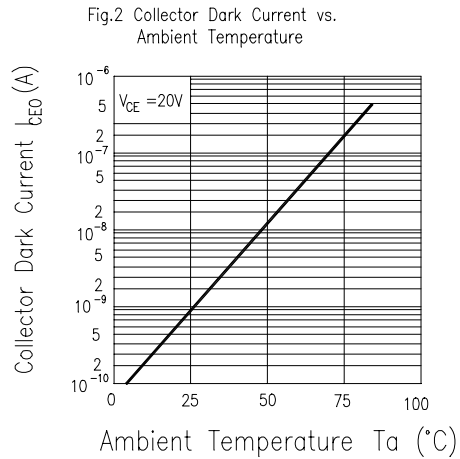
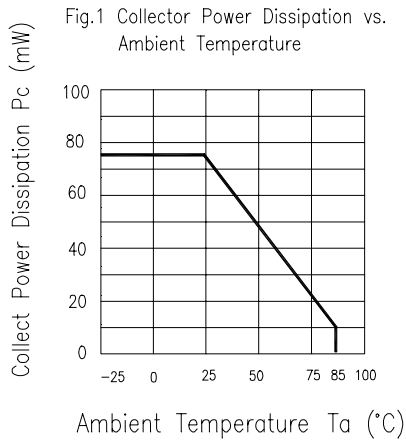


Fig.4 Collector Current vs. Irradiance

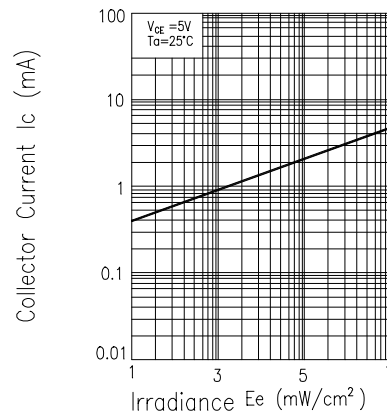


Fig.5 Spectral Sensitivity

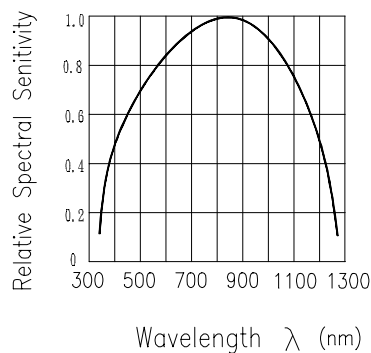
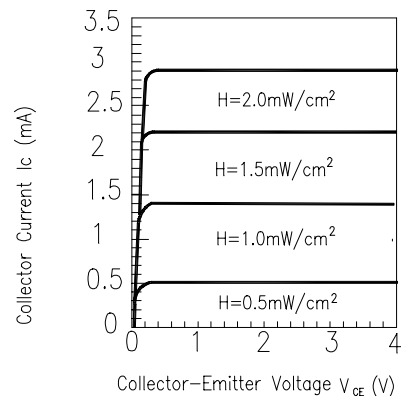


Fig.6 Collector Current vs. Collector-Emitter Voltage





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■ Reliability Test Item And Condition

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

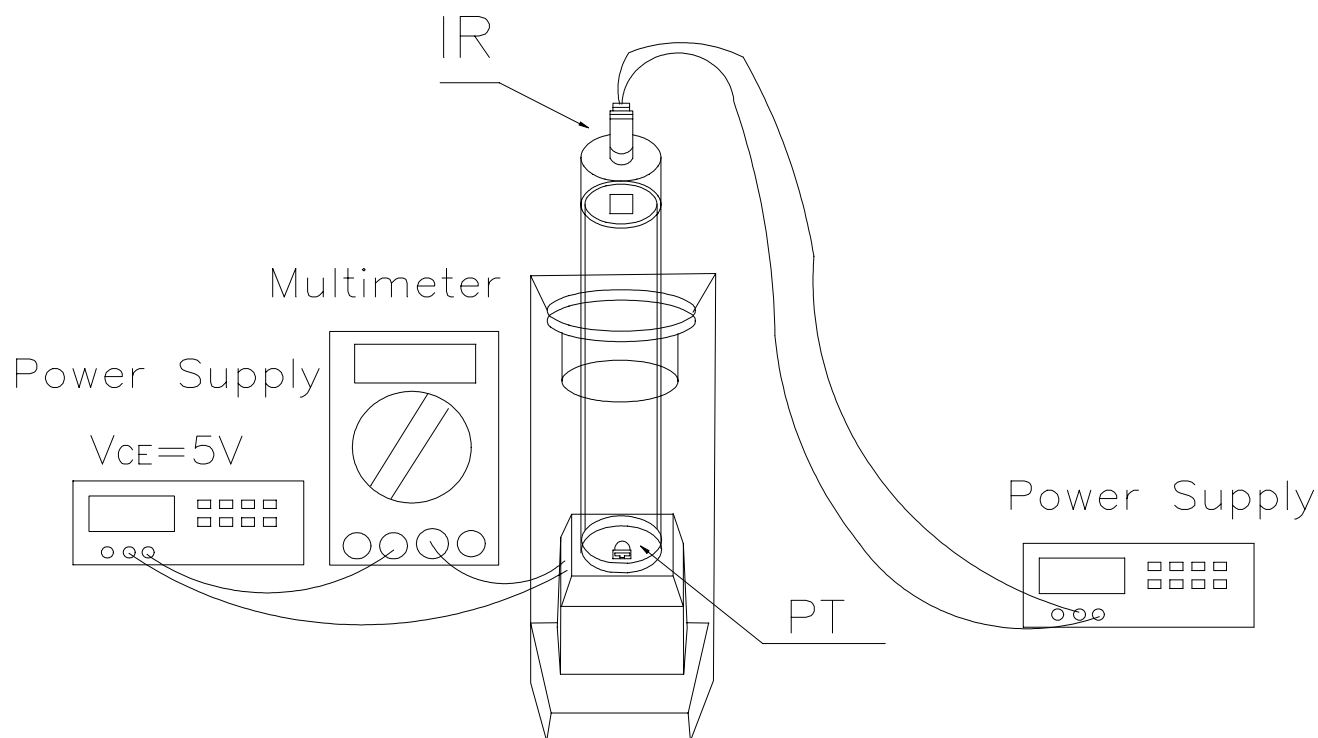
Confidence level:90%

LTPD:10%

NO.	Item	Test Conditions	Test Hours/ Cycle	Sample Size	Failure Judgement Criteria	Ac/Re
1	REFLOW	TEMP : 240°C ± 5 °C 5 sec	6 Min	22 PCs	More than 90% of lead to be covered by soldering	0/1
2	Temperature Cycle	H : +85°C 30 min ↑ 5 min ↓ L : -55°C 30 min	50 cycle	22 PCs	$I_{c(on)} \leq L \times 0.8$ L : Lower specification limit	0/1
3	Thermal Shock	H : +100°C 5 min ↑ 10 sec ↓ L : -10°C 30 min	50 cycle	22 PCs		0/1
4	High Temperature Storage	TEMP. : +100°C	1000 hrs	22 PCs		0/1
5	Low Temperature Storage	TEMP. : -55°C	1000 hrs	22 PCs		0/1
6	DC Operating Life	$V_{CE}=5V$	1000 hrs	22 PCs		0/1
7	High Temperature / High Humidity	85°C / 85% R.H.	1000 hrs	22 PCs		0/1

1206 Package Chip PhototransistorMODEL NO : PT15-21C**Test Method For On State Collector Current :**Condition : $E_e=1\text{mW/cm}^2$, $V_{CE}=5\text{V}$ Test Item : Collector Current [$I_{C(on)}$]

Unit : mA



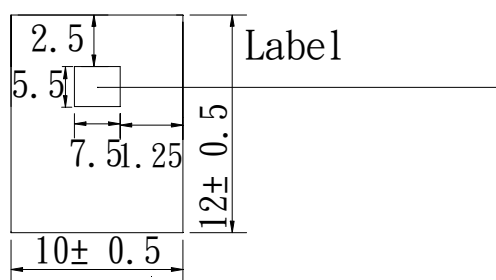


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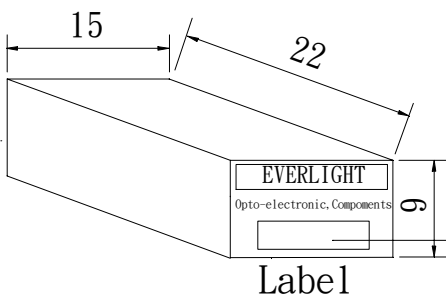
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■ Packing Specifications

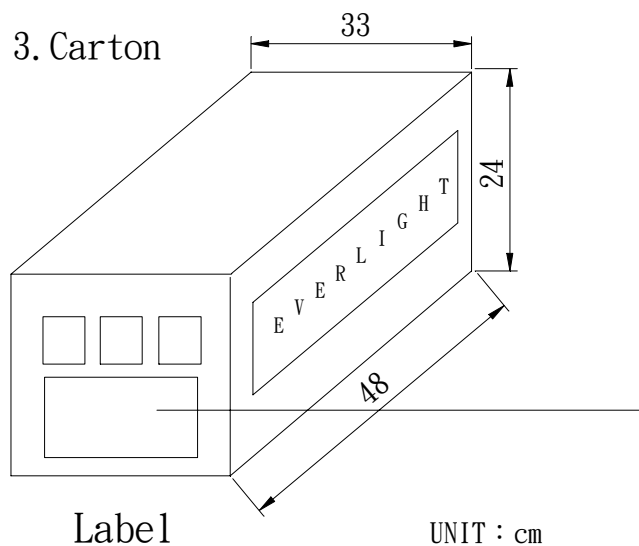
1. Bag



2. Box



3. Carton



UNIT : cm

EVERLIGHT

CPN:

P/N:

PT15-21C

QTY:

LOT NO:

CAT:

HUE:

REF:

MADE IN TAIWAN

CPN : Customer's Production Number

P/N : Production Number

QTY : Packing Quantity

CAT : Ranks

HUE : Peak Wavelength

REF : Reference

LOT NO : Lot Number

MADE IN TAIWAN : Production place

■ Packing Quantity Specification

1.1000Pcs/1Bag , 10Bags/1Box

2.10Boxes/1Carton