



Top Phototransistor

MODEL NO : PT67-21B/C2/L41/TR8

■ Features :

- Fast response time
- High photo sensitivity
- Small junction capacitance
- High reliability

■ Description :

- PT67-21B/C2/L41/TR8 is a high speed silicon NPN epitaxial planar phototransistor in a compact surface-mountable package. It's compatible with automatic placement equipment and can withstand IR reflow,vapor phase reflow,and wave solder processes.

■ Applications :

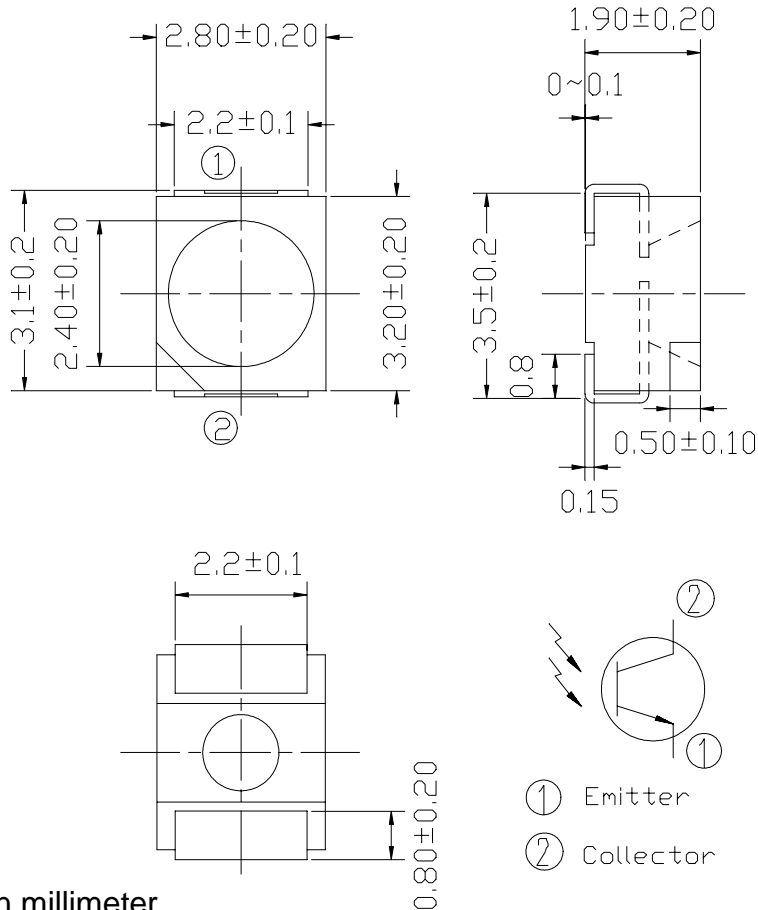
- Miniature switch
- Counters and sorter
- Interrupter
- Tape and card reader
- Encoder
- Position sensor

| PART NO. | CHIP | LENS COLOR |
|----------|----------|------------|
| | MATERIAL | |
| PT | Silicon | Black |

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■ Package Dimensions :



■ Notes :

1. All dimensions are in millimeter.
2. General Tolerance: $\pm 0.1\text{mm}$
3. Lens color : Black transparent.
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. 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.



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■ Absolute Maximum Ratings at $T_A = 25^\circ\text{C}$

| Parameter | Symbol | Rating | Unit | Notice |
|--|------------------|-----------|------------------|--------|
| Collector-Emitter Voltage | V_{CEO} | 60 | V | |
| Emitter-Collector-Voltage | V_{ECO} | 5 | V | |
| Collector Current | I_{C} | 50 | mA | |
| Operating Temperature | T_{opr} | -25 ~ +85 | $^\circ\text{C}$ | |
| Storage Temperature | T_{stg} | -40 ~ +85 | $^\circ\text{C}$ | |
| Lead Soldering Temperature | T_{sol} | 260 | $^\circ\text{C}$ | |
| Power Dissipation at(or below) 25 $^\circ\text{C}$ Free Air Temperature | P_{c} | 100 | mW | |

■ Electronic Optical Characteristics :

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|---|----------------------|------|----------------|------|---------------|---|
| Collector-Emitter Breakdown Voltage | BV_{CEO} | 60 | ---- | ---- | V | $I_{\text{C}}=100\ \mu\text{A}$ $E_{\text{e}}=0\text{mW}/\text{cm}^2$ |
| Emitter-Collector Breakdown Voltage | BV_{ECO} | 5 | ---- | ---- | V | $I_{\text{E}}=100\ \mu\text{A}$ $E_{\text{e}}=0\text{mW}/\text{cm}^2$ |
| Collector-Emitter Saturation Voltage | $V_{\text{CE(sat)}}$ | ---- | ---- | 0.4 | V | $I_{\text{C}}=2\text{mA}$ $E_{\text{e}}=1\text{mW}/\text{cm}^2$ |
| Rise Time | t_{r} | ---- | 15 | ---- | μS | $V_{\text{CE}}=5\text{V}$ $I_{\text{C}}=1\text{mA}$ $R_{\text{L}}=1000\ \Omega$ |
| Fall Time | t_{f} | ---- | 15 | ---- | | |
| Collector Dark Current | I_{CEO} | ---- | ---- | 100 | nA | $E_{\text{e}}=0\text{mW}/\text{cm}^2$ $V_{\text{CE}}=20\text{V}$ |
| On State Collector Current | $I_{\text{C(on)}}$ | 0.5 | 1.0 | ---- | mA | $E_{\text{e}}=1\text{mW}/\text{cm}^2$ $V_{\text{CE}}=5\text{V}$ |
| Wavelength of Peak Sensitivity | λ_{p} | ---- | 980 | ---- | nm | ---- |
| Rang of Spectrial Bandwith | $\lambda_{0.5}$ | ---- | 700--- 1200 | ---- | nm | ---- |



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DEVICE NUMBER : DTT-067-028 REV : 1.0
ECN : _____ PAGE : 4/7

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■ Typical Electrical/Optical/Characteristics Curves :



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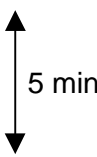
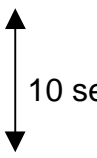
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■ Reliability Test Item And Condition

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

Confidence level:90%

LTPD:10%

| NO. | Item | Test Conditions | Test Hours/ Cycles | Sample Size | Failure Judgement Criteria | Ac/Re |
|-----|----------------------------------|---|-----------------------|-------------|--|-------|
| 1 | REFLOW | TEMP : 240°C ± 5 °C 5 secs | 6 Mins | 22 pcs | $I_{C(on)} \leq L \times 0.8$ L:Lower specification limit | 0/1 |
| 2 | Temperature Cycle | H : +85°C 30 mins  L : -55°C 30 mins | 50 cycles | 22 pcs | | 0/1 |
| 3 | Thermal Shock | H : +100°C 5 mins  L : -10°C 5 mins | 50 cycles | 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 |

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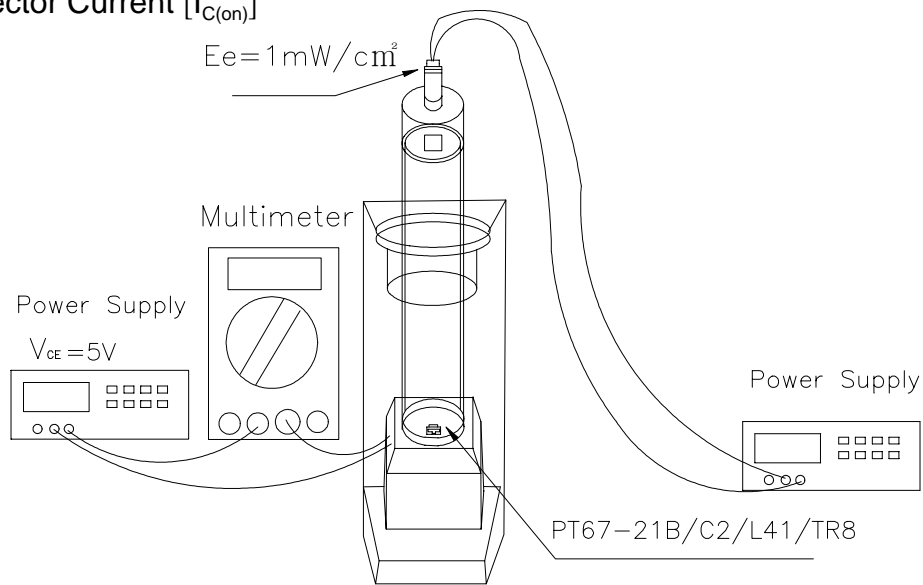
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■ Test Method For Reverse Light Current

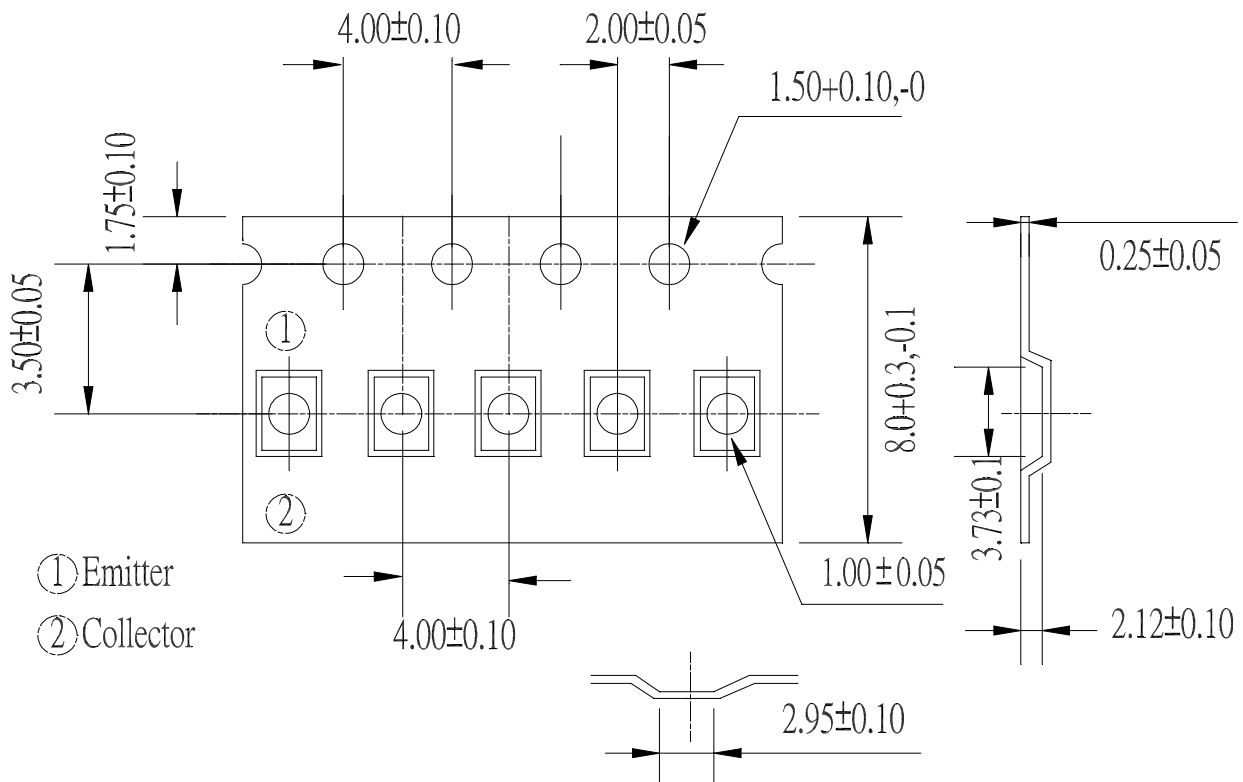
Condition: $E_e=1\text{mW}/\text{cm}^2, V_{CE}=5\text{V}$

Test Item: Collector Current [$I_{C(on)}$]

(Unit: mA)



■ Package Dimensions:





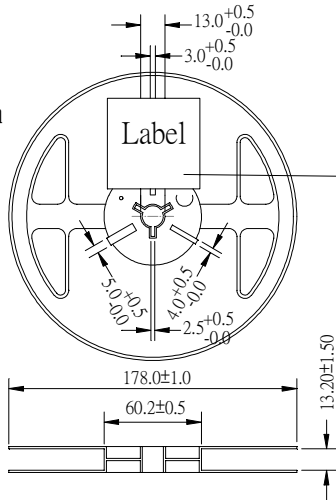
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■ Packing Specifications

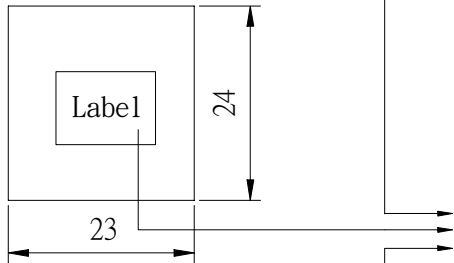
1. Scroll

Unit:mm



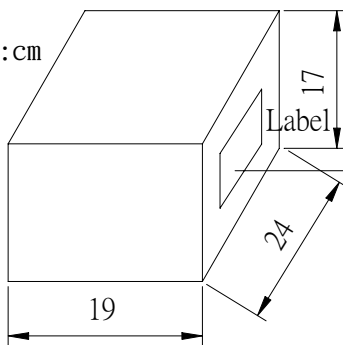
2. Bag

Unit:cm



3. Carton

Unit:cm



CPN:

P/N:



PT67-21B/C2/L41/TR8

QTY:



LOT NO:

CAT:

HUE:

REF:

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

1.2000 Pcs/1Volume , 1Volume/1Bag

2.10Bags/1Carton