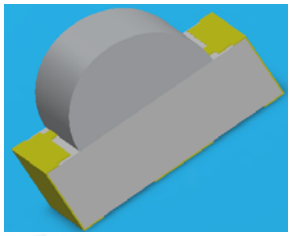
Technical Data Sheet
Chip Phototransistor with spherical top view Lens
LKPT30102B-A01(DY)



Features

- Fast response time
- High photo sensitivity
- Small junction capacitance
- Package in 8mm tape on “7” diameter reels.
- Pb free
- The product itself will remain within RoHS compliant version.
- Compliance with EU REACH
- Compliance Halogen Free .(Br <900 ppm ,Cl <900 ppm , Br+Cl < 1500 ppm).

Description

- LKPT30102B-A01(DY) is a phototransistor in miniature SMD packagewhich is molded in a Black epoxy with spherical top view lens. The device is Spectrally matched to infrared emitting diode.

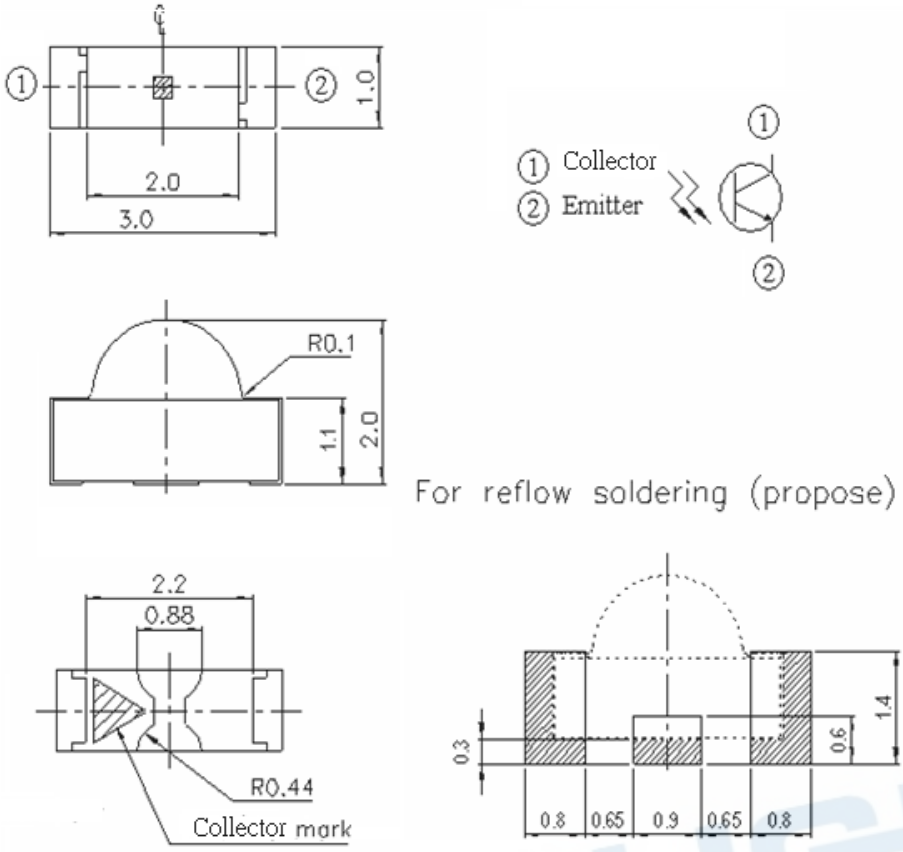
Applications

- Miniature switch
- Counters and sorter
- Position sensor
- Infrared applied system

Device Selection Guide

Device No.	Chip Material	Lens Color
PT	Silicon	Black

Package Dimensions



Notes: 1.All dimensions are in millimeters
2.Tolerances unless dimensions ±0.1mm

Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Collector-Emitter Voltage	V_{CEO}	30	V
Emitter-Collector-Voltage	V_{ECO}	5	V
Collector Current	I_C	50	mA
Operating Temperature	T_{opr}	-25 ~ +85	°C
Storage Temperature	T_{stg}	-40 ~ +85	°C
Soldering Temperature *1	T_{sol}	260	°C
Power Dissipation at(or below) 25℃Free Air Temperature	P_c	75	mW
ESD	HBM	Min.2000	V
	MM	Min.200	V

Notes: *1: Soldering time≦5 seconds.

Electro-Optical Characteristics (Ta=25℃ unless specified otherwise)

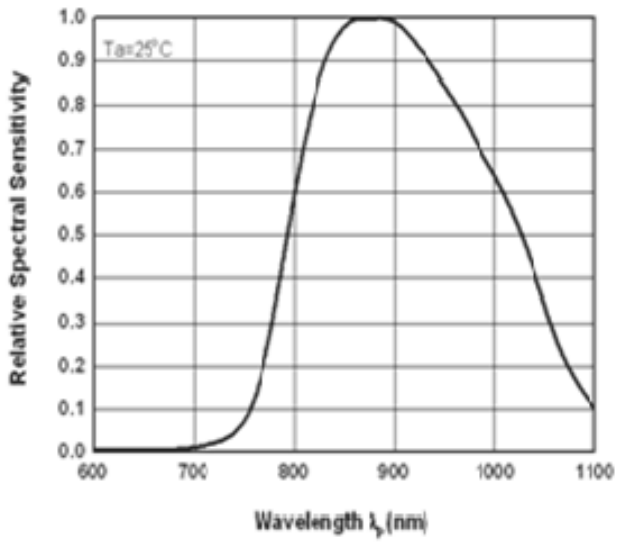
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Rang Of Spectral Bandwidth	$\lambda_{0.5}$	730	--	1100	nm	--
Wavelength Of Peak Sensitivity	λ_p	--	890	--	nm	--
Collector-Emitter Breakdown Voltage	BV_{CEO}	30	--	--	V	I_C=100μA Ee=0mW/cm²
Emitter-Collector Breakdown Voltage	BV_{ECO}	5	--	--	V	I_E=100μA Ee=0mW/cm
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	--	--	0.4	V	I_C=2mA Ee=1m W/cm²
Collector Dark Current	I_{CEO}	--	--	100	nA	V_{CE}=20V Ee=0mW/cm²
On State Collector Current	$I_{C(ON)}$	0.76	--	--	mA	V_{CE}=5V Ee=1mW /cm²

Intensity Specifications for Bin Grading：

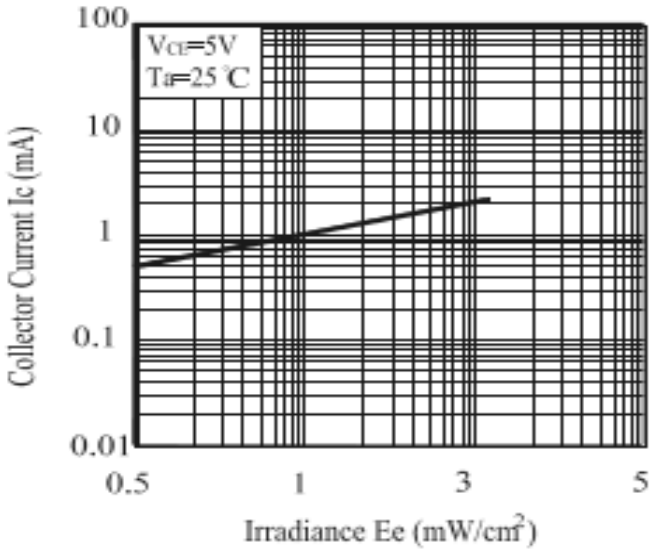
Rank	Test condition	Min	Max	Unit
BIN 3	V_{CE}=5V Ee=1mW/cm² λ_P=940nm	0.76	1.90	mA
BIN 4		1.14	2.60	
BIN 5		1.77	---	

Typical Electrical/Optical/Characteristics Curves for PT

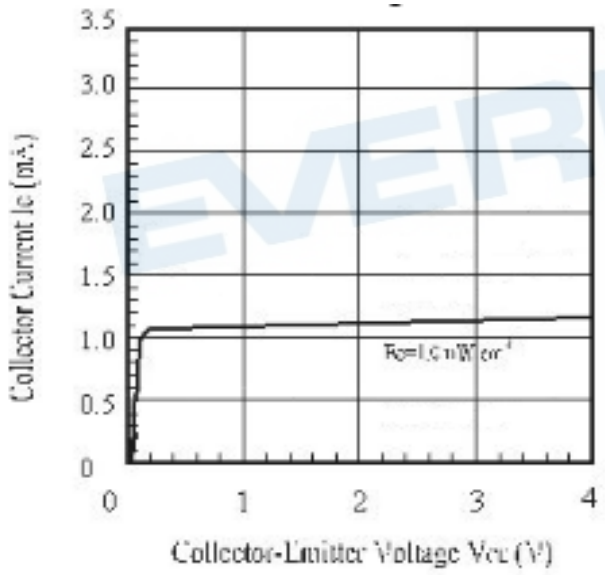
Spectral Sensitivity



Collector Current vs. Irradiance



Collector Current vs. Collector-Emitter Voltage



Precautions For Use

1. Over-current-proof

   Customer must apply resistors for protection , otherwise slight voltage shift will cause big current change

   (Burn out will happen).

2. Storage

   2.1 Do not open moisture proof bag before the products are ready to use.

   2.2 Before opening the package, the LEDs should be kept at 30℃ or less and 90%RH or less.

   2.3 The LEDs should be used within a year.

   2.4 After opening the package, the LEDs should be kept at 30℃ or less and 60%RH or less.

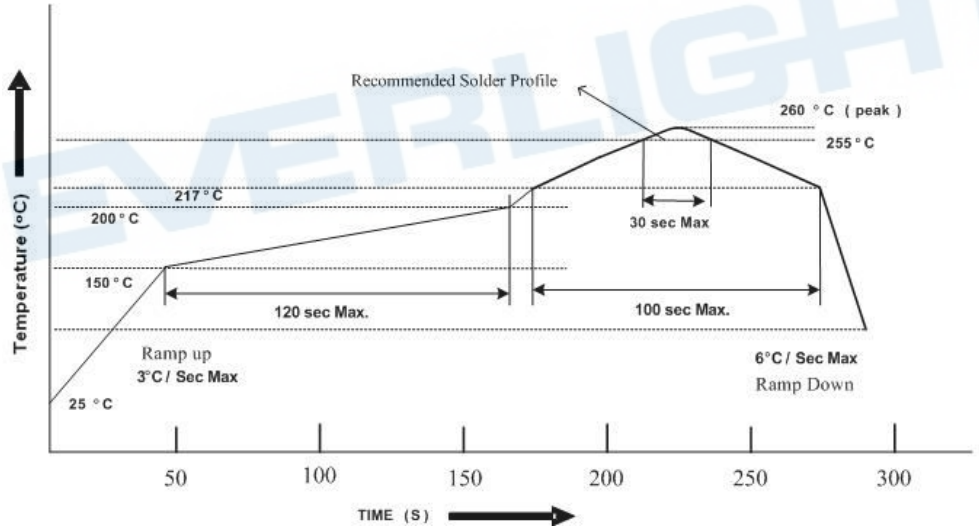
   2.5 The LEDs should be used within 168 hours (7 days) after opening the package

   2.6 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

   Baking treatment : 60±5℃ for Min. 24 hours.

3. Soldering Condition

   3.1 Pb-free solder temperature profile



   3.2 Reflow soldering should not be done more than two times.

   3.3 When soldering, do not put stress on the LEDs during heating.

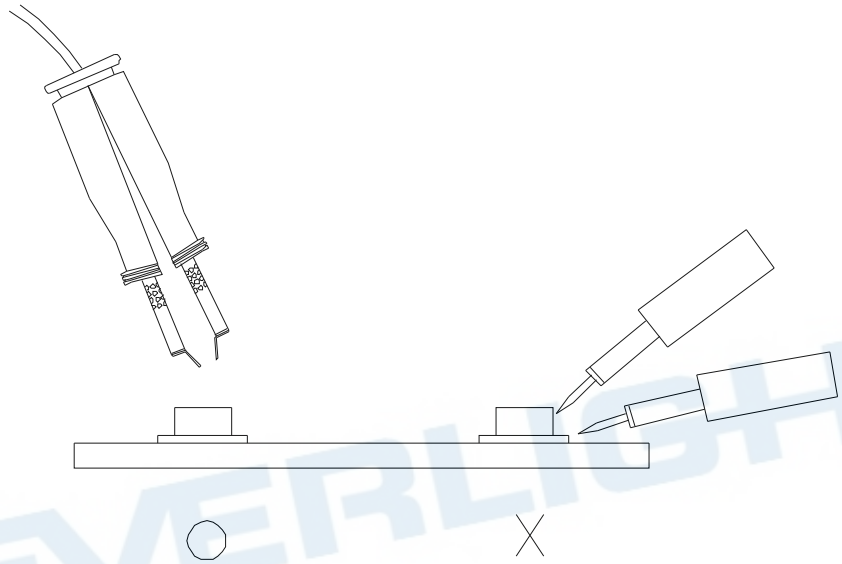
   3.4 After soldering, do not warp the circuit board.

4. Soldering Iron

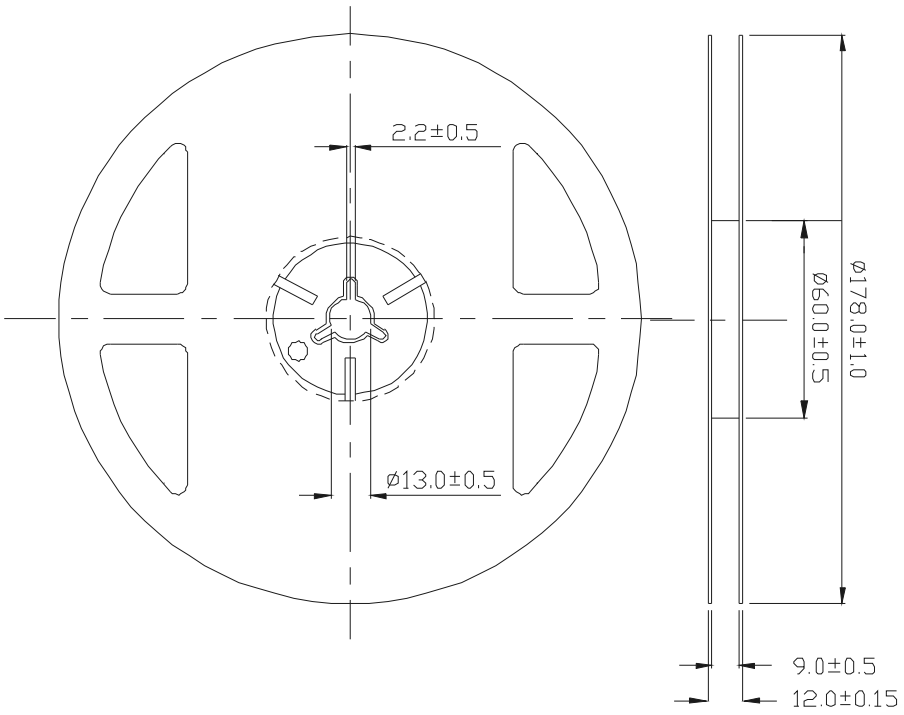
Each terminal is to go to the tip of soldering iron temperature less than 350℃ for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

5. Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.

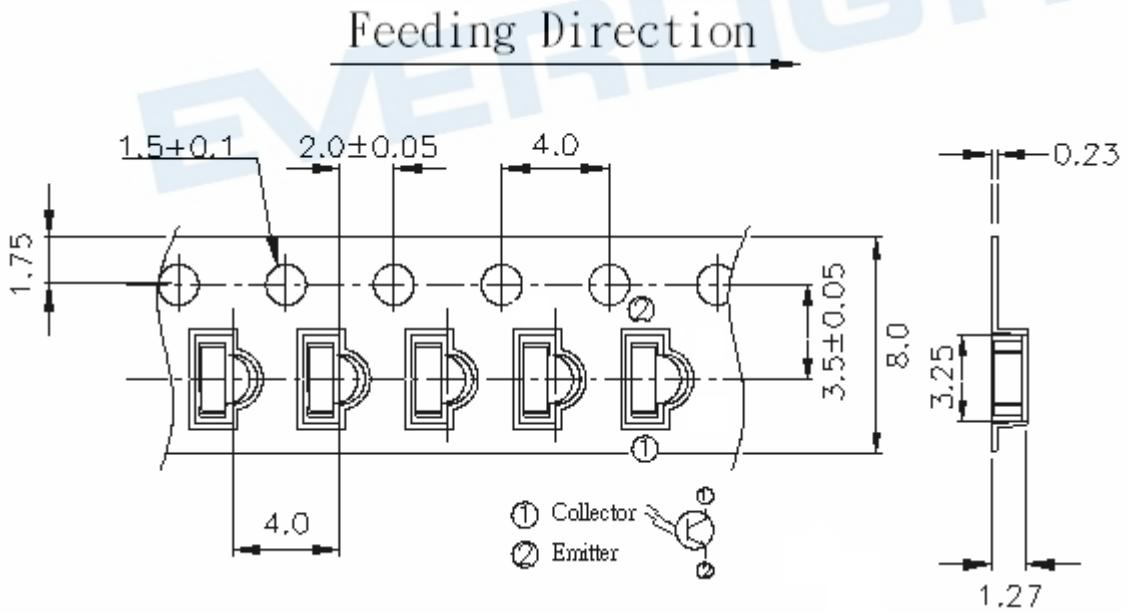


Package Dimensions



Note: The tolerances unless mentioned is ±0.1mm ,Unit = mm

Carrier Tape Dimensions :(Quantity: 2000pcs/reel)



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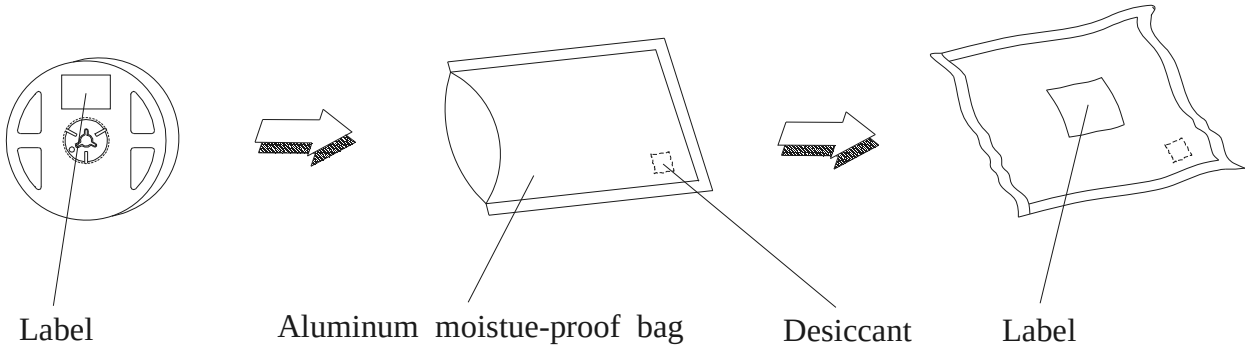
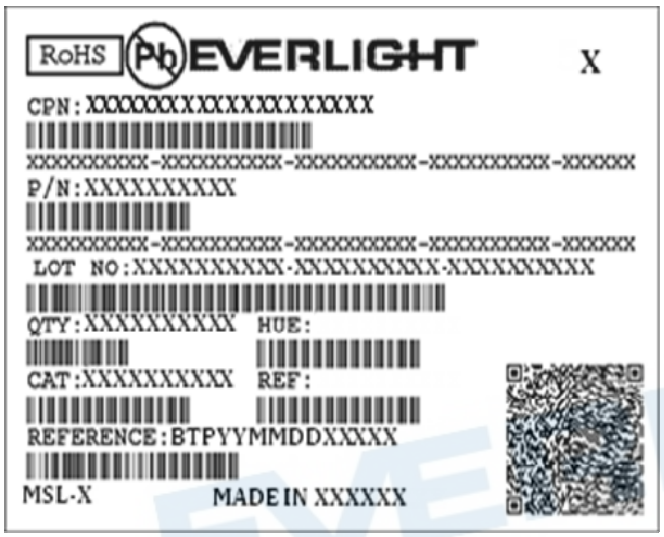
Packing Procedure



Label Form Specification



CPN: Customer's Production Number
P/N : Production Number
QTY: Packing Quantity
CAT: Ranks
HUE: Peak Wavelength
REF: Reference
LOT No: Lot Number
Production Place: MADE IN XXXXXXX

DISCLAIMER

1. EVERLIGHT reserves the right(s) on the adjustment of product material mix for the specification.
2. The product meets EVERLIGHT published specification for a period of twelve (12) months from date of shipment.
3. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
4. 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 the 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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