



LIGHT EMITTING DIODE SPECIFICATION

DESCRIPTION:	E6QYDD1204-PRA
REVISION:	V2.2
ISSUE DATE:	2019-01-18

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Features:

- Long operating life
- Low Power Consumption
- Low voltage DC operated
- RoHS Compliant



Application:

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

Part Number	Dice Material	Emitted Color	Lens Color
E6QYDD1204-PRA	Silicon	Phototransistor	Black

Electro-Optical Characteristics (T_a=25°C, @20mA)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Collector-Emitter Breakdown Voltage	BV _{CEO}	30	-	-	V	I _C =100μA, Ee=0mW/cm ²
Emitter-Collector Breakdown Voltage	BV _{ECO}	5	-	-	V	I _C =100μA, Ee=0mW/cm ²
Collector-Emitter Saturation Voltage	V _{CE(sat)}	-	-	0.4	V	I _C =100μA, Ee=0mW/cm ²
Collector Dark Current	ICEO	-	-	100	nA	I _E =20μA, Ee=0mW/cm ²
Rise Time	t _r	-	15	-	μS	V _{CE} =5V I _C =1mA, R _L =1000Ω
Fall Time	t _f	-	15	-	μS	V _{CE} =5V I _C =1mA, R _L =1000Ω
On State Collector Current	I _{C(ON)}	0.7	-	-	mA	Ee=0.555mW/cm ² , V _{CE} =5V
Wavelength Of Peak Sensitivity	λ _P	-	940	-	nm	-
Rang Of Spectral Bandwidth	λ _{0.5}	760	-	1100	nm	-

Absolute Maximum Ratings (T_a=25°C)

Parameter	Symbol	Max.	Unit
Power Dissipation	PD	70	mW
Collector-Emitter Voltage	V _{CEO}	30	V
Emitter-Collector-Voltage	V _{ECO}	5	V
Operating Temperature Range	T _{opr}	-40to+90	°C
Storage Temperature Range	T _{stg}	-40to+90	°C
Reflow Soldering	T _{sld}	260°C for 5 secs	



Optical & Electrical Characteristics

Fig.1 Collector Power Dissipation vs. Ambient Temperature

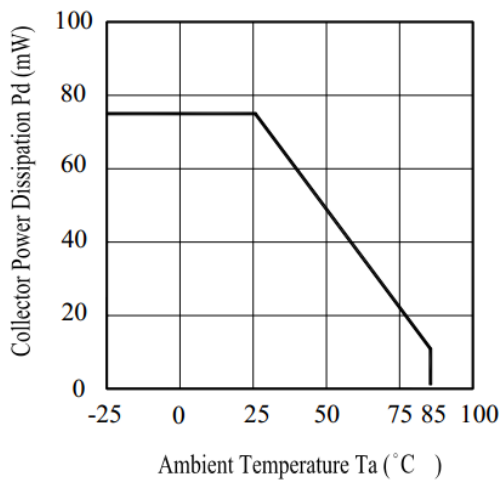


Fig.2 Spectral Sensitivity

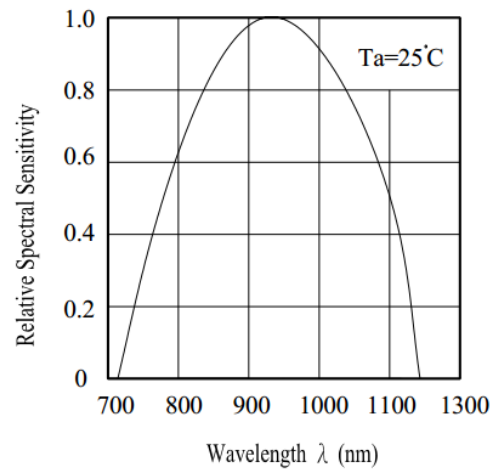


Fig.3 Relative Collector Current vs. Ambient Temperature

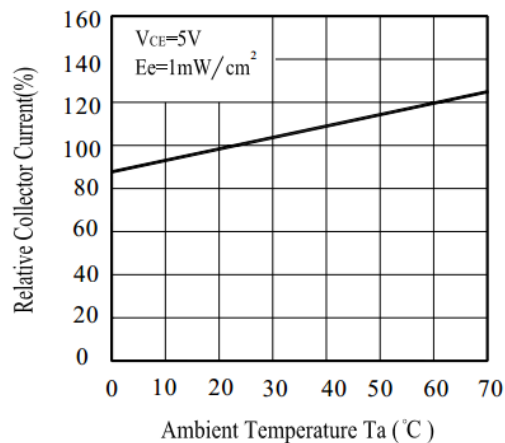


Fig.4 Collector Current vs. Irradiance

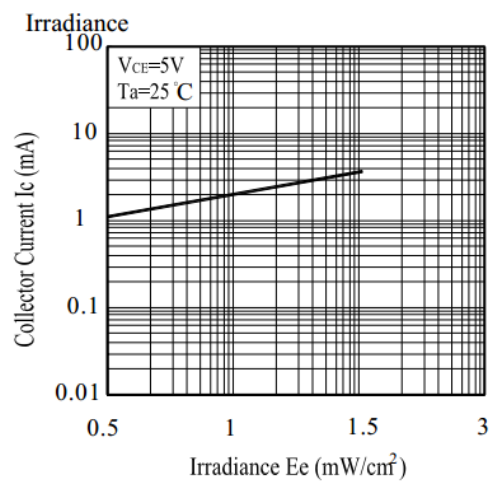


Fig.5 Collector Dark Current vs. Ambient Temperature

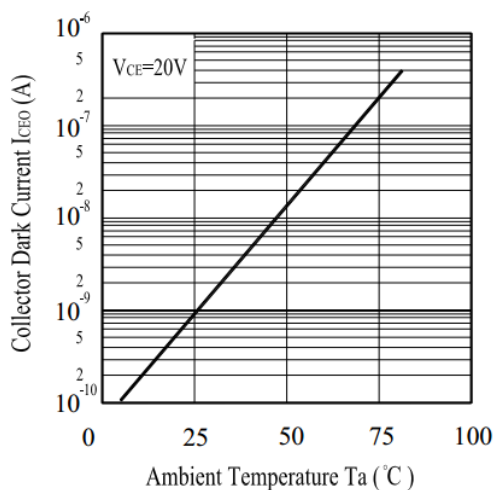
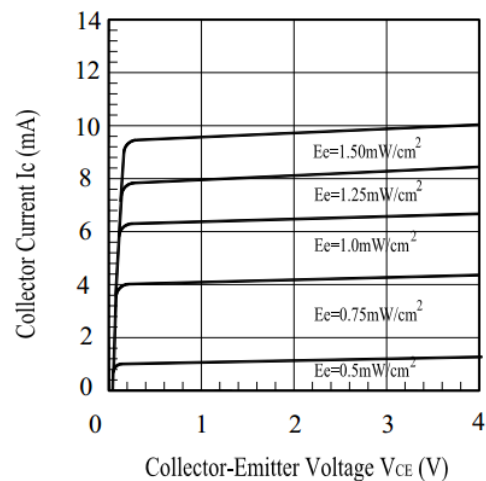


Fig.6 Collector Current vs. Collector-Emitter Voltage



Reliability Test Items And Conditions

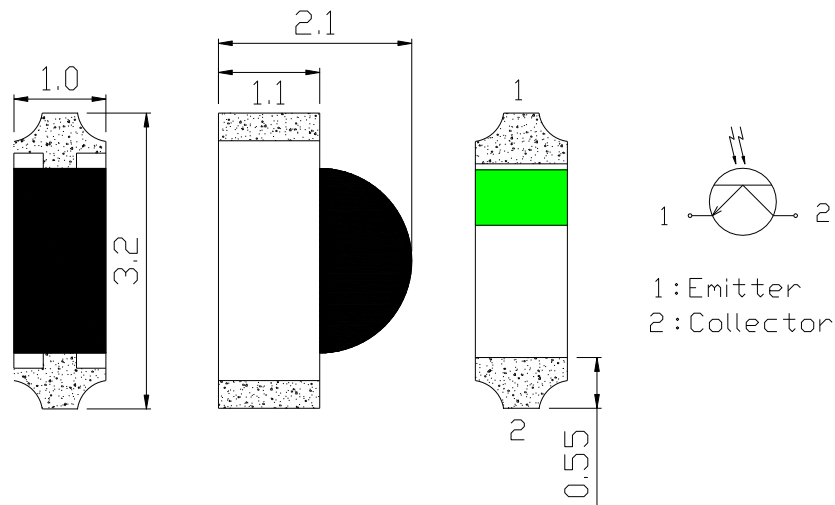
Test Items	Reference	Test Conditions	Time	Quantity	Criterion
Thermal Shock	MIL-STD-202G	-40℃ (30min) -100℃ (30min)	100 Cycles	22	0/22
Temperature And Humidity Cyclic	JEITA ED-4701 200 203	-10℃~65℃ ; 0%~90%RH	10cycles	22	0/22
High Temperature Storage	JEITA ED -4071 200 201	Ta=100℃	1000H	22	0/22
Low Temperature Storage	JEITA ED -4071 200 202	Ta=-40℃	1000H	22	0/22
High Temperature High Humidity Storage	JEITA ED -4071 100 103	Ta=60℃ ; RH=90%	1000H	22	0/22
High Temperature Life Test	JESD22-A108D	Ta=80℃	1000H	22	0/22
Life Test	JESD22-A108D	Ta=25℃	1000H	22	0/22
Resistance to Soldering Heat	GB/T 4937, II , 2.2&2.3	Tsol*=(240±5) ℃ 10secs	2 times	22	0/22

Criteria For Judging Damage

Test Items	Symbol	Test Conditions	Criteria For Judging Damage
Forward Voltage	V _F	I _F =I _{FT}	Initial Data±10%
Reverse Current	I _R	V _R =5V	I _R ≤10uA
Luminous Intensity	I _V	I _F =I _{FT}	Average I _V degradation≤30% ; Single LED I _V degradation≤50%
Resistance to Soldering Heat	-	-	Material without internal cracks,no material between stripped,no dead light



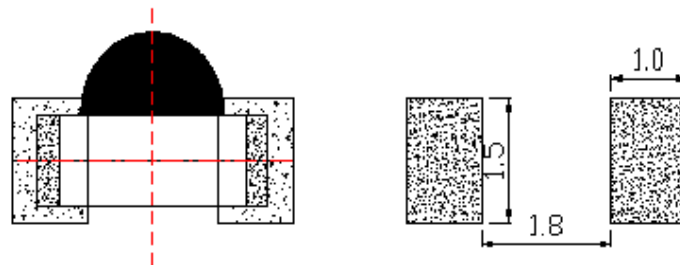
Product size (Unit:mm)



NOTES :

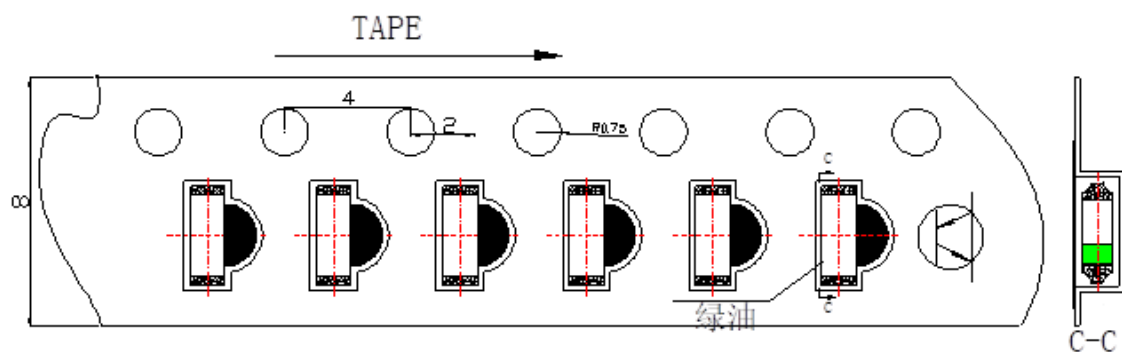
1. All dimensions are in millimeters (inches)
2. Tolerances are $\pm 0.2\text{mm}$ (0.008inch) unless otherwise noted

Recommended Soldering Pad Design (Unit:mm)



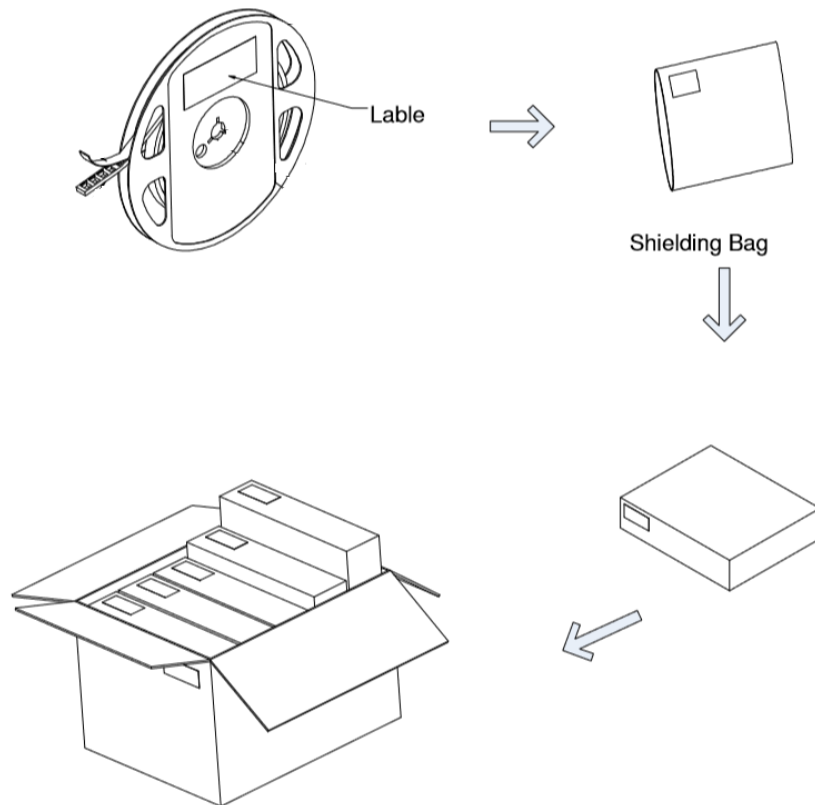
Taping and package Spec

- Tape Specification: 3,000pcs Per Reel





Packaging



LabelStyle

EKINGLUX OPTOELECTRONICS(SHANGHAI) CO.,LTD

TEL:86 21 59909181

Sales@ekingluxs.com



P/N:XXXXXXXXXXXXXXXXXX

Emitting Color: XXXX

HUE: XXX-XXX nm

IV : XXX-XXX mcd

VF: XX-XX V

QTY: XX PCS



example

BIN Code: XX

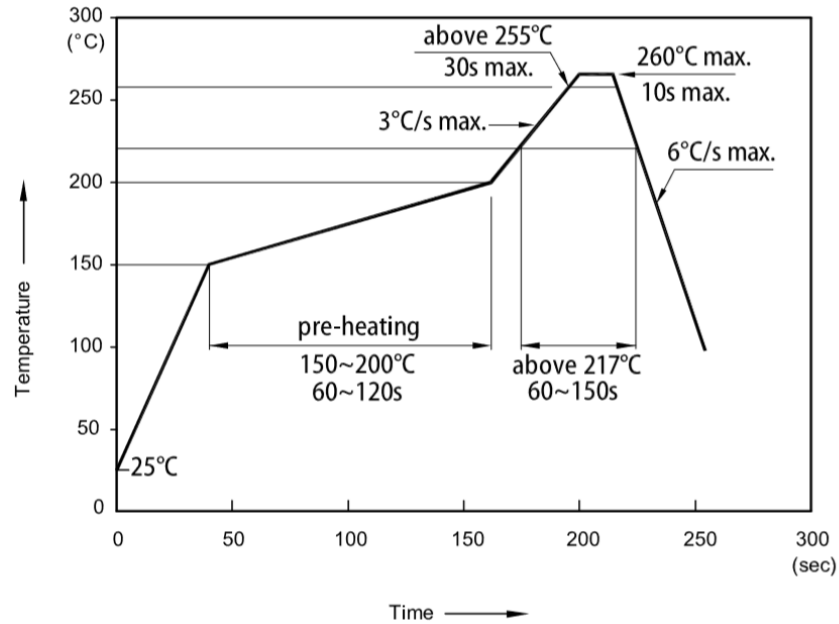
DATE: XXXX/XX/XX



LOT NO.:XXXXXXX



Reflow Soldering Instructions



1. Don't cause stress to the LEDs while it is exposed to high temperature.
2. The maximum number of reflow soldering passes is 2 times.
3. Reflow soldering is recommended. Other soldering methods are not recommended as they might cause damage to the product.



Precautions

1. Storage:

- Moisture proof and anti-electrostatic package with moisture absorbent material is used, to keep moisture to a minimum.
- Before opening the package, the product should be kept at 30°C or less and humidity less than 60% RH, and be used within a year.
- After opening the package, the product should be stored at 30°C or less and humidity less than 10%RH. It is recommended that the product be operated at the workshop condition of 30°C or less and humidity less than 60%RH.
- If the moisture absorbent material has faded away or the LEDs have exceeded the storage time, baking treatment should be performed based on the following condition: (70±5)°C for 24 hours.

2. Static Electricity:

Static electricity or surge voltage damages the LEDs. Damaged LEDs will show some unusual characteristics such as the forward voltage becoming lower, or the LEDs do not light at the low current, even not light.

All devices, equipment and machinery must be properly grounded. At the same time, it is recommended that wrist bands or anti-electrostatic gloves, anti-electrostatic containers be used when dealing with the LEDs.

3. Vulcanization:

LED curing is due to sulfur being in bracket and the +1 price of silver in the chemical reaction generated Ag₂S in the process. It will lead to the capacity of reflecting of silver layer reducing, light color temperature drift and serious decline, seriously affecting the performance of the product. So we should take corresponding measures to avoid vulcanization, such as to avoid using sulphur volatile substances and keeping away from high sulphur content of the material.