DATASHEET

ITR1204SR10A/TR

Features

- High sensitivity
- Cut-Off visible wavelength
- Compliance Halogen Free(Br < 900ppm, Cl < 900ppm, Br+Cl < 1500ppm)
- Compliance with EU REACH
- This product itself will remain within RoHS compliant version.

Description

The SMD type ITR1204SR10A/TR consists of an infrared emitting diode and an silicon phototransistor. The phototransistor receives radiation from the IR only. This is the normal situation. But when a reflecting object close to ITR, phototransistor receives the reflecting radiation and the different distance have different light current.

Applications

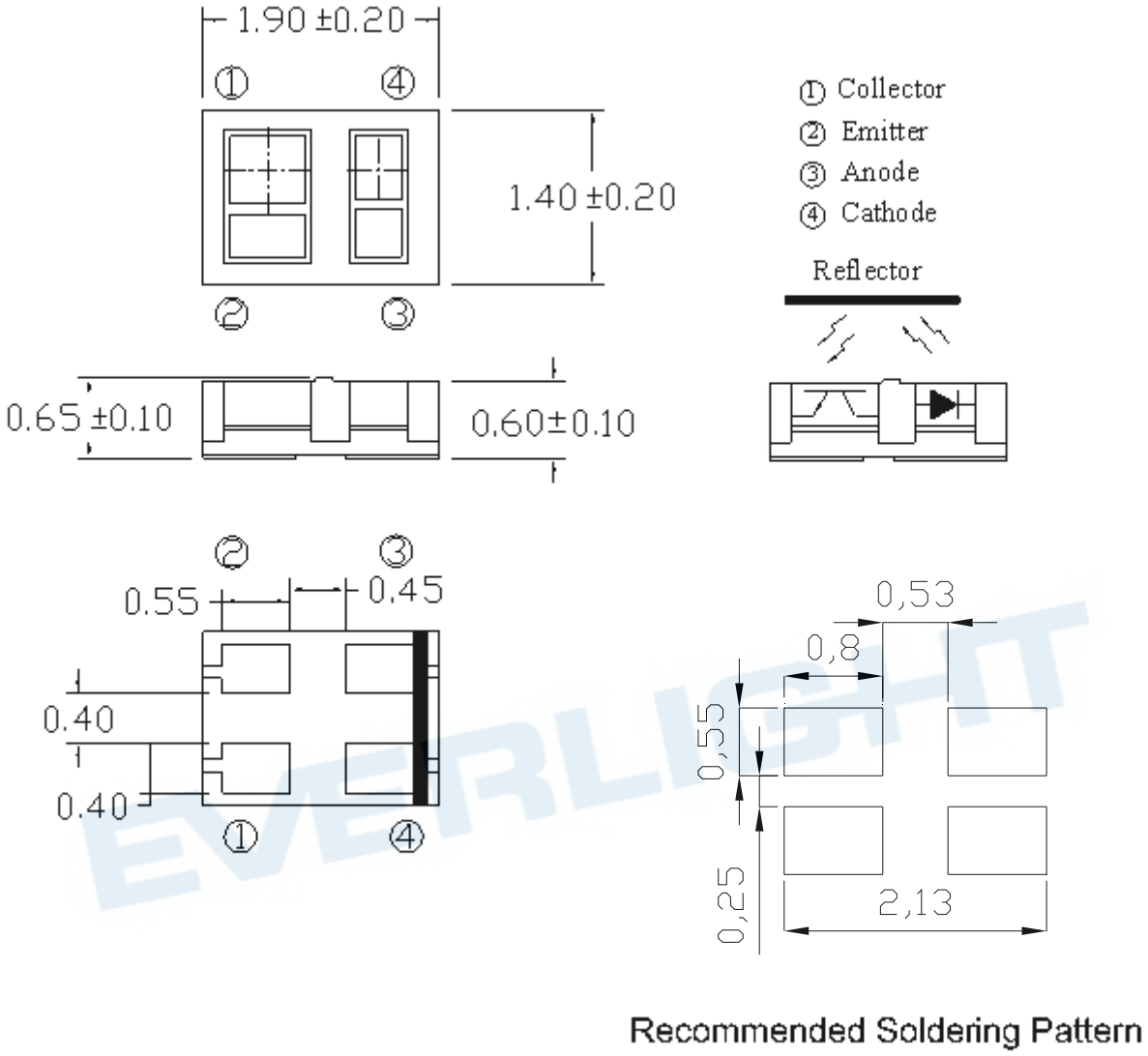
- Printer
- Switch Scanner
- Non-contact Switching

Device Selection Guide

Device No.	Chip Material	Lens Color
IR	GaAs	Black clear
PT	Silicon	Black clear

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Package Dimensions



Recommended Soldering Pattern

Notes:
1. All dimensions are in millimeters
2. Tolerances unless dimensions ±0.2mm
3. Lead spacing is measured where the lead emerge from the package

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Absolute Maximum Ratings (Ta=25℃)

Parameter		Symbol	Ratings	Unit
Input	Power Dissipation at(or below) 25℃ Free Air Temperature	Pd	75	mW
	Reverse Voltage	V_R	6	V
	Forward Current	I_F	50	mA
Output	Collector Power Dissipation	P_C	75	mW
	Collector Current	I_C	20	mA
	Collector-Emitter Voltage	B V_{CEO}	30	V
	Emitter-Collector Voltage	B V_{ECO}	5	V
Operating Temperature		Topr	-25~+85	℃
Storage Temperature		Tstg	-40~+100	℃
Lead Soldering Temperature (*1)		Tsol	260	℃

(*1) t ≦5 Sec

Electro-Optical Characteristics (Ta=25℃)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Condition
Input	Forward Voltage	V_F	-	1.25	1.5	V	I_F=4mA
	Reverse Current	I_R	-	-	10	μA	V_R=6V
	Peak Wavelength	λ_P	-	940	-	nm	I_F=20mA
Output	Dark Current	I_{CEO}	-	-	0.1	uA	V_{CE}=10V
Transfer Characteristics	Collect Current	$I_{C(ON)}$	60	-	130	μA	V_{CE}=2V, I_F=4mA
	Operating Dark Current*	I_{CEOD}			1	μA	V_{CE}=2V, I_F=2mA
	Rise Time	T_r	-	15	-	μs	V_{CE}=2V I_C=0.1mA R_L=1000Ω
	Fall Time	T_f	-	15	-	μs	

*Operating dark current may be affected by surrounding situation.

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Opto Characteristic Curves

Fig.1 Forward Current vs. Forward Voltage

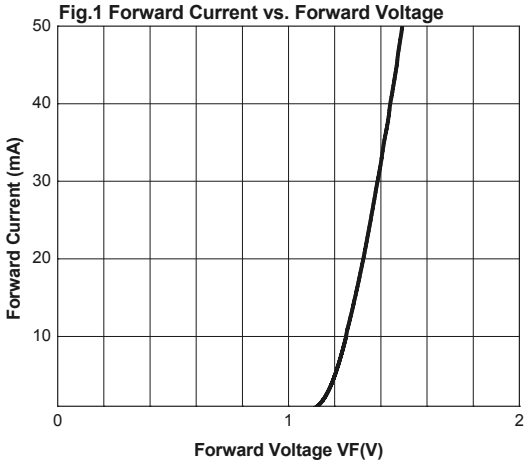


Fig.2 Forward Voltage VS. Temperature

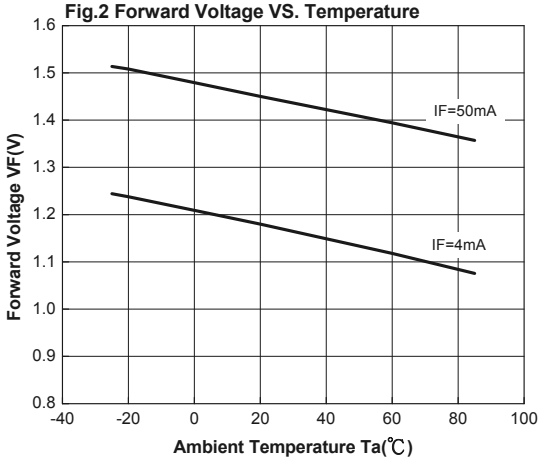


Fig.3 Output Current VS. Forward Current

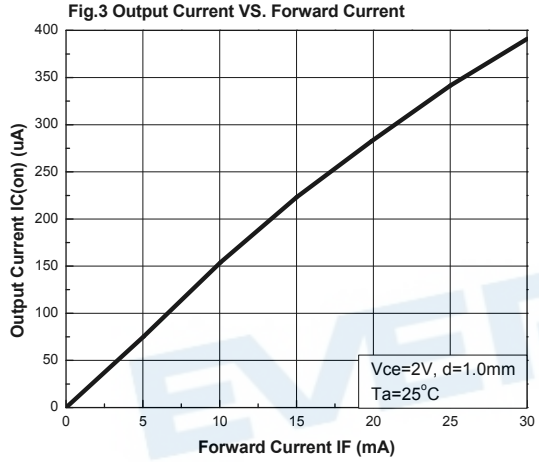


Fig.4 Relative Light Current vs Ambient Temp.

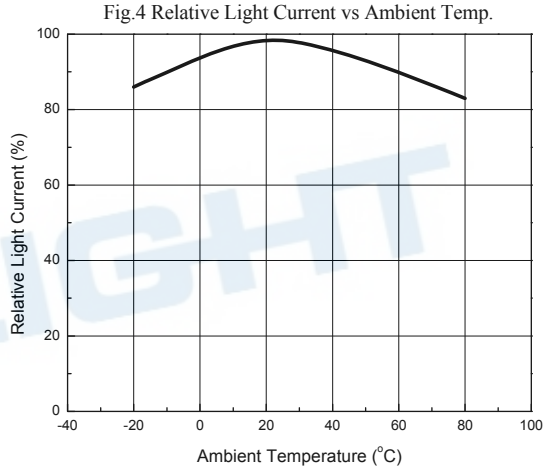


Fig.5 Output Current vs Collector-Emitter Voltage

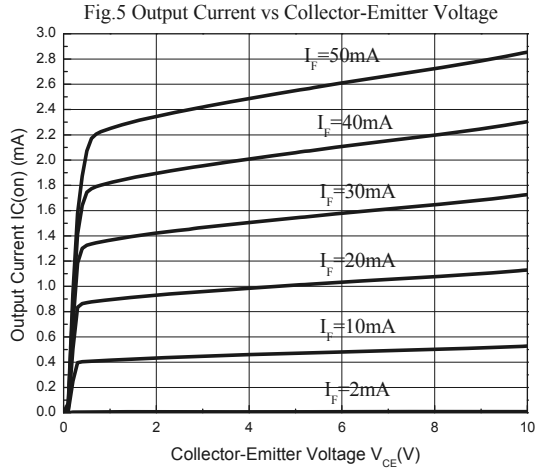
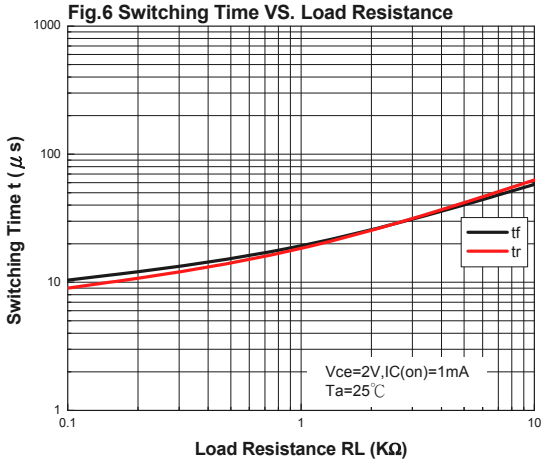
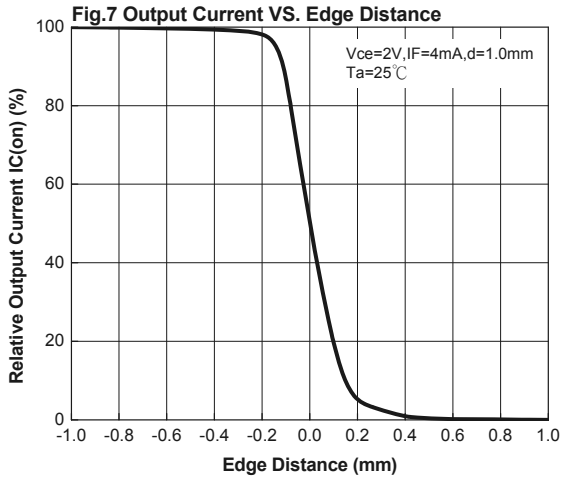


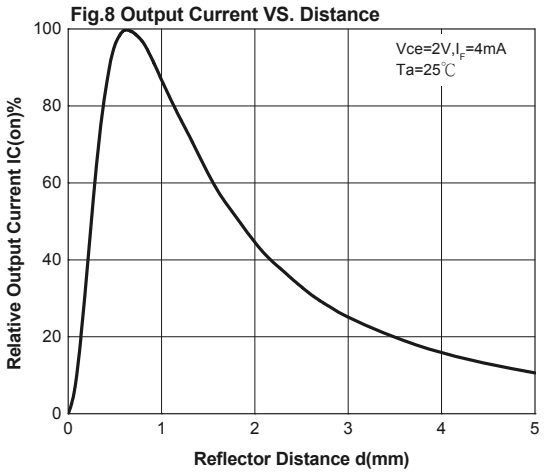
Fig.6 Switching Time VS. Load Resistance



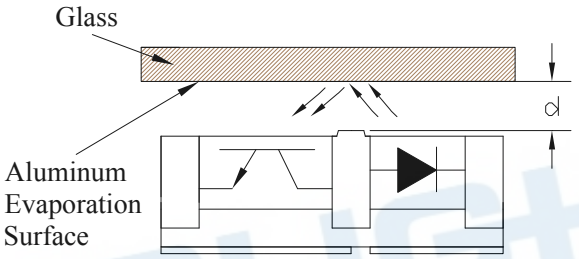
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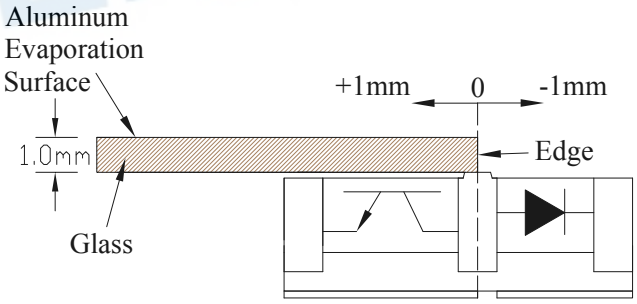




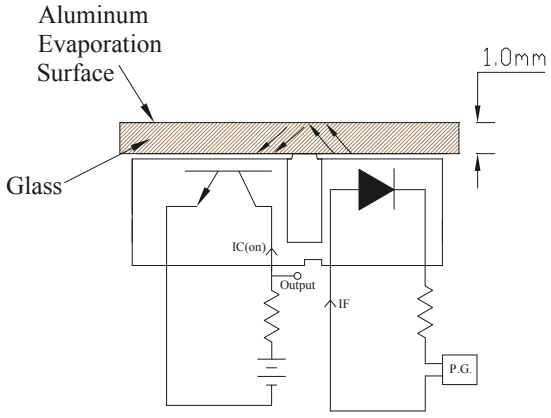
Measuring Specification For Reflector Response



Measuring Specification For Edge Response

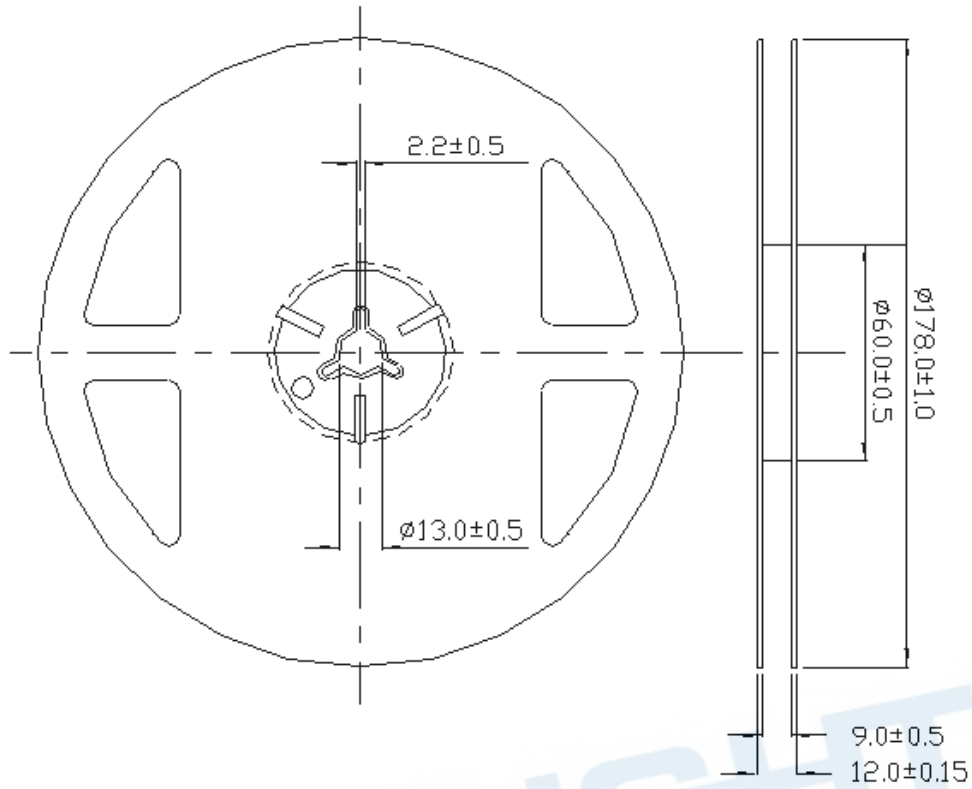


Measuring Circuit For Response Time

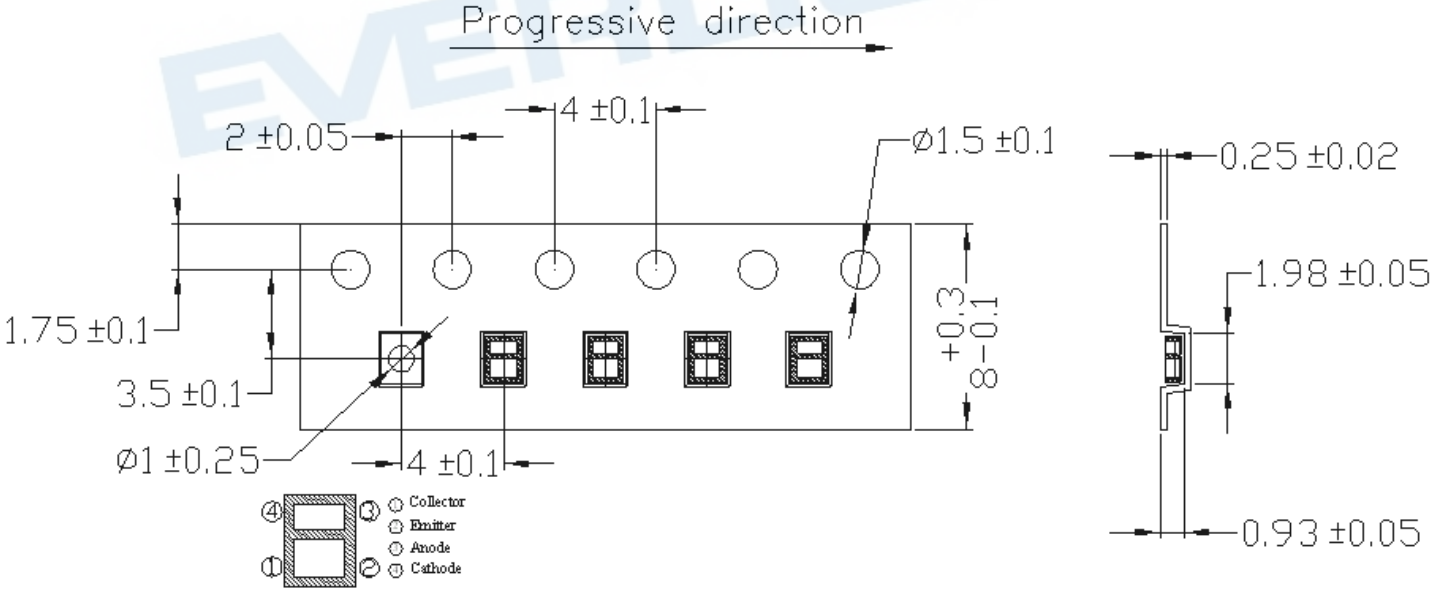


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Package Dimensions



Taping Dimension



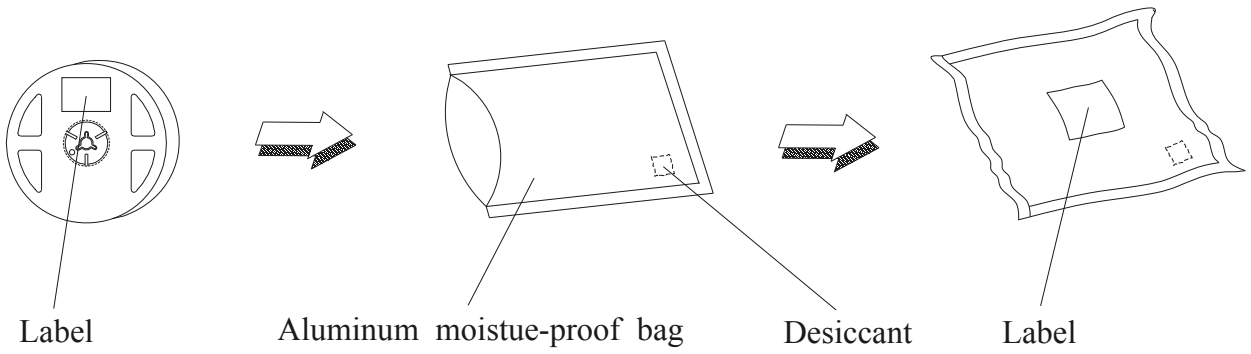
Packing Quantity Specification

1.2000PCS/1Bag，10Bags/1Box

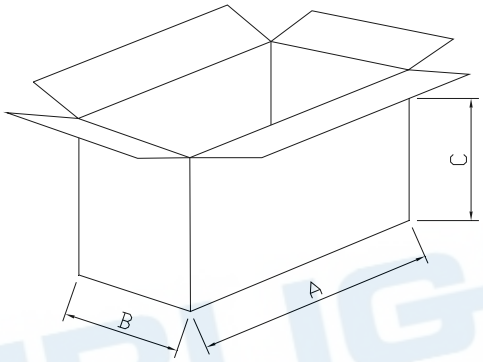
2.10Boxes/1Carton

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Packing Procedure



Outer Carton Dimension : 409mm(A)*245mm(B)*360mm(C)



Recommended Method of Storage

The following are general recommendations for moisture sensitive level (MSL) 3 storage and use：

1. Storage

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

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

1.3 The device should be used within a year.

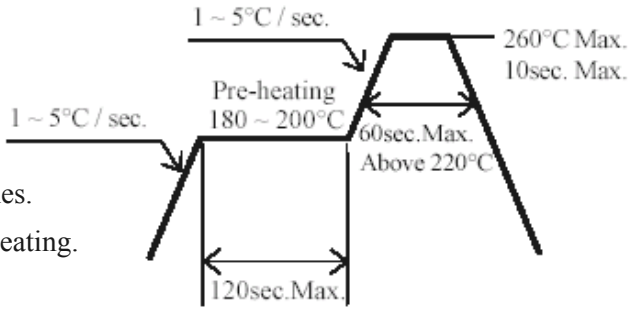
1.4 After opening the package, the device should be kept at 30℃ or less and 70%RH or less.

1.5 The device should be used within 168 hours (7 days) after opening the package.

1.6 If the moisture absorbent material (silica gel) has faded away or the device have exceeded the storage time, baking treatment should be performed using the following conditions. Baking treatment : 60±5℃ for 24 hours.

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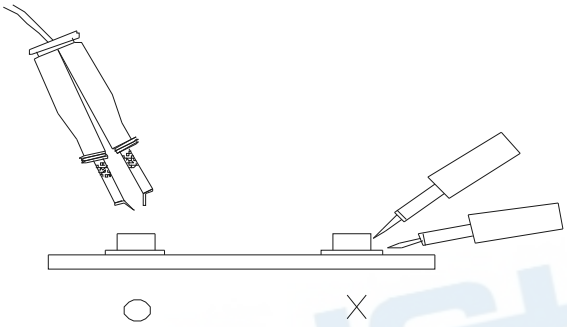
2. Soldering Condition



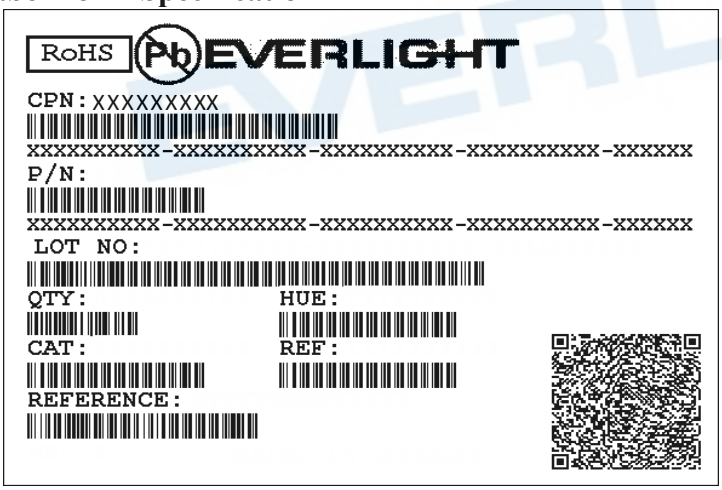
a) Pb-free solder temperature profile
b) Reflow soldering should not be done more than two times.
c) When soldering, do not put stress on the LEDs during heating.
d) After soldering, do not warp the circuit board.

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.



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
MADE IN TAIWAN: Production Place

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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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19-213/Y2C-CQ2R2L/3T(CY) ALS-PDIC15-21C/L230/TR8 EL357N(A)(TA)-G PT334-6B 12-215/BHC-ZK1L2B18X/3C 19-213SURC/S530-A3/5T 27-21/GHC-YR1S2M/3C CNY17-2 EL3083 ELM440A(TA)(BMS)-VG IR968-8P(X1-X4)XBY ITR1205ST11A/TR 45-21UMC/404589E/TR8-T EL817S2(C)(TU)-FG IR1503 IRM-3638JF 12-215SYGC/S530-E1/TR8 12-21SURC/S530-A2/TR8 19-21SURC/S530-A2/4T H11L1S(TA) IR383-A EL357N(B)(TA)-VG EL3H7(B)(TA)-VG ELM406A(TA)-G PD204-6B/L3 11-21SURC/S530-A2/3T 6N137S(TA) 15-21/BHC-AP1Q2/3T 19-213/Y2C-CN1P2B/5T ALS-PDT243-3C/L451