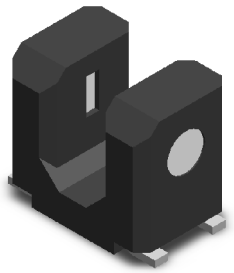
DATASHEET

Technical Data Sheet
Opto Interrupter
ITR1205ST11A/TR



Features

- Gap：1.1 mm
- Slit：0.3 mm
- Compact SMD Package
- Pb/Halogens free
- RoHS compliant

Description

- ITR1205ST11A/TR is an ultra small outline photo-interrupter, integrating both infrared emitter and silicon phototransistor detector with plastic molding housing.

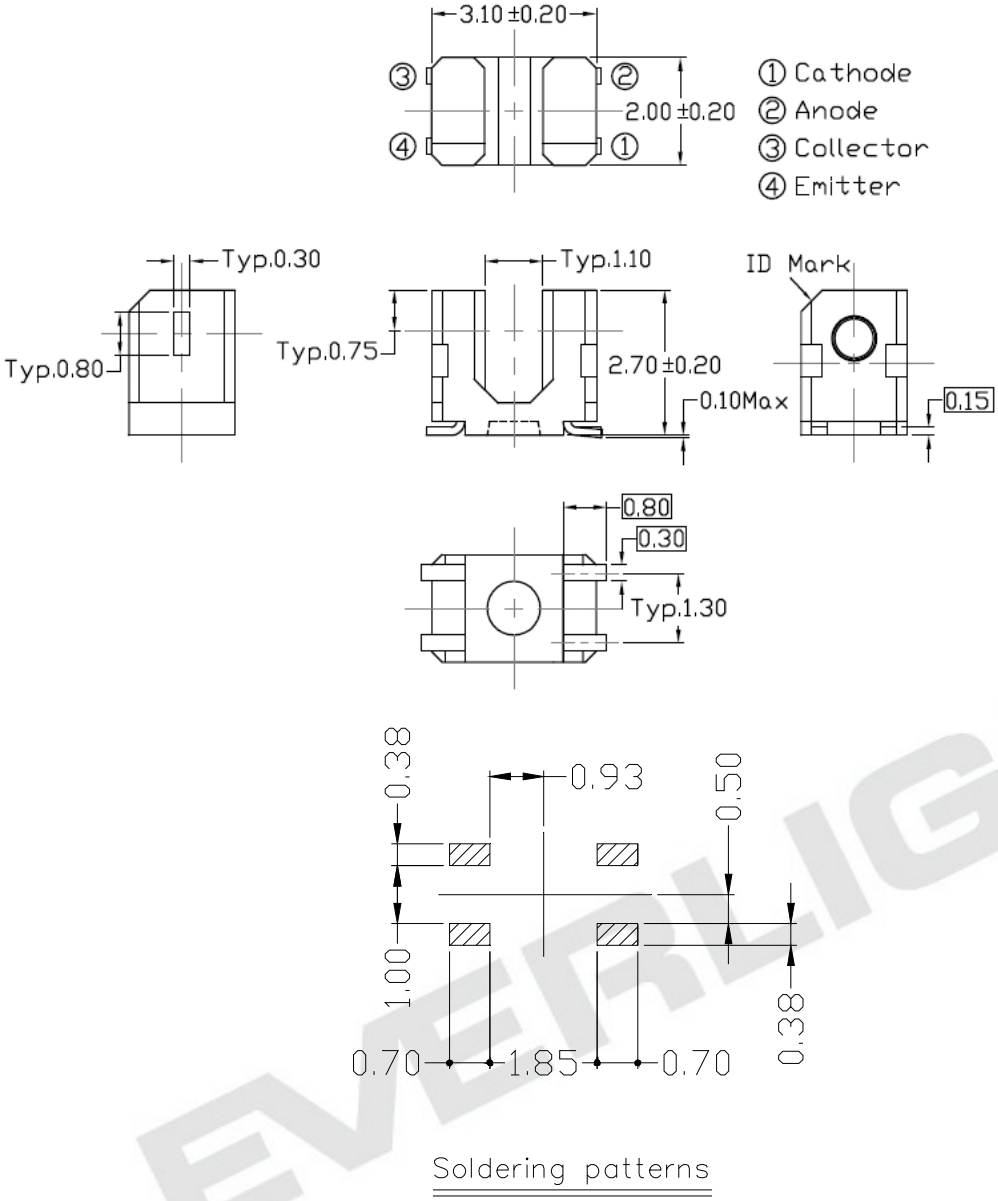
Applications

- Printer
- Digital Camera
- Optical switch

Device Selection Guide

Device No.	Chip Material
IR	AlGaAs
PT	Silicon

Package Dimensions



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

Absolute Maximum Ratings (Ta=25℃)

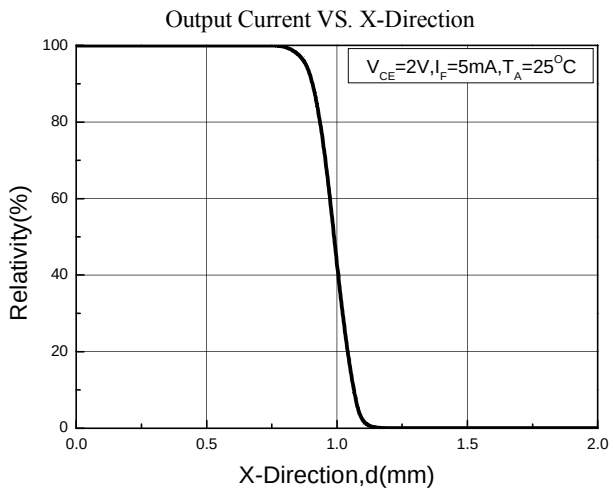
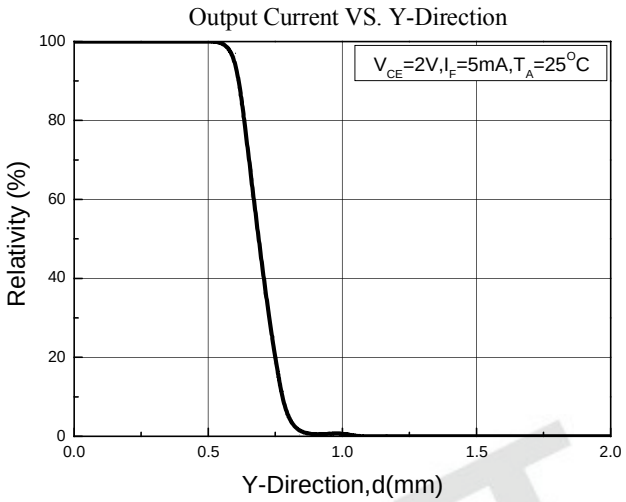
Parameter		Symbol	Rating	Unit
Input	Power Dissipation at(or below) 25℃ Free Air Temperature	Pd	75	mW
	Reverse Voltage	V_R	5	V
	Forward Current	I_F	50	mA
	Peak Forward Current *1	I_{FP}	1	A
Output	Collector Power Dissipation	P_C	75	mW
	Collector Current	I_C	20	mA
	Collector-Emitter Voltage	B V_{CEO}	35	V
	Emitter-Collector Voltage	B V_{ECO}	6	V
Operating Temperature		Topr	-40~+85	℃
Storage Temperature		Tstg	-40~+100	℃
Lead Soldering Temperature*2		Tsol	260	℃

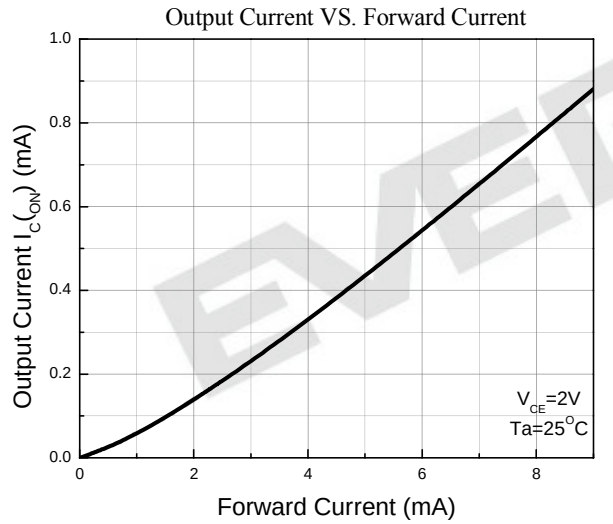
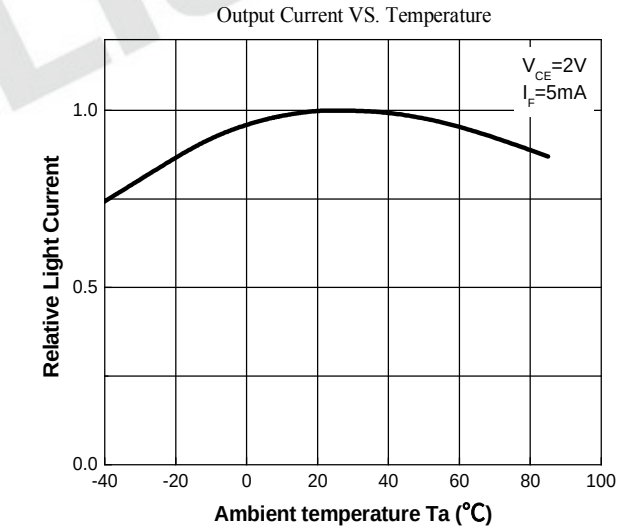
＊1. Pulse width tw =100μs , Period T=10ms　　＊2 t ≦5sec.

Electro-Optical Characteristics (Ta=25℃)

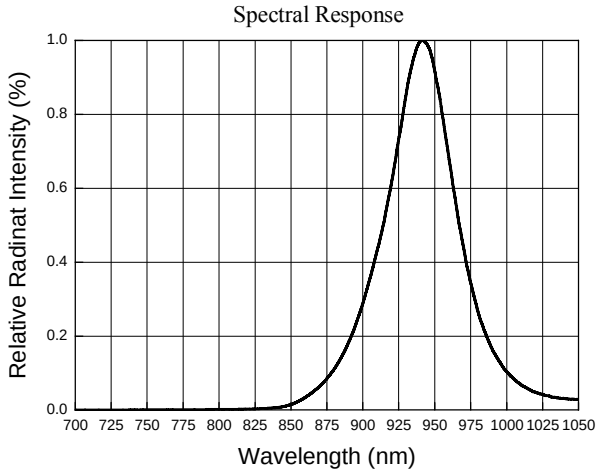
Parameter		Symbol	Min.	Typ.	Max.	Unit	Condition
Input	Forward Voltage	V_F	---	1.2	1.4	V	I_F=20mA
	Reverse Current	I_R	---	---	10	μA	V_R=6V
	Peak Wavelength	λ_P	---	940	---	nm	I_F=20mA
Output	Dark Current	I_{CEO}	---	---	0.1	μA	V_{CE}=20V
	C-E Saturation voltage	$V_{CE(sat)}$	---	---	0.4	V	I_c=0.05mA I_F=10mA
Transfer Characteristics	Collector Current	$I_{C(ON)}$	150	---	1000	μA	V_{CE}=2V, I_F=5mA
	Rise time	t_r	---	9	---	μs	V_{CE}=5V I_C=1mA R_L=1KΩ
	Fall time	t_f	---	8	---	μs	

Typical Electrical/Optical/Characteristics Curves

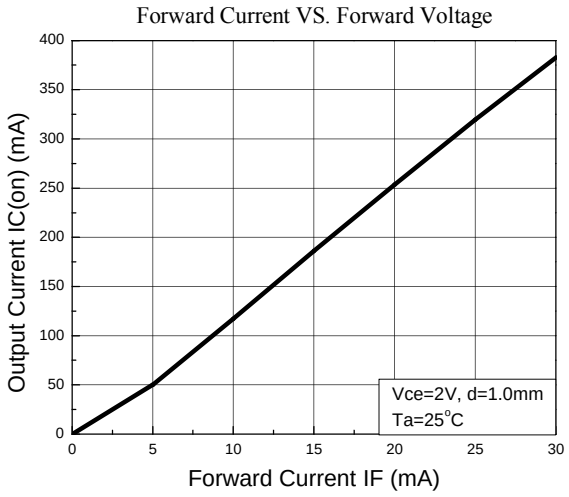
Output Current vs. X-Direction	Output Current vs. Y-Direction
	

Output Current vs. Forward Current	Output Current vs. Temperature
	

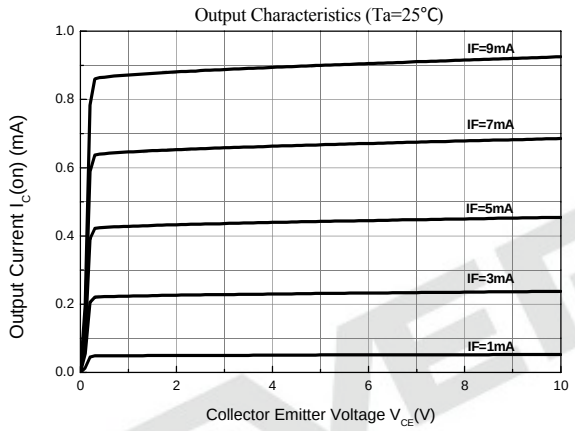
Spectral Response



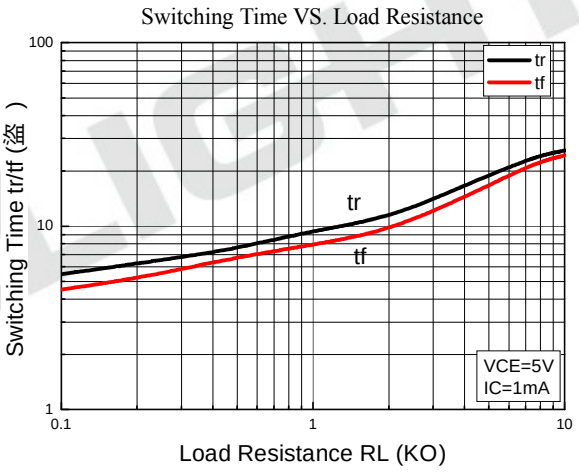
Forward Current vs. Forward Voltage



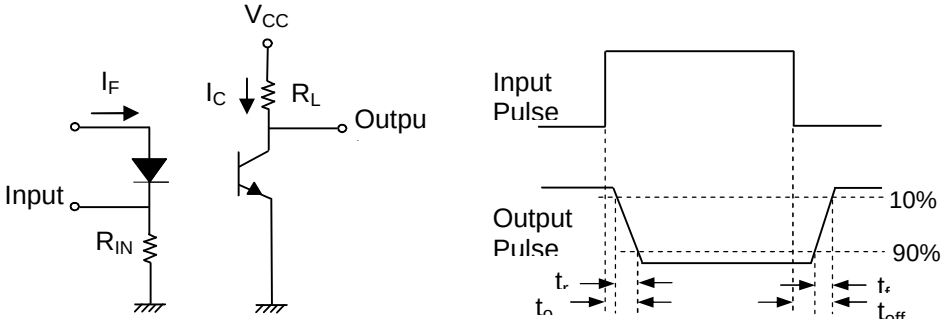
Collector Emitter Voltage vs. Output Current



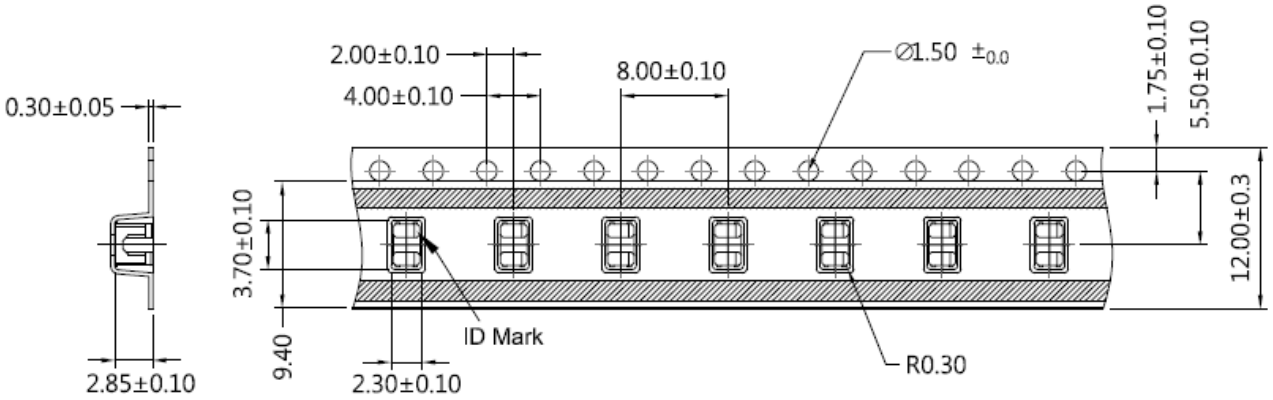
Switching Time vs. Load Resistance



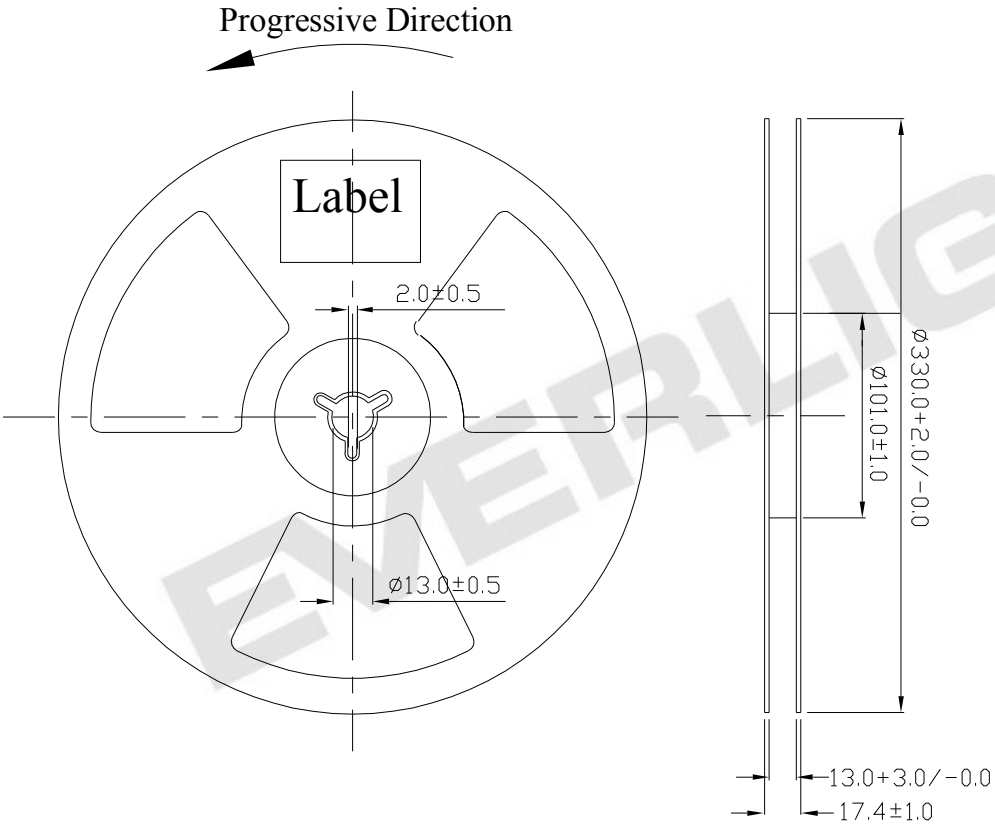
Measuring Circuit For Response Time



Taping Dimension



Reel Dimensions

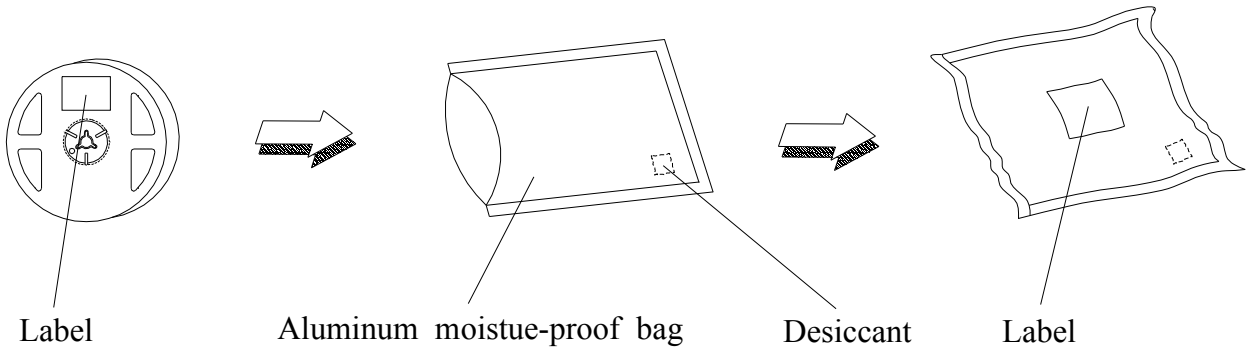


Note: The tolerances unless mentioned is ±1.0mm ,Unit = mm

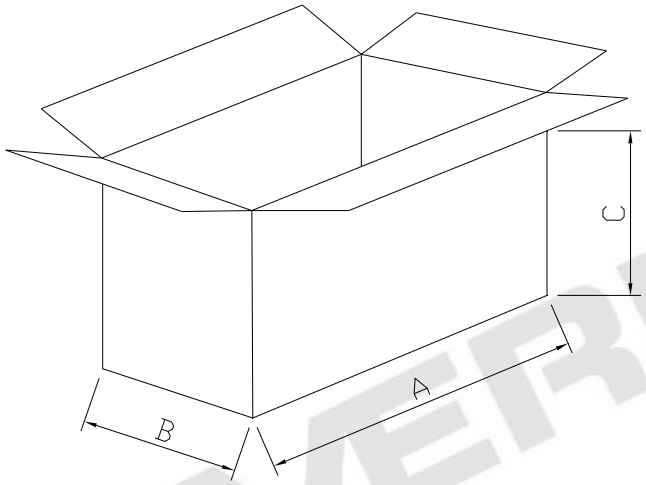
Packing Quantity Specification

1. 3000pcs / 1 Reel
2.13 Reels (39Kpcs) / 1 Carton

Packing Procedure



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



Precautions For Use

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.

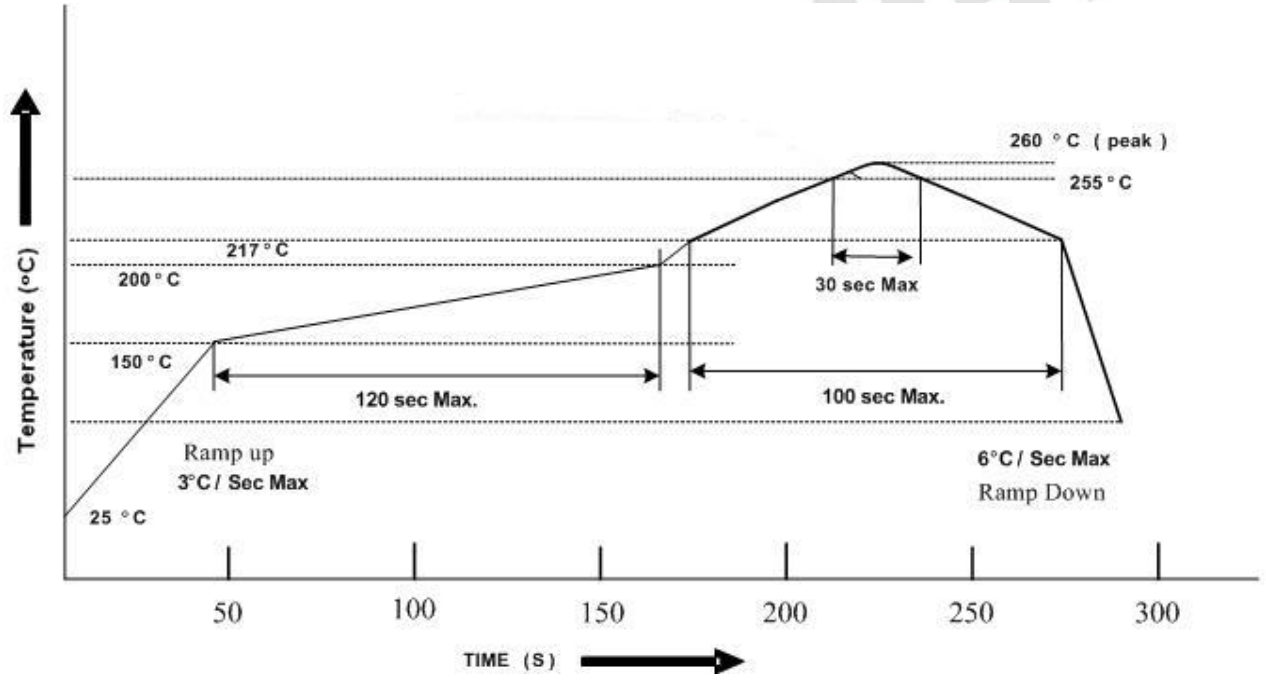
1.5 The device should be used within 168 hours (7 days) after opening the package.

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.

2. Soldering Condition

2.1 Pb-free solder temperature profile



2.2 Reflow soldering should not be done more than two times.
2.3 When soldering, do not put stress on the device during heating.
2.4 After soldering, do not warp the circuit board.

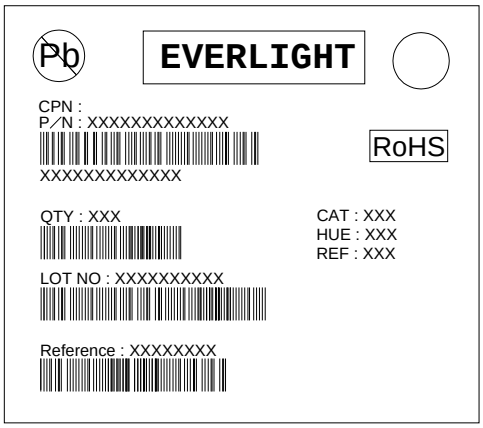
3. Soldering Iron

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.

4. Repairing

Repair should not be done after the device 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 device 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

Notes

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
2. 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 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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