SL-T2016IRPTB009-L75

DATA SHEET

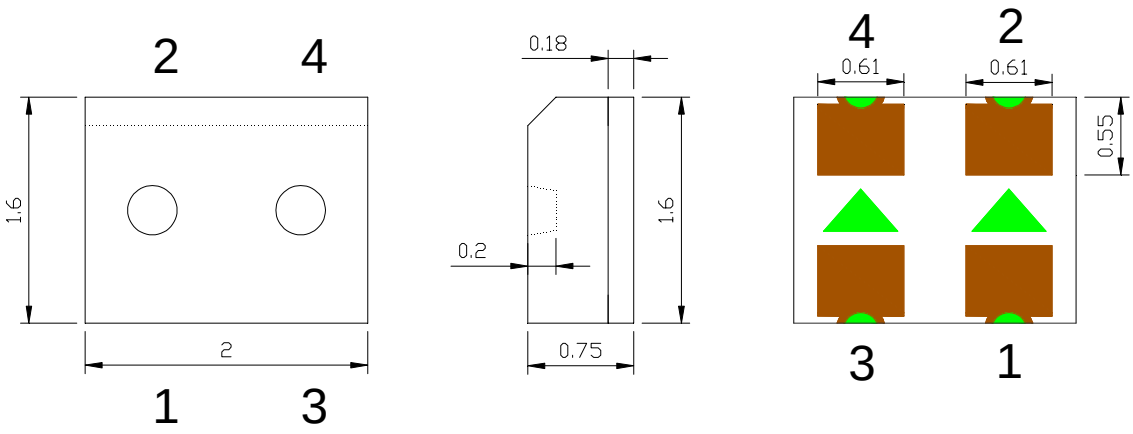
SPEC. NO. : SZ21073101
DATE : 2021/07/31
REV. : A/1

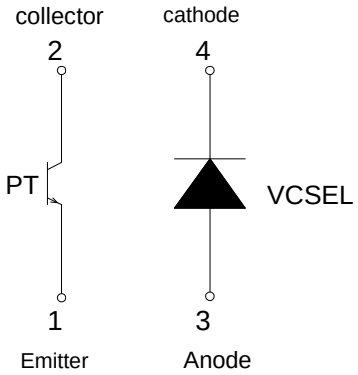
Approved By: Checked By: Prepared By:

Features

- Pb free product—RoHS compliant
- Low power consumption, High efficiency
- Reliable and rugged
- Long life – solid state reliability
- Qualified according to JEDEC Moisture sensitivity Level 4
- Operating range within > 20 % relative collector current: 0.2 mm to 5.0 mm

Package Dimension





Part NO.	Lens Color	Chip Material
SL-T2016IRPTB009-L75	Black	AlGaAS Silicon

Notes:

1. All dimensions are in millimeters.
2. Tolerance is ±0.10mm unless otherwise noted
3. Specifications are subject to change without notice.

Absolute Maximum Ratings at Ta=25℃

Parameter	Rating	Unit
Input (Emitter)		
Pulse Forward Current*3	20	mA
Continuous Forward Current	8.5	mA
Reverse Voltage	2	V
Output (Detector)		
Collector Emitter Breakdown Voltage	85	V
Emitter Collector Breakdown Voltage	8.2	V
Collector Current	1.7	mA
Coupled		
Total Power Dissipation	25	mW
Operating Temperature	-25℃ to + 85℃	
Storage Temperature	-25℃ to + 85℃	
Reflow Soldering Temperature	260℃ MAX. for 10 Seconds MAX.	

Notes:

1. Storage:

(1). Storage requirements before vacuum bag opened: Temperature<30℃, Humidity<65%RH;

(2). Check air leakage and vacuum bag damage before opened. If there is any issue found, check the humidity indicator card immediately after bag opened:

a. If color changes on “10% circle” of the humidity indicator card only and not the circles of 20% and above, components can be used without additional handling;

b. If color changes on both 10% and 20% circles but not the circles of 30% and above, components must be dehumidified according to the conditions of bullet (5);

c. If color changes on 10%, 20%, and 30% circle or above, the product should be returned to the supplier for high temperature dehumidification;

(3). After bag opened, manual soldering or reflow process must follow the following requirements:

a. Complete soldering / reflow within 72 hours;

b. Requirements of working environment: Temperature<30℃, Humidity<60%RH;

(4). If the working condition is outside (3)a requirement, the components must be dehumidified according to the conditions of bullet (5);

(5). Low temperature dehumidification: temperature 60±5℃, at least 24 hours;

(6). Shelf life: 180 days. If it’s over 180 days from the production date on the package label, the components must be dehumidified according to the condition of bullet (5). If customer is unable to dehumidify, return components to

LIGHT for dehumidification.

2. **Caution in ESD:**

Static Electricity and surge damages the LED. It is recommend to use a wrist band or anti-electrostatic glove when handling the LED. All devices, equipment and machinery must be properly grounded.

3. **Pulse Forward Current:**

Pulse Width≤0.1ms and duty≤10%.

Typical Product Characteristics (Ta=25℃)-Emitter

Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test condition
Forward Voltage	V_F	-	2.0	2.5	V	I_F=7mA
Reverse Current	I_R	-	-	10	μA	V_R=2V
Center Wavelength	λ_P	-	940	-	nm	I_F=7mA
Spectrum Width of Half Value	D_P	-	5	-	nm	I_F=7mA

Note: Tolerance of Forward Voltage: ±0.1V.

Typical Product Characteristics (Ta=25℃)-Detector

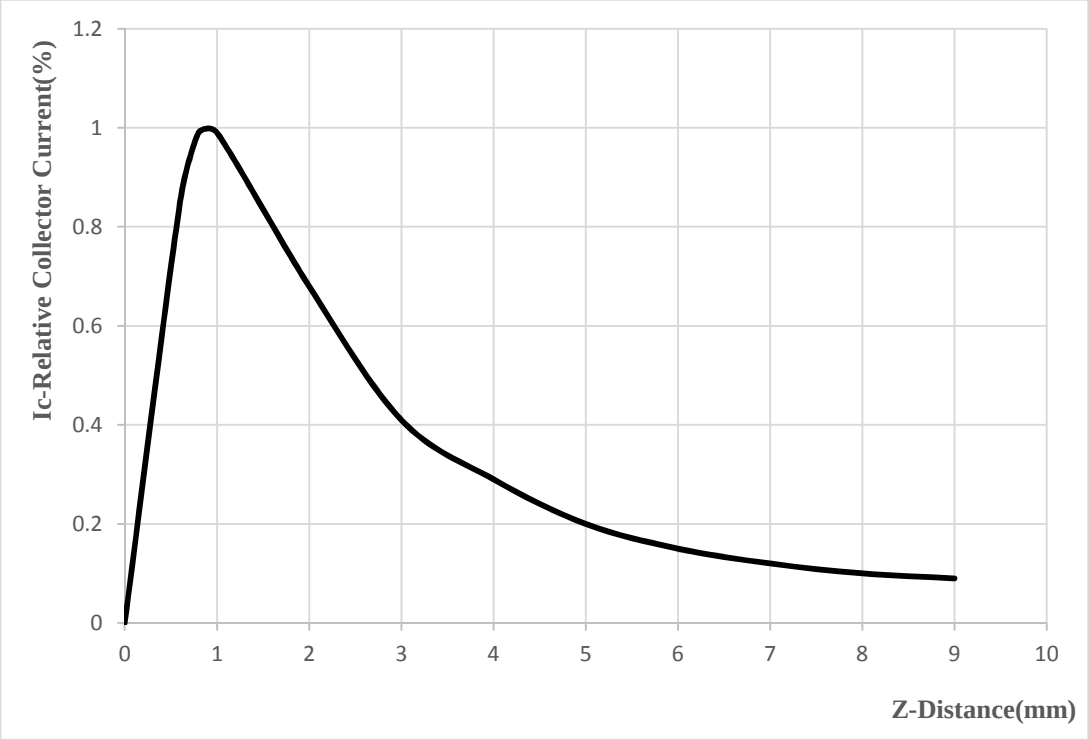
Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test condition
Collector Emitter Breakdown Voltage	BV_{CEO}	85	-	-	V	I_C= 100uA L* = 0
Emitter Collector Breakdown Voltage	BV_{ECO}	8.2	-	-	V	I_E= 10uA L* =0
Collector Emitter Dark Current	I_{CEO}	-	2	30	nA	V_{CE}=20V, L* =0 Fig. 2

Note: L* = 0 (zero light condition)

Typical Product Characteristics (Ta=25℃)-Coupled

Characteristics	Symbol	Min.	Typ.	Max.	Unit	Test condition
Collector Current	I_C	-	1.70	-	mA	Refer to Fig. 1
Rise Time	T_r	-	15	-	μs	V_{CE}=5V RL=100Ω
Fall Time	T_f	-	15	-	μs	V_{CE}=5V RL=100Ω

Distance Range For Relative Collector Current

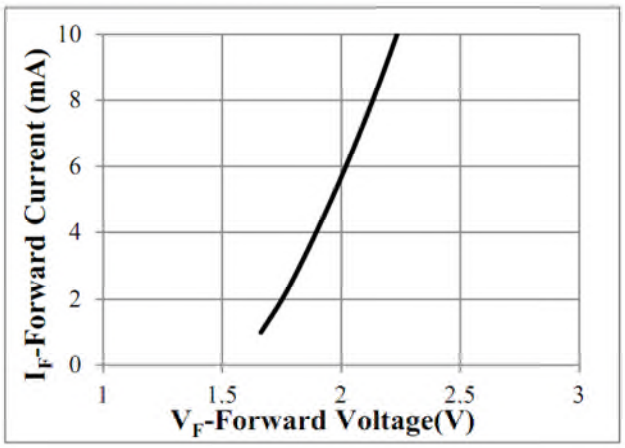


Reflection Index of Kodak Gray Card	Distance for Maximum Collector Current(mm)	Distance Range for Relative Ic>20%(mm)	Typical Collector Current under Test(mm)(1)	Daylight Blocking Filter Integrated
18%	1.0	0.2 to 5.0	1.7	Yes

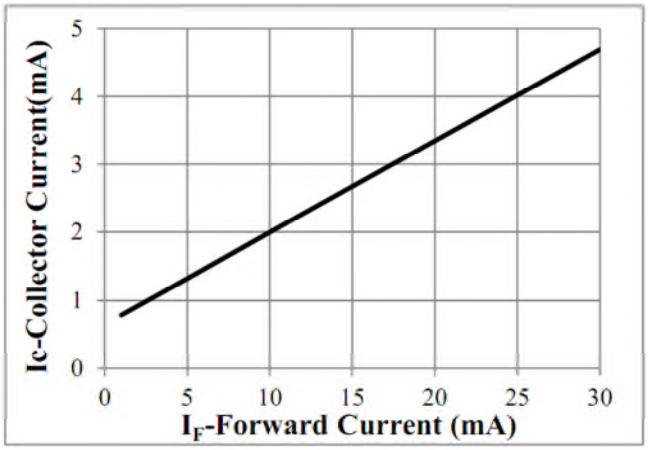
Note:(1) I_F = 9 mA, V_{CE}= 5V, Pulse width 0.1ms, 5% Duty Cycle

Optical Characteristics (Ta=25℃)

1.Electrical Characteristics

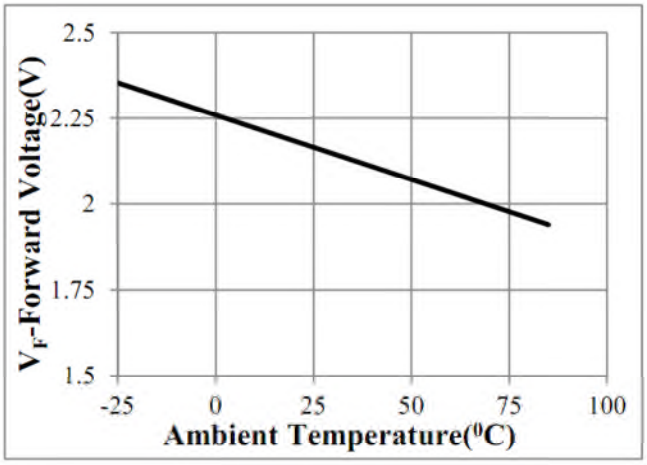


2.Collector Current vs. Forward Current

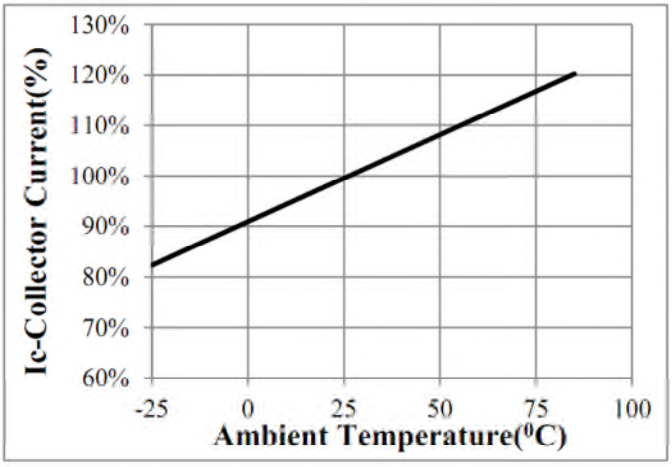


Note: V_{CE}=5V, D=1mm, Pulse width 0.1ms
5% Duty Cycle

3.Forward Voltage vs. Ambient Temperature



4.Collector Current vs. Ambient Temperature



Note: V_{CE}=5V, D=1mm

Output Current Test Condition (Ta=25℃)

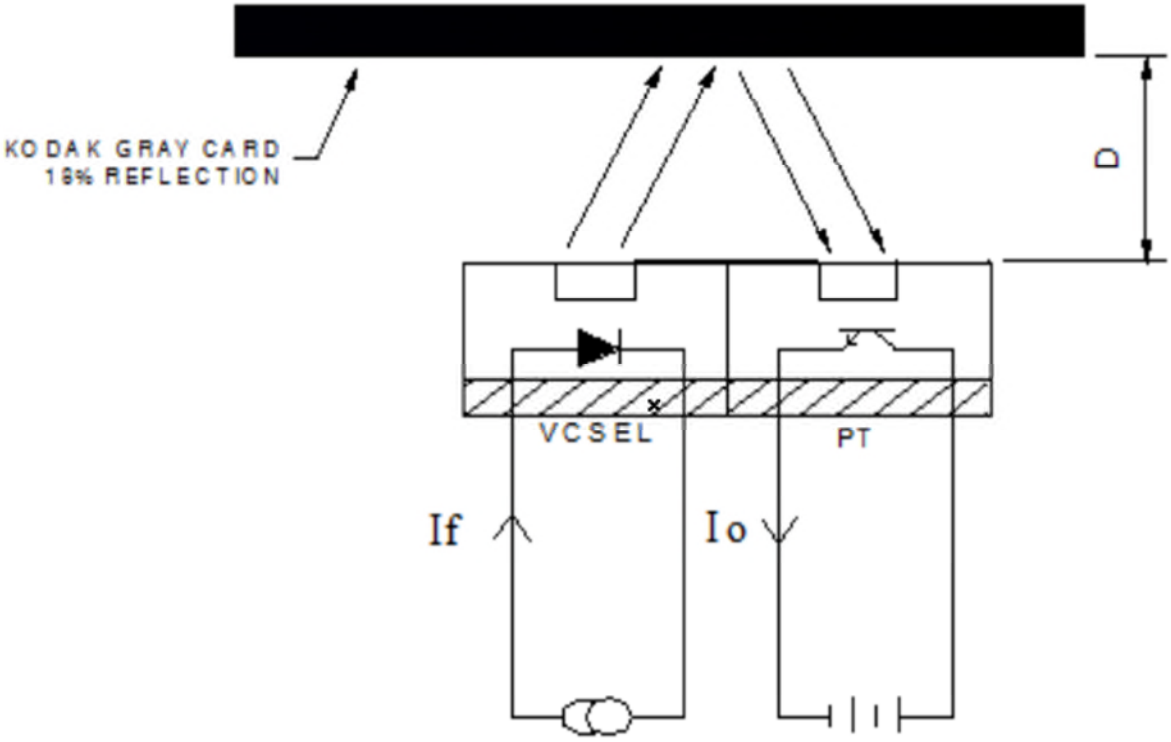


Fig.1 : Test Condition: D = 1mm 18% Gray Card, I_F=7 mA, V_{CE} = 5V, Pulse width 0.1ms, 5% Duty Cycle

Dark Current Test Condition (Ta=25℃)

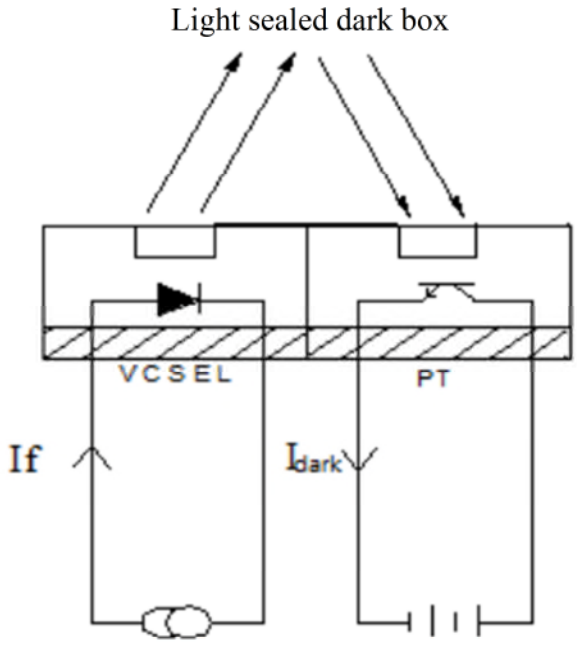
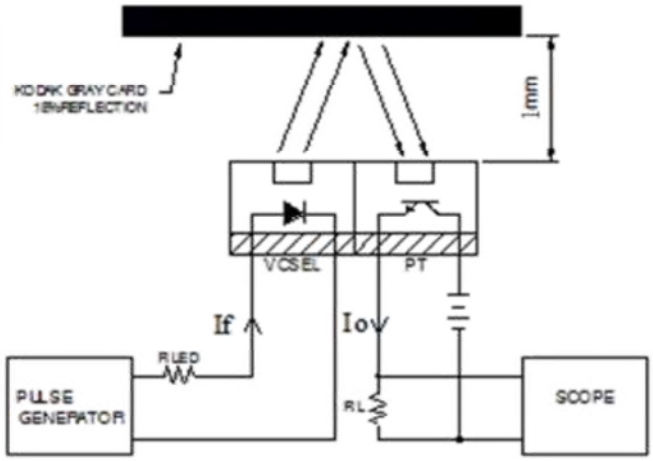
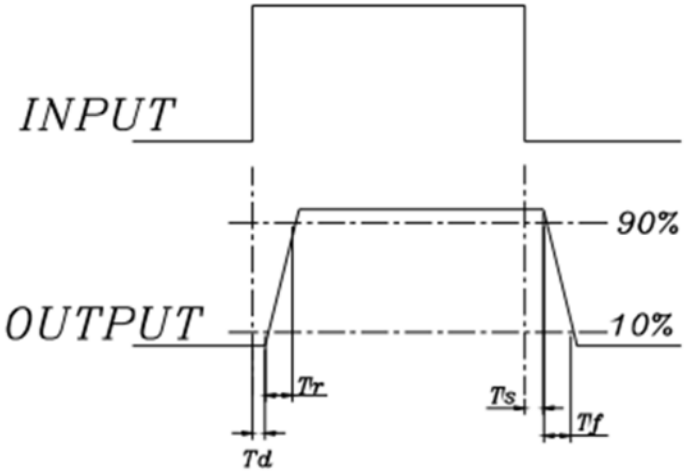


Fig. 2: Test Condition: ILED=9 mA, V_{CE} = 5V, Pulse width 0.1ms, 5% Duty Cycle

Response Time Test Condition (Ta=25℃)





Label Explanation

LIGHT Universal Label
(Reel Label)

LIGHT 深圳莱特光电股份有限公司 RoHS
Light Electronics CO., LTD.

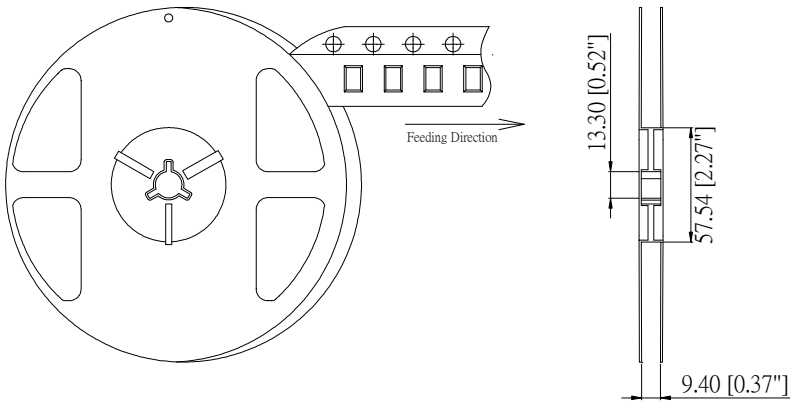
产品型号
MODEL NAME:
数 量
QUANTITY:
等级
BIN:
包装日期
PACKING DATE:
备注
REMARKS:
LOT NO.:

Customer Defined Label
(Aluminum Moisture Proof Bag Label)

LIGHT 深圳莱特光电股份有限公司 RoHS
Light Electronics CO., LTD.

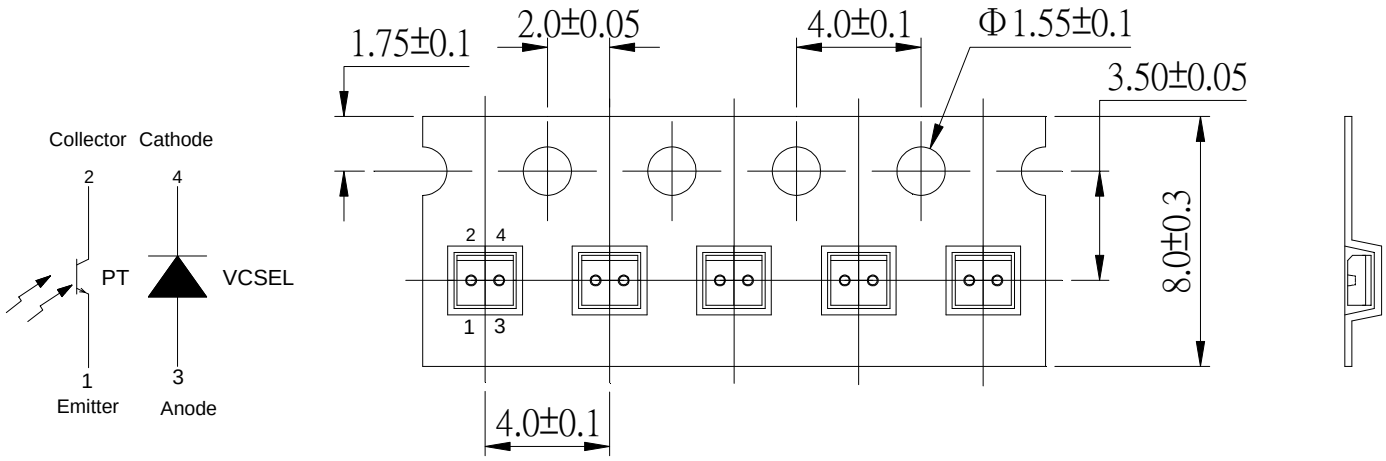
产品型号
MODEL NAME:
数 量
QUANTITY:
等级
BIN:
包装日期
PACKING DATE:
客户料号
CUSTOMER P/N:
LOT NO.:

Reel Dimensions

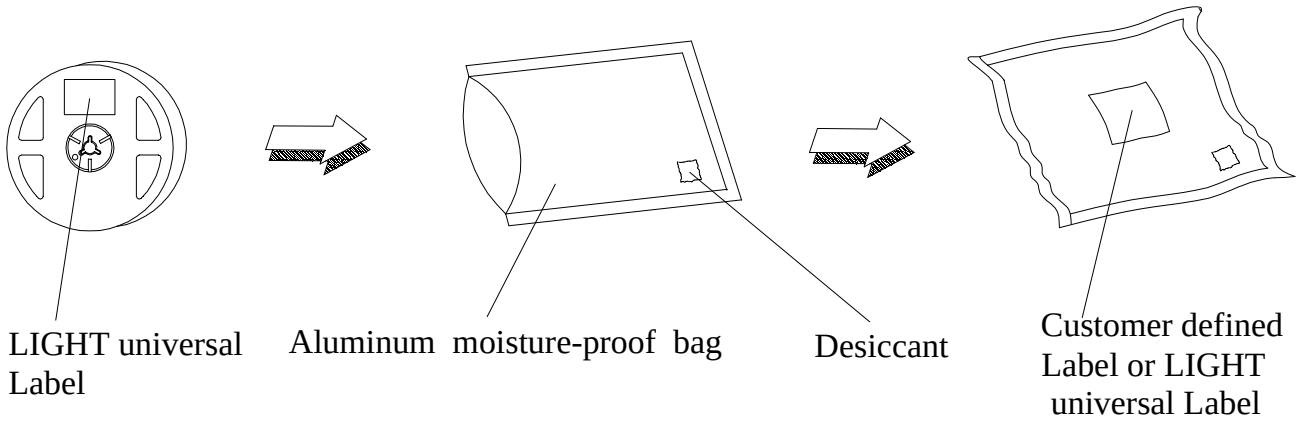


Note: Tolerance unless mentioned is ±0.2mm; Unit = mm

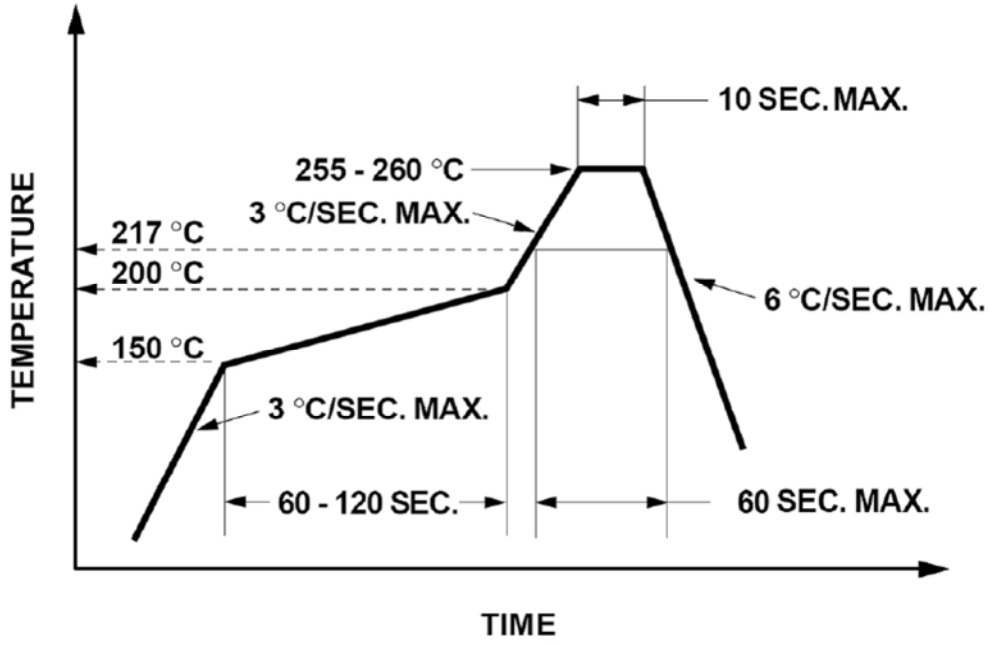
Carrier Tape Specifications(Loaded Quantity: 3000pcs/reel)



Moisture Resistant Packaging



Suggest IR Reflow Condition For Lead Free



1. Reflow soldering should not be done more than two times.
2. When soldering, do not put stress on the LEDs during heating.

Soldering iron

1. When hand soldering, the temperature of the iron must less than 300℃ for 3 seconds.
2. The hand solder should be done only once.

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 LEDs will or will not be damaged by repairing.