LIGITEK ELECTRONICS CO.,LTD.
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LED SMD

Lead-Free Parts

PRELIMINARY
This is just a preliminary design
to let you evaluate the concept

LG-2020PD-CT-LS

DATA SHEET

DOC. NO : IMQW0905-LG-2020PD-CT-LS

REV. : A

DATE : 02 - Oct. - 2019

Features:

1. Fast response time.
2. High photo sensitivity.
3. Small junction capacitance.

Descriptions:

1. The LG-2020 is a photodiode in miniature SMD package which is molded in water clear plastic with flat top view lens. the device is spectrally matched to emitting diode.

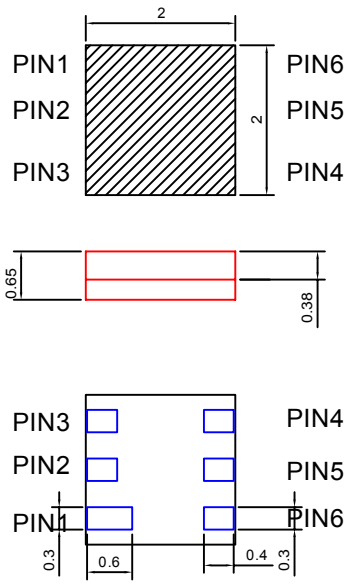
Applications:

1. Miniature switch
2. Counters and sorter
3. Position sensor
4. Infrared applied system.

Device Selection Guide:

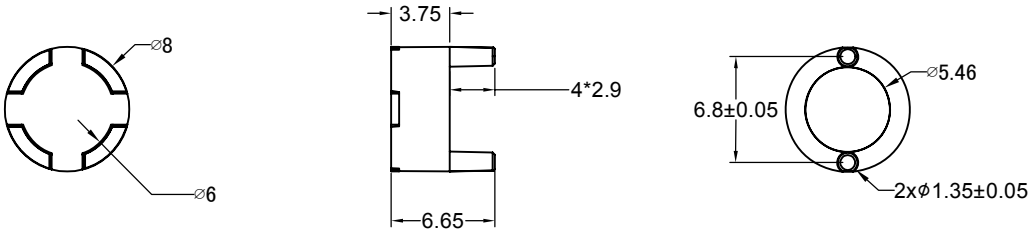
PART NO	MATERIAL	Lens Color	Item
LG-2020PD-CT	Silicon	Water Clear	Photo Diode
LG-PC0804	PC	Water Clear	Holder

Component Dimensions



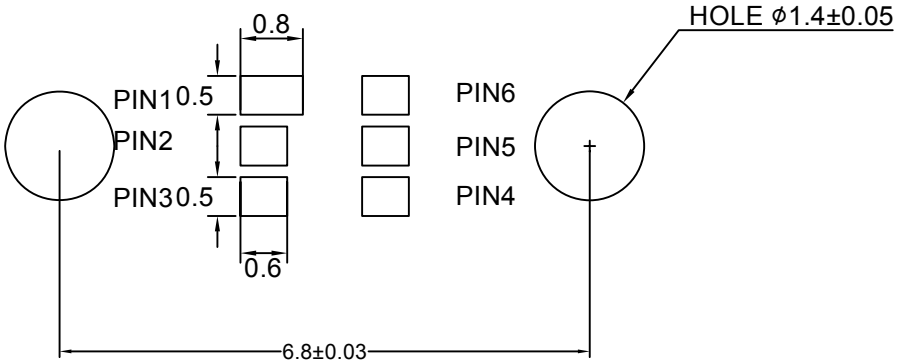
PIN 1 Collector
PIN 2 NC
PIN 3 NC
PIN 4 Emitter
PIN 5 NC
PIN 6 NC

Holder Dimensions



Note : 1.All dimension are in millimeter tolerance is ±0.1mm unless otherwise noted.
2.Specifications are subject to change without notice.

Recommended Soldering Pad Dimensions



Note : The tolerances unless mentioned is ±0.1mm,Angle±0.5. Unit=mm.

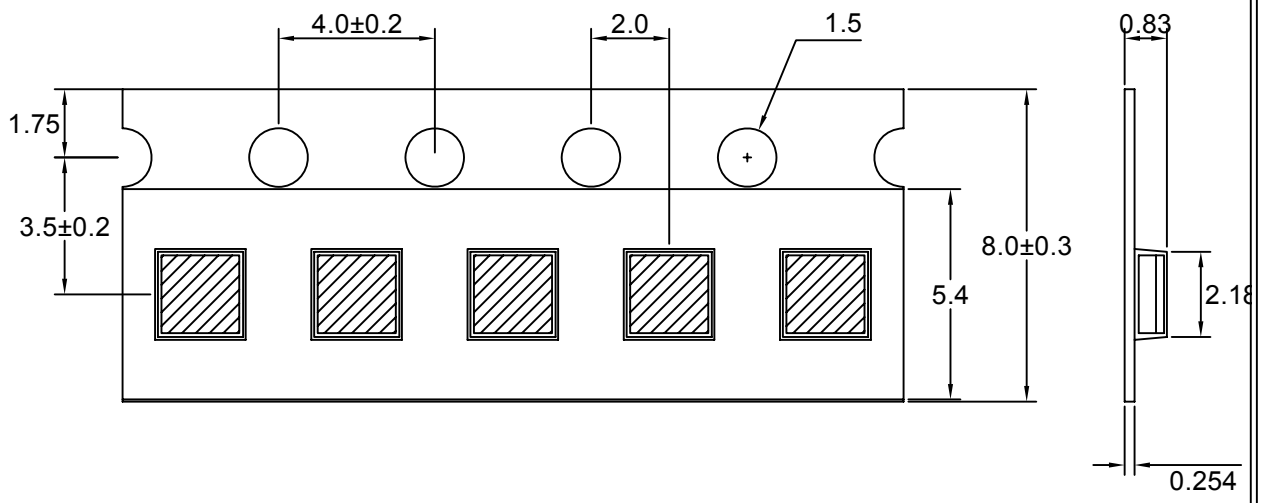
Absolute Maximum Ratings at Ta=25℃

Parameter	Symbol	Ratings	UNIT
Reverse Voltage	VR	60	V
Power Dissipation	PD	215	mW
Junction Temperature Range	Tj	100	°C
Operating Temperautre Range	Topr	-40 ~ + 85	°C
Storage Temperature Rang	Tstg	-40 ~ + 85	°C
Soldering Tempearuter Range	Tsd	260	°C

Typical Electrical & Optical Characteristics (Ta=25℃)

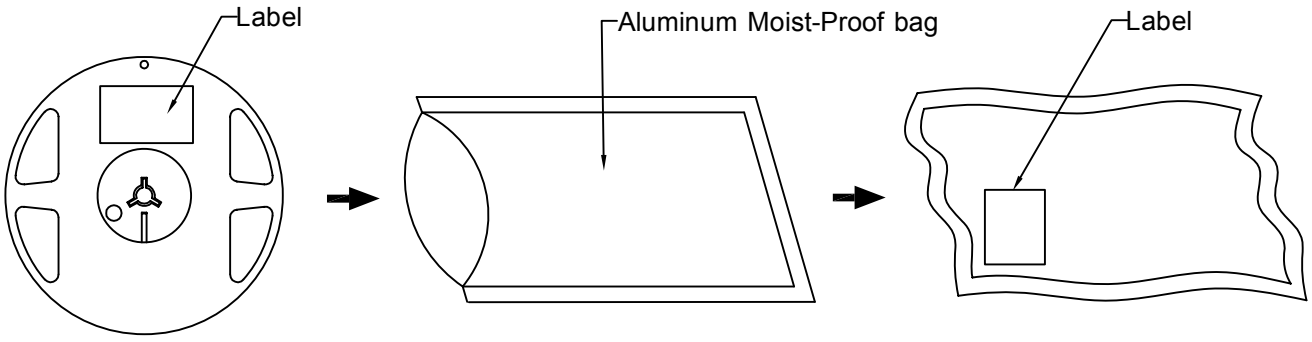
Characteristic	Symbol	Condition	Min	Typ	Max	Unit
Forward Voltage	VF	IF=10mA, E=0	0.5	----	1.3	V
Reverse Breakdown Voltage	VBR	IR=100μA, H=0	35	----	----	V
Reverse Dark Current	ID	VR=10V, E=0	----	2	10	nA
Light Current	IL	VR=5V, Has 1mw/cm²@940nm	----	3.4	----	μA
Peak Sensing Wavelengh	λp		700	940	1040	nm
Junction Capacitance	CJ	VR=3V, F=1 MHz, E=0	----	4.9	----	pF

Component Carrier Type Dimensions



Note : The tolerances unless mentioned is ±0.1mm,Angle± 0.5. Unit=mm.

• Packing Specifications



Part No.	Description	Quantity/Reel
LG-2020PD-CT-LS	8.0mm tape,7"reel	3000 devices

Component Label Explanation

LIGITEK ELECTRONICS CO., LTD.

PART : LG-2020PD-CT-LS

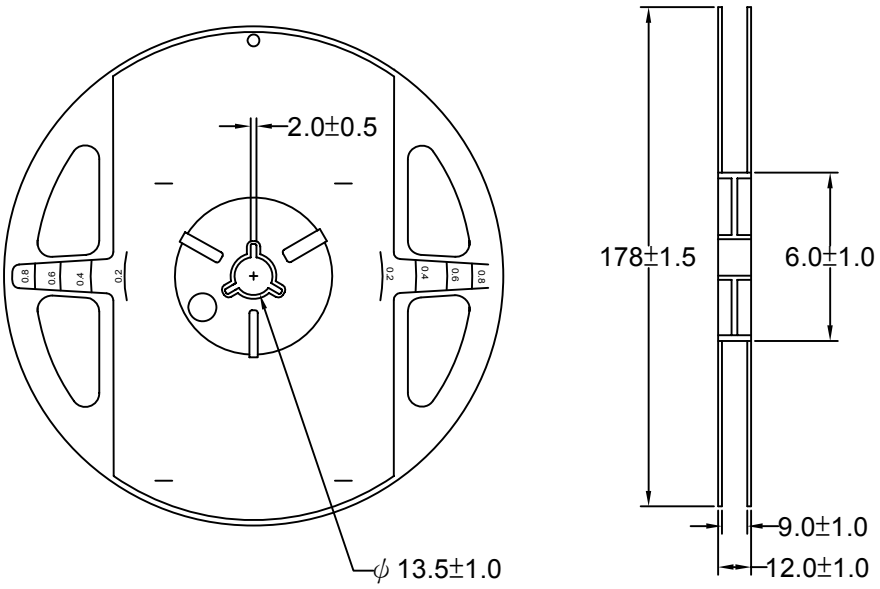
LOT : GS11460168

QTY(PCS): 3000

BIN/HUE : I1

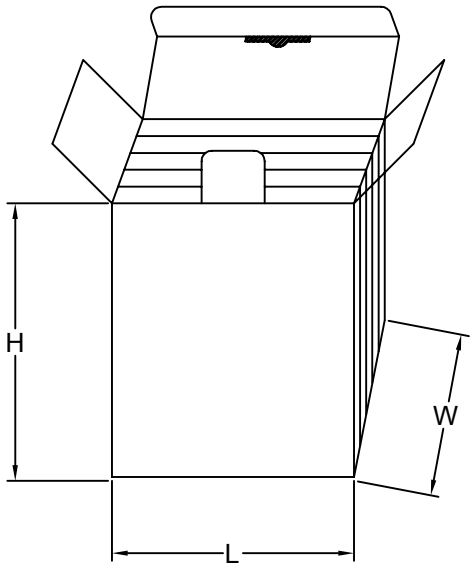
BIN : Collector Current Classification

Reel Dimensions

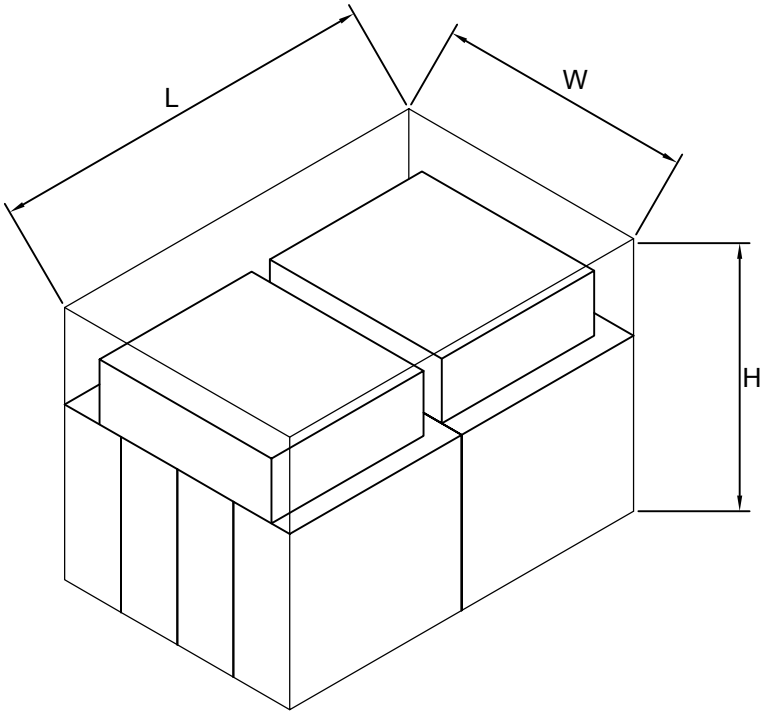


Box Explanation

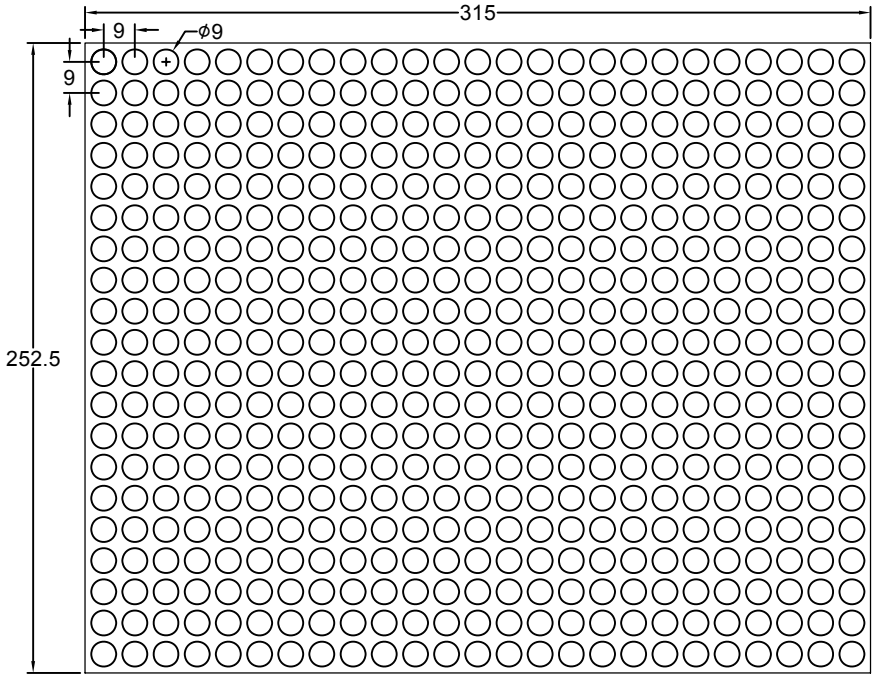
1. 5 BAG / INNER BOX
2. INNER BOX SIZE : L X W X H 23cm X 8.5cm x 26cm



3. 10 INNER BOXES / CARTON
4. CARTON SIZE : L X W X H 58cm X 34cm x 35cm

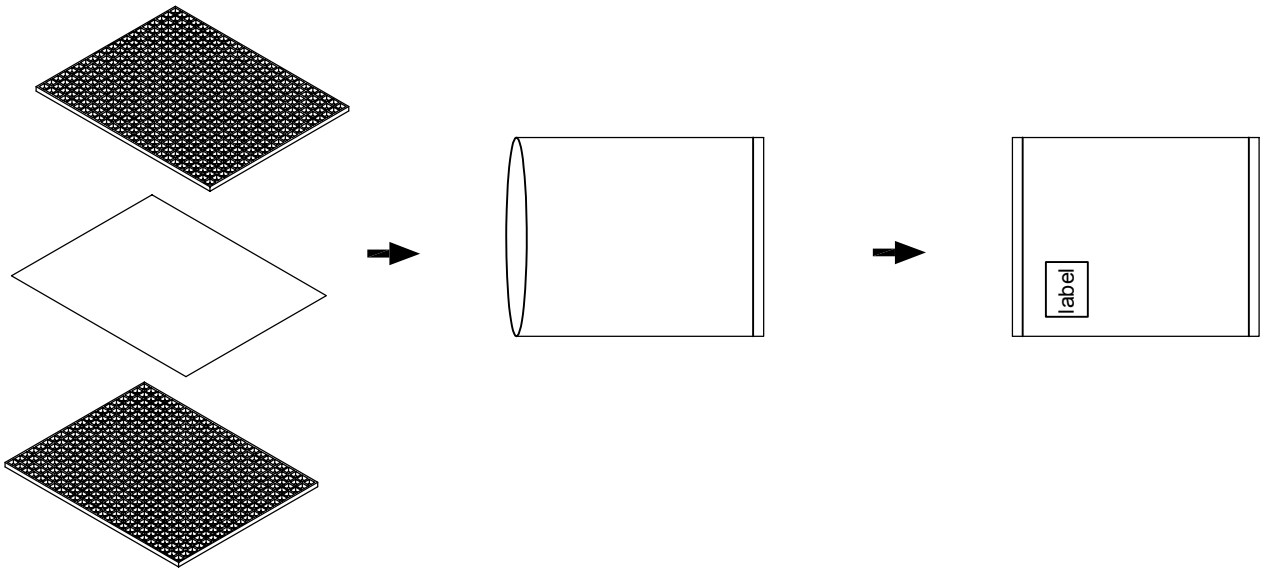


LENS Carrier Type Dimensions



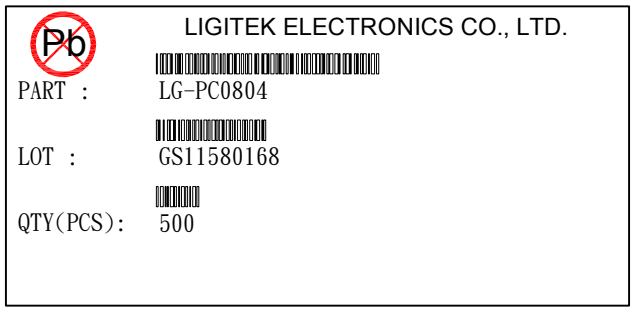
Note : The tolerances unless mentioned is ±0.1mm,Angle± 0.5. Unit=mm.

LENS Packing Specifications

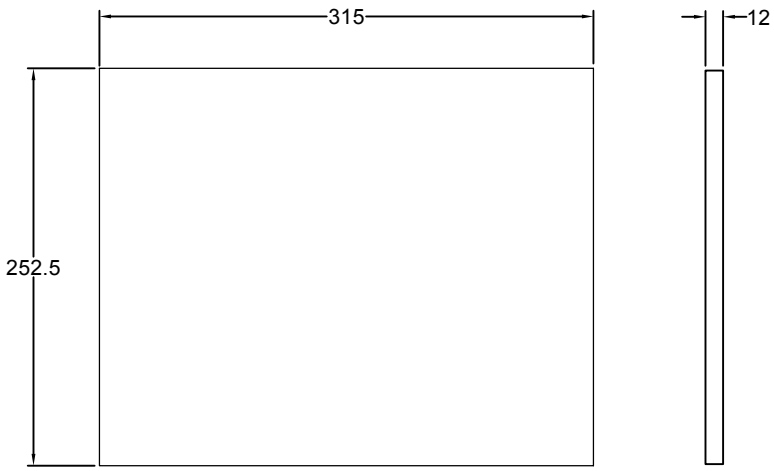


Part No.	Description	Quantity/Tray
LG-PC0804	315*252.5*12	500 PCS

LENS Label Explanation

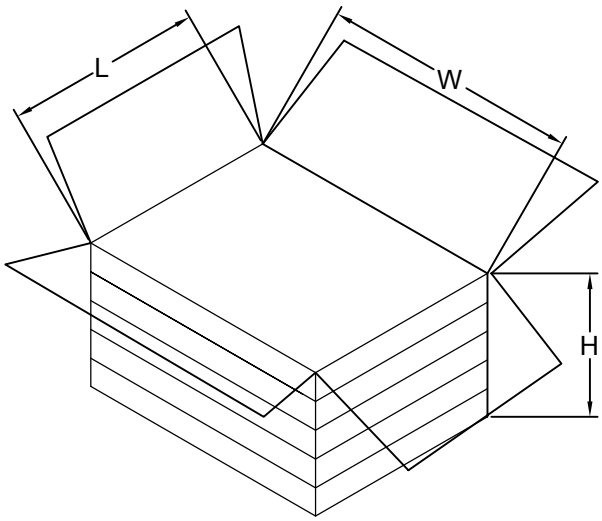


LENS Tray Dimensions



LENS Box Explanation

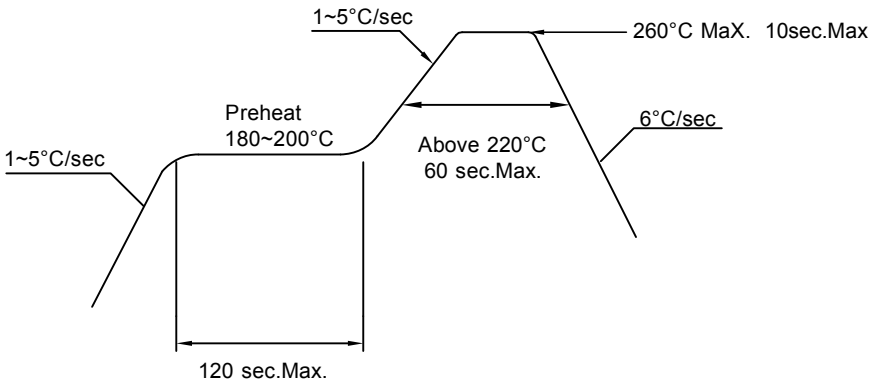
1. 5 BAGS / CARTON
2. CARTON SIZE : L X W X H 34cm X 27cm x 21cm



Recommended Soldering Conditions

1. Hand Solder
   Basic spec is ≦ 280℃ 3 sec one time only.

2. PB-Free Reflow Solder



Note:
1.Reflow soldering should not be done more than two times.
2.When soldering,do not put stress on the LEDs during heating.
3.After soldering,do not warp the circuit board.

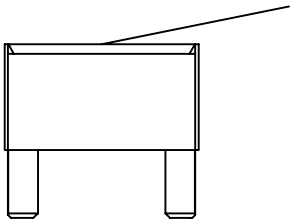
Precautions For Use:

Storage time:

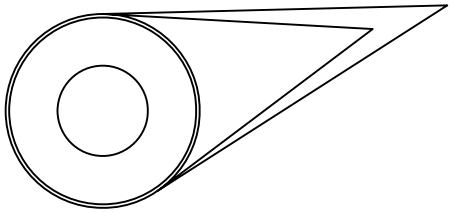
1. Calculated shelf life before opening is 18 months at < 30°C and < 90% relative humidity (RH)
2. After bag is opened, devices which will be subjected to reflow soldering or other high temperature processes must be
   a) Assemblied within one years in an environment of ≦ 30°C / 60% RH, or
   b) Stored at ambient of 10% RH or less
3. Devices are required baking before assembly if:
   a) Humidity Indicator Card reads >10% (for level 2a -5a)
      or >60% (for level 2) at ambient temperature 23±5°C
   b) 2.a) or 2.b) doesn't meet
4. If baking is required, devices should be baked for >72 hours at 60±5°C/ 5% RH.Performing baking only once, and using the baked devices within 72 hours.

MSL LEVEL 2

don't touch lens with the tweezers



Wrong(x)



Correct(o)

Component Cleaning:

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED.

Lens cleaning

in the case where a minimal level of dirt and dust particles can not be guaranteed, a suitable cleaning solution can be applied to the lens surface

- try a gentle swabbing using a lint-free swab
- if needed, the use of lint-free swab and isopropyl alcohol used gently removes dirt from the lens.
- don't use other solvents as they may directly react with the led assembly.
- don't use ultrasonic cleaning that the led will be damaged

ESD(Electrostatic Discharge):

Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrosatic glove is recommended when handing these LED. All devices, equipment and machinery must be properly grounded.

Reliability Test:

Classification	Test Item	Test Condition	Sample Size
Endurance Test	Operating Life Test	1.Ta=25°C 2.If=20mA 3.t=1000 hrs (-24hrs,+72hrs)	22
	High Temperature Storage Test	1.Ta=100°C±5°C 2.t=1000 hrs (-24hrs,+72hrs)	22
	Low Temperature Storage Test	1.Ta=-40°C±5°C 2.t=1000 hrs (-24hrs,+72hrs)	22
	High Temperature High Humidity Storage Test	1.Ta=85°C 2.RH=85% 3.t=1000hrs(-24hrs,+72hrs)	22
Environmental Test	Thermal Shock Test	1.Ta=100°C±5°C ~ -40°C±5°C 20min/ 10sec / 20min 2.total 100 cycles	22
	Temperature Cycling	1.100°C±5°C ~ -40°C±5°C 30mins / 5mins / 30mins 2.100 Cyeles	22
	IR Reflow	1.T=260°C Max. 10sec.Max. 2. 6 Min	22