LED SMD

Lead-Free Part

LG-008WK-WW-A01

DATA SHEET

DOC. NO : QW0905-LG-008WK-WW-A01

REV. : B

DATE : 25 - Nov. - 2016

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DCC

Features:

1. Side view white LED.

2. White SMT package.

3. Leadframe package with individual 2 pin.

4.Wide viewing angle.

5.Soldering methods:IR reflow soldering.

6.Feature of the device:more light due to higher optical efficiency;extremely wide viewing angle;ideal for backlighting and coupling in light guide.

7.Pb free

Applications:

1. LCD back light.

2. Mobile phones.

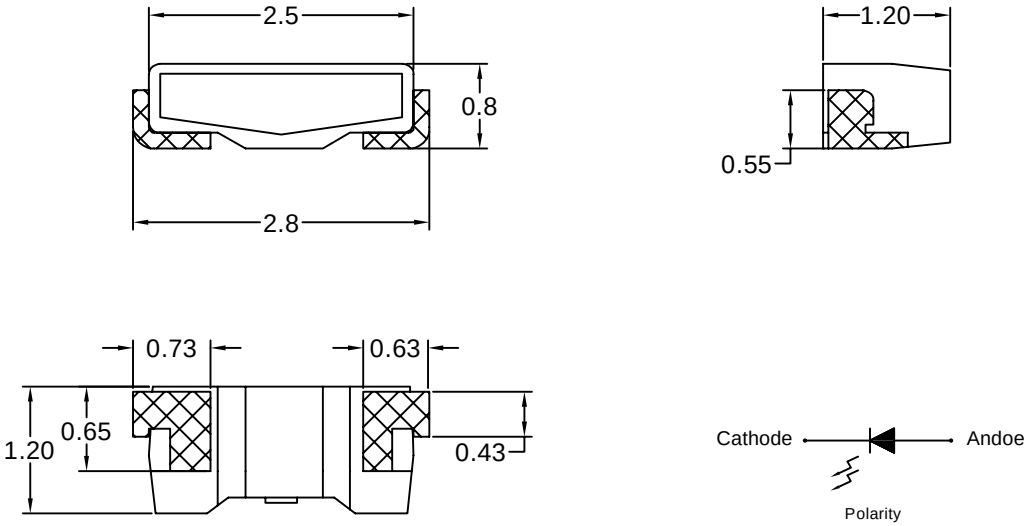
3. Indicators.

4. Switch lights.

Device Selection Guide:

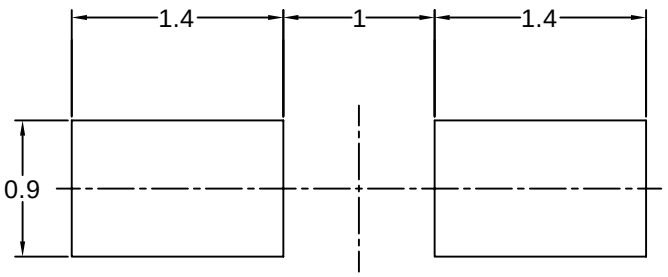
PART NO	MATERIAL	COLOR	
		Emitted	Lens
LG-008WK-WW-A01	InGaN	White	Yellow Diffused

Package 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
Forward Current	I_F	30	mA
Peak Forward Current Duty 1/10@10KHz	I_{FP}	100	mA
Power Dissipation	PD	108	mW
Reverse Current @5V	Ir	50	μA
Electrostatic Discharge	ESD	500	V
Operating Temperature	T_{opr}	- 40 ~ + 85	℃
Storage Temperature	Tstg	- 40 ~ + 100	℃

Typical Electrical & Optical Characteristics (Ta=25℃)

Items Min.	Symbol	Min.	Typ.	Max.	UNIT	CONDITION
Luminous Intensity	Iv	1600	1800	----	mcd	IF=20mA
Chromaticity Coordinates	X	0.506	----	0.557	----	IF=20mA
	Y	0.415	----	0.457	----	IF=20mA
Forward Voltage	V_F	2.8	----	3.6	V	IF=20mA
Viewing Angle	2θ 1/2	----	115	----	deg	IF=20mA

Note : 1.The forward voltage data did not including ±0.1V testing tolerance.
2.The luminous intensity data did not including ±15% testing tolerance.
3.The color coordinates measurememt allowance is ±0.01 testing tolerance.

Luminous Intensity Classification

BIN CODE	Iv(mcd) at20mA	
	Min.	Max.
W25W31	1600	1700
W32W33	1700	1800
W34W35	1800	1900
W36W37	1900	2000
X11X12	2000	2100
X13X14	2100	2200

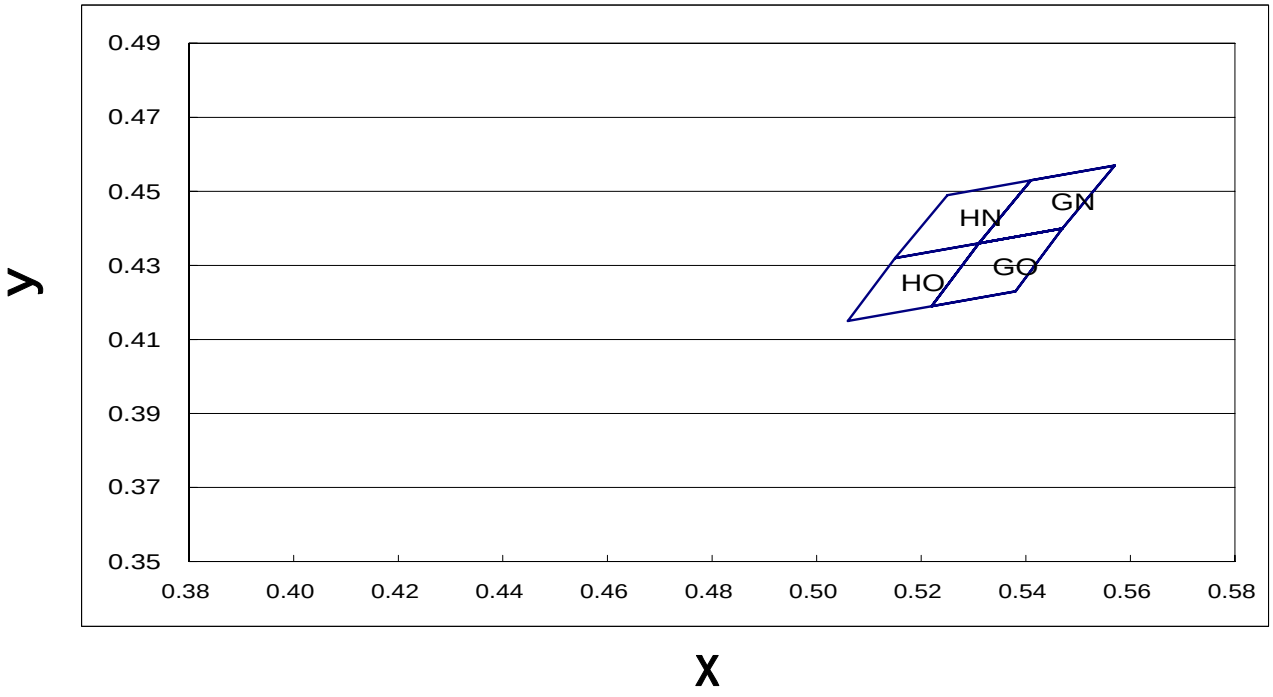
Forward Voltage Classification

BIN CODE	Vf(v) at 20mA	
	Min.	Max.
1	2.8	2.9
2	2.9	3.0
3	3.0	3.1
4	3.1	3.2
5	3.2	3.3
6	3.3	3.4
7	3.4	3.5
8	3.5	3.6

Chromaticity Coordinates Specifications For Bin Grading

Color Coordiante at20mA								
BIN CODE	1		2		3		4	
	X	Y	X	Y	X	Y	X	Y
GO	0.522	0.419	0.538	0.423	0.547	0.44	0.531	0.436
GN	0.531	0.436	0.547	0.44	0.557	0.457	0.541	0.453
HO	0.506	0.415	0.522	0.419	0.531	0.436	0.515	0.432
HN	0.515	0.432	0.531	0.436	0.541	0.453	0.525	0.449

CIE Chromaticity Diagram



Typical Electro-Optical Characteristics Curve

WK CHIP

Fig.1 Forward current vs. Forward Voltage

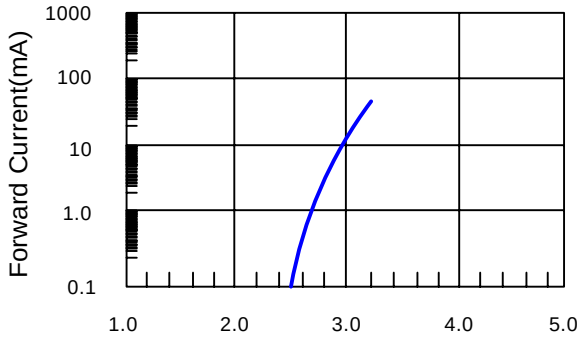


Fig.2 Relative Intensity vs. Forward Current

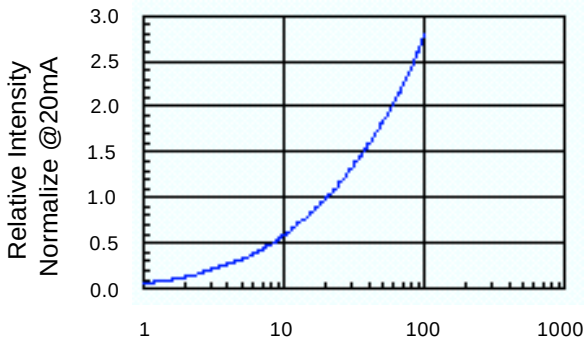


Fig.3 Forward Voltage vs. Temperature

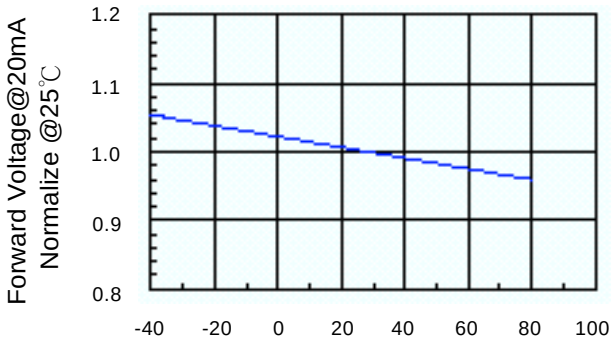


Fig.4 Relative Intensity vs. Temperature

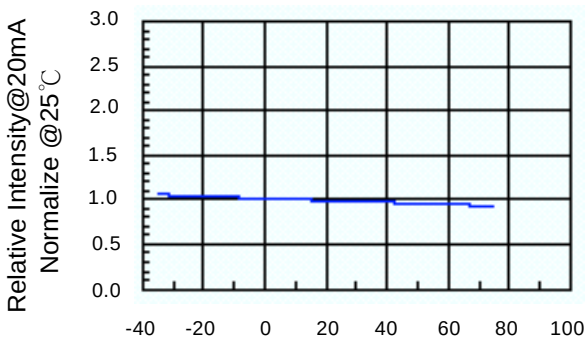


Fig.5 Luminous Spectrum(Ta=25℃)

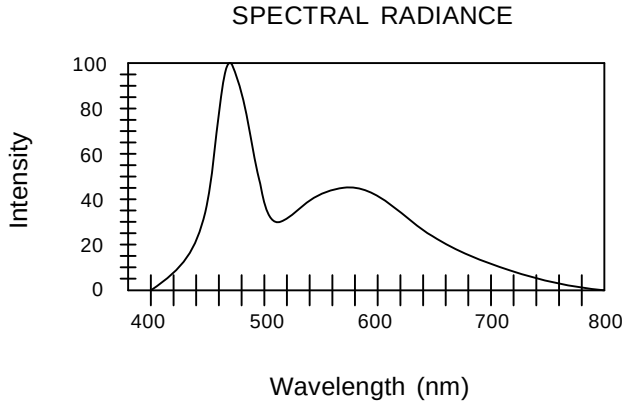
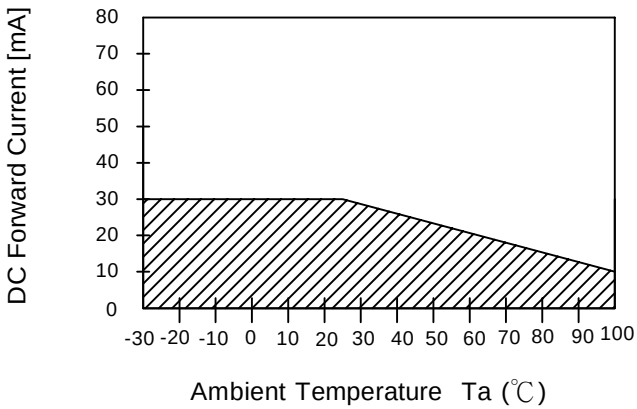
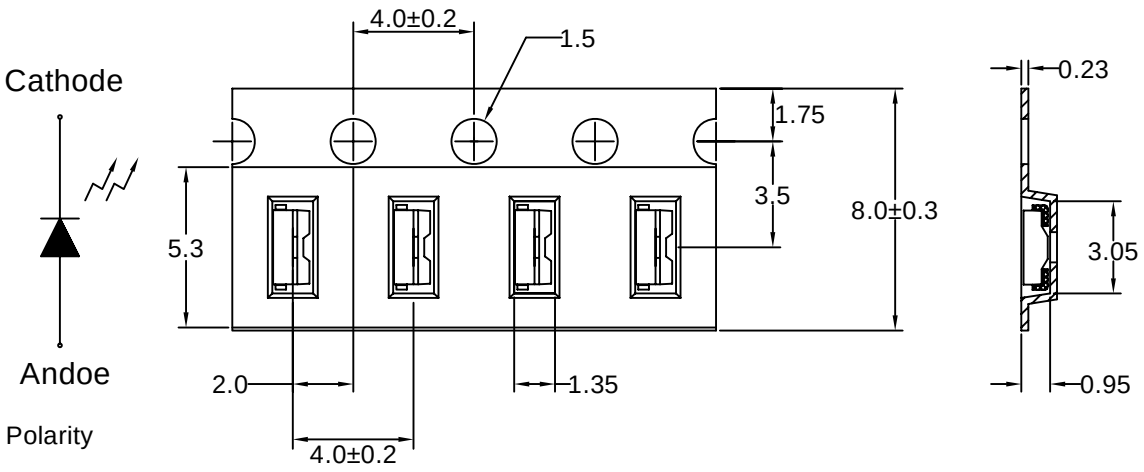


Fig.6 Forward Current vs. Temperature

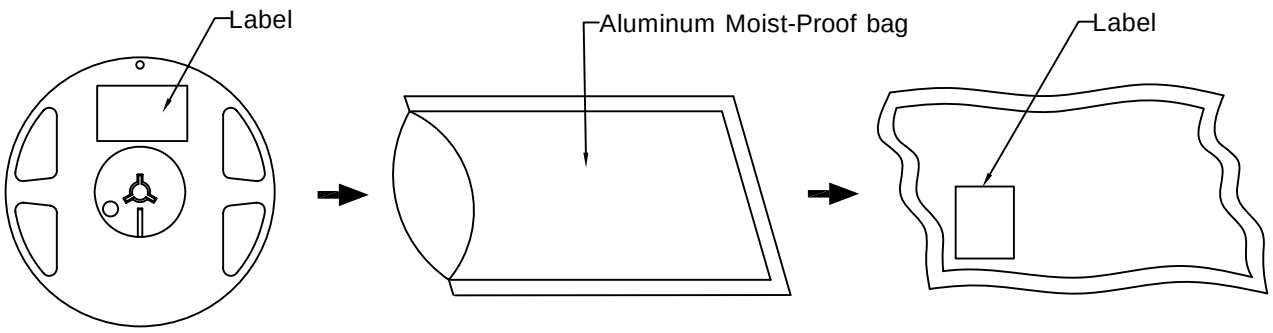


Carrier Type Dimensions



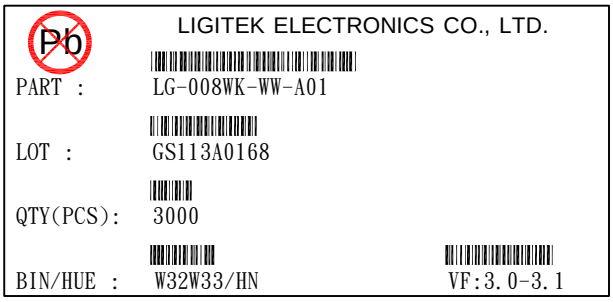
Note : The tolerances unless mentioned is ±0.1mm,Angle± 0.5. Unit=mm.

• Packing Specifications



Part No.	Description	Quantity/Reel
LG-008WK-WW-A01	8.0mm tape,7"reel	3000 devices

Label Explanation

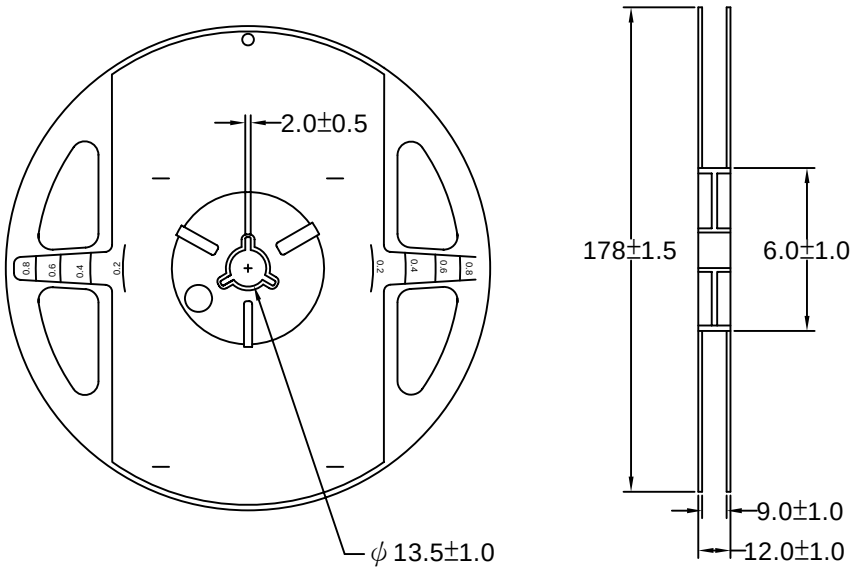


BIN : Luminous Intensity

HUE : Dominant Wavelength

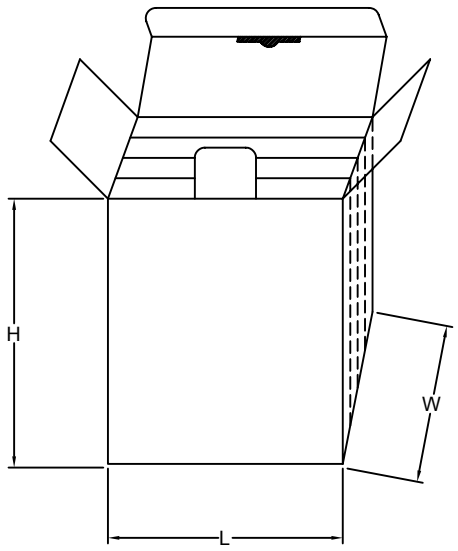
VF : Forward Voltage

Reel Dimensions

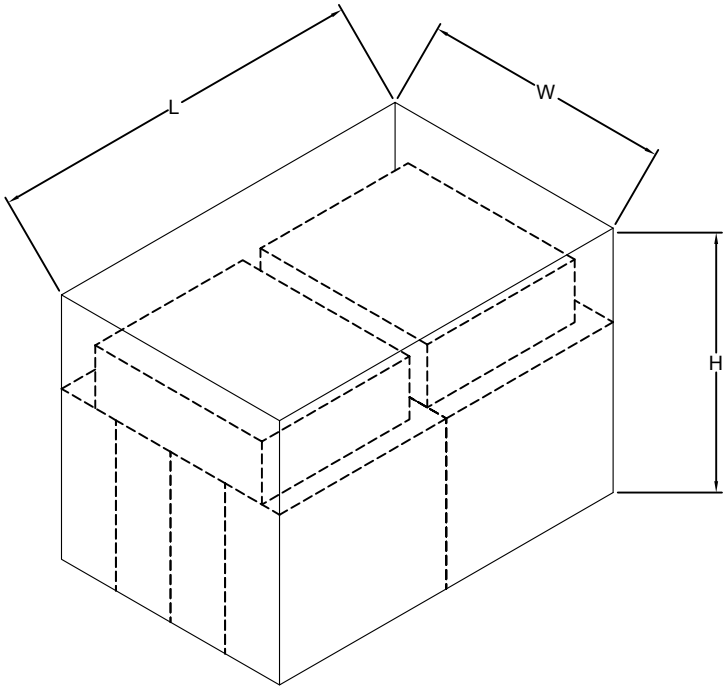


Box Explanation

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



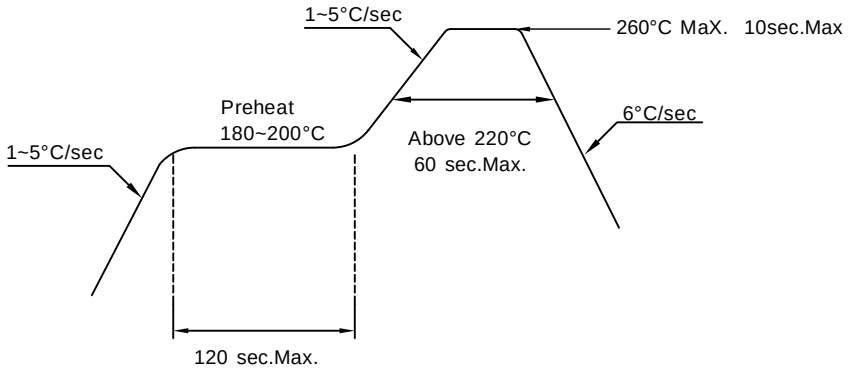
3. 10 INNER BOXES / CARTON
4. CARTON SIZE : L X W X H 58cm X 34cm x 35cm



Recommended Soldering Conditions

1. Hand Solder
   Basic spec is ≦ 280°C 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:

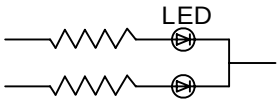
Storage time:

1. Calculated shelf life before opening is 12 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 168 hours 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.

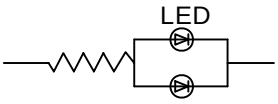
Drive Method:

LED is a current operated device, and therefore, requirer some kind of current limiting incorporated into the driver circuit. This current limiting typically takes the form of a current limiting resistor placed in series with the LED.
Consider worst case voltage variations than could occur across the current limiting resistor. The forward current should not be allowed to change by more than 40% of its desired value.

Circuit model A



Circuit model B



(A) Recommended circuit.
(B) The difference of brightness between LED could be found due to the VF-IF characteristics of LED.

Cleaning:

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

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.

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