SPECIFICATIONS FOR T3C SERIES MONOCHROMATIC LIGHT LED

Model： 3030

Part No： T3C**021A-*****

Features:

* Top view white LED
* Thermally Enhanced Package Design
* High luminous flux output
* High current capability
* Compact Package Size
* Wide viewing angle
* Pb-free Reflow Soldering Application
* The product itself will remain within RoHS compliant version

Applications

* Interior lighting
* Retrofits (replacement)
* General lighting
* Architectural / Decorative lighting

Part Numbering System

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X1 X2 X3 X4 X5 X6 X7 X8 X9 X10

Item Number Code	Description	Content
X1	Type code	1S:1010; 1A:1919; 20:2016; 3B:3014; 28:2835 34:3020; 3C:3030; 5C:5050; 7C:7070; 1D:100100; 19:Ceramic 3535; 15:Ceramic 5050; 11:Ceramic 1616.
X2	CCT code	2700K:27; 3000K:30; 4000K:40; 5000K:50; 5700K:57; 6500K:65.
X3	Color Rendering	Ra70:7; Ra80:8; Ra90;9.
X4	No. of serial chip	1-Z.
X5	No. of parallel chip	1-Z.
X6	Component code	A-Z.
X7	Color Code	M:ANSI; F:ERP; R:85℃ ANSI; T:105℃ ANSI; B:Backlighting; Q:Others;AT:Tospo
X8	Internal code1	\
X9	Internal code2	\
X10	Spare code	\

Electro Optical Characteristics, IF = 150mA

Color /Color Bin	Luminous Flux	
	Typ.	Min.
BL	21	18
PU1	45	37
PG1	186	160
PR1	51	44
AM5	127	112

* Tolerance of measurements of the Luminous Flux is ±7%.

Absolute Maximum Ratings at Tj=25℃

Item	Symbol	Absolute Maximum Ratings		Unit
Forward Current	IF	200		mA
Pulse Forward Current	IFP	300		mA
Power Dissipation	PD	BLUE	1320	mW
		PC Purple	1320	
		PC Green	1320	
		PC Red	1320	
		PC Amber	1320	
Reverse Voltage	VR	5		V
Operating Temperature	Topr	-40～+105		℃
Storage Temperature	Tstg	-40～+85		℃
Junction Temperature	Tj	120		℃
Soldering Temperature	Tsld	Reflow Soldering：230℃ or 260℃for 10sec		

* I_{FP} condition with Pulse: Width≤100μs, Duty cycle≤1/10.

* LED's properties might be different from suggested values like above and below tables if operation condition will be exceeded our parameter range. Care is to be taken that power dissipation does not exceed the absolute maximum rating of the product.

* All measurements were made under the standardized environment of Lightning LED.

Electrical/Optical Characteristics at Tj=25℃

Item	Symbol	Color	Min.	Typ.	Max.	Unit	Test Condition
Forward Voltage	VF	BLUE	-	6.3	6.6	V	IF=150mA
		PC Purple	-	6.3	6.6		
		PC Green	-	6.3	6.6		
		PC Red	-	6.3	6.6		
		PC Amber	-	6.3	6.6		
Reverse Current	IR	BLUE	-	-	10	μA	VR=5V
		PC Purple					
		PC Green					
		PC Red					
		PC Amber					
Viewing Angle	2θ1/2	BLUE	-	120	-	°	IF=150mA
		PC Purple					
		PC Green					
		PC Red					
		PC Amber					
Thermal Resistance	(Rth $_{j\text{-}sp}$)	BLUE	-	17	-	℃/W	IF=150mA
		PC Purple	-	17	-		
		PC Green	-	17	-		
		PC Red	-	17	-		
		PC Amber	-	17	-		
Electrostatic Discharge	ESD	BLUE	1000	-	-	V	HBM
		PC Purple	1000	-	-		
		PC Green	1000	-	-		
		PC Red	1000	-	-		
		PC Amber	1000	-	-		

* Tolerance of measurements of the Forward Voltage is ±0.2V.
* 2θ1/2 is the off-axis where the luminous intensity is 1/2 of the peak intensity.
* Rth j-sp is the thermal resistance from LED junction to solder point on MCPCB with electrical power.

The main wavelength standard grading, IF = 150mA , Tj = 25℃

Color	Min	Max	Unit
BL	455	460	nm
	460	465	nm
	465	470	nm

*Tolerance of measurements of the WD is ±1nm

Luminous Flux Ranks, IF = 150mA , Tj = 25℃

Luminous Flux			
Color	**Code**	**Min**	**Max**
BL	AH	18	22
	AJ	22	26
	AK	26	30
PU1	AM	37	44
	AN	44	51
	AP	51	58
PG1	BE	160	180
	BF	180	200
PR1	AN	44	51
	AP	51	58
	AQ	58	65
AM5	AZ	112	120
	BA	120	130
	BB	130	140

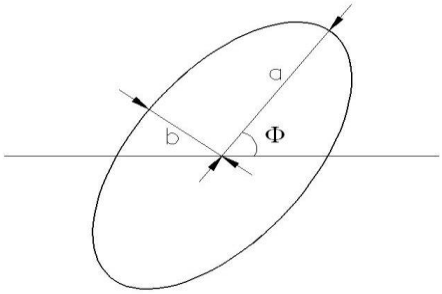
*** Tolerance of measurements of the Luminous Flux is ±7%.**

Forward Voltage Ranks, IF = 150mA, Tj =25℃

Code	Min	Max	Unit
A4	5.8	6.0	V
B4	6.0	6.2	V
C4	6.2	6.4	V
D4	6.4	6.6	V

* Tolerance of measurements of the Forward Voltage is ±0.2V.

CIE Chromaticity Diagram, IF = 150mA, Tj = 25℃

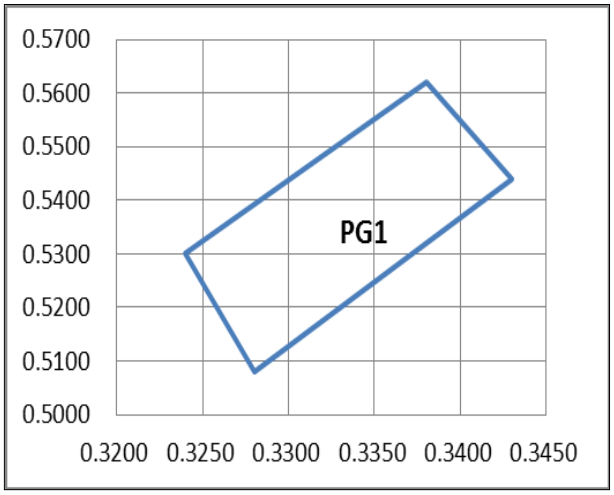


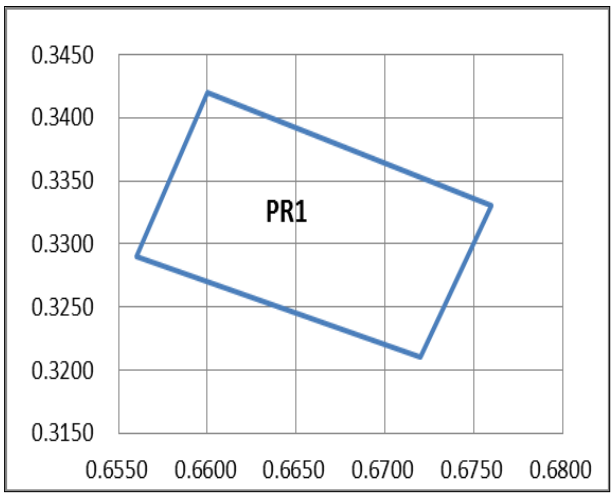
The color ranks have chromaticity ranges within 5-step MacAdam ellipse

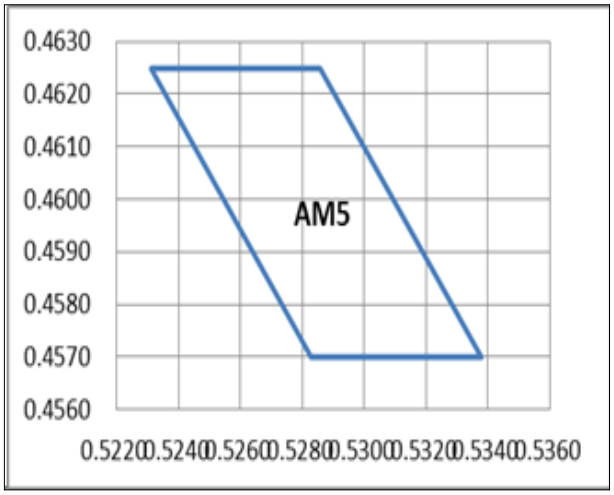
Color Code	Center		Radius(a,b)		Angle(deg)	Steps
	Cx	Cy				
PU1	0.3015	0.1303	0.0027	0.0014	53.42	5

*Measurement Uncertainty of the Color Coordinates : ± 0.005.

CIE Chromaticity Diagram, IF = 150mA, Ta = 25℃







Color Code	Center	
	Cx	Cy
PG1	0.3280	0.5080
	0.3240	0.5300
	0.3380	0.5620
	0.3430	0.5440
PR1	0.6560	0.3290
	0.6600	0.3420
	0.6760	0.3330
	0.6720	0.3210
AM5	0.5231	0.4625
	0.5286	0.4625
	0.5338	0.4570
	0.5283	0.4570

*Measurement Uncertainty of the Color Coordinates : ± 0.005.

Fig 1. Color Spectrum, Tj = 25℃

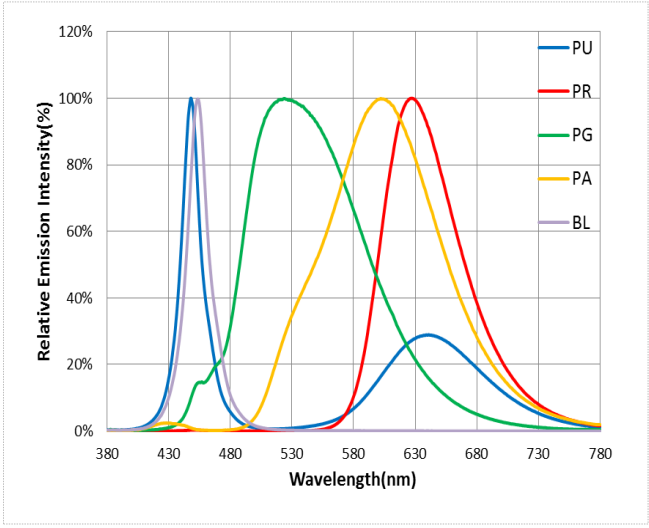
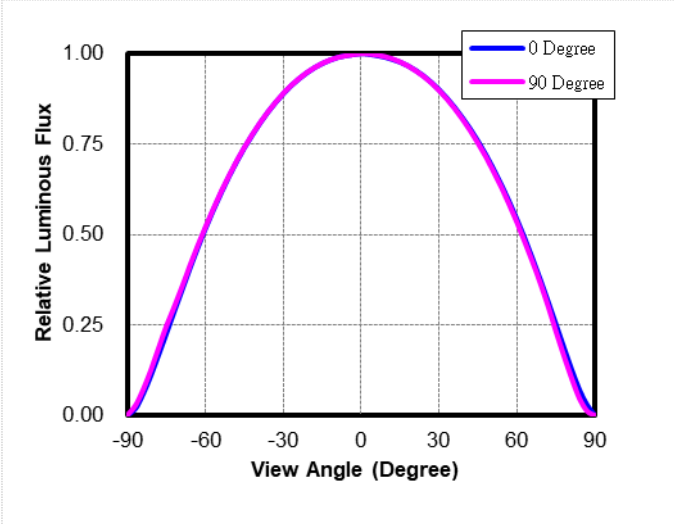
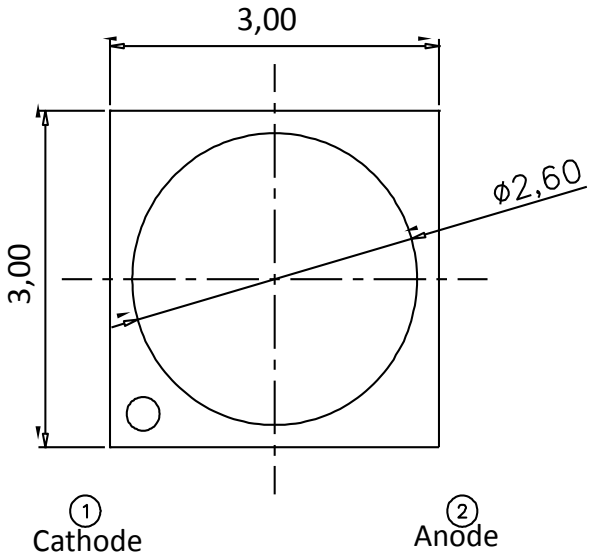
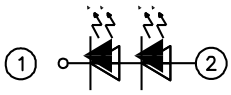


Fig 2. Viewing Angle Distribution, Tj = 25℃

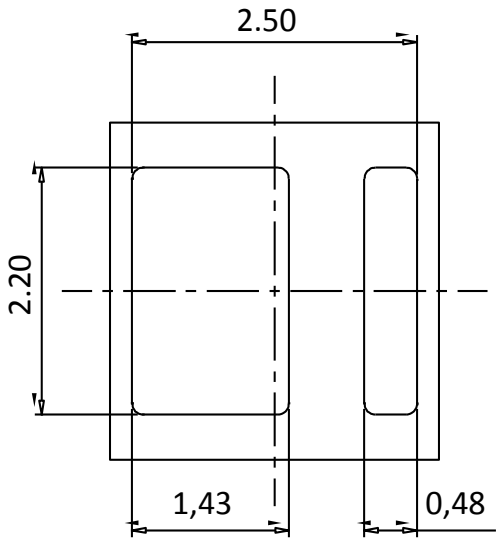


Package Dimensions

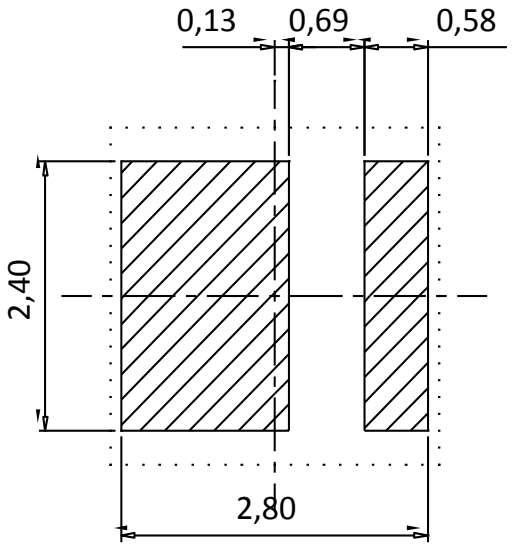




Polarity



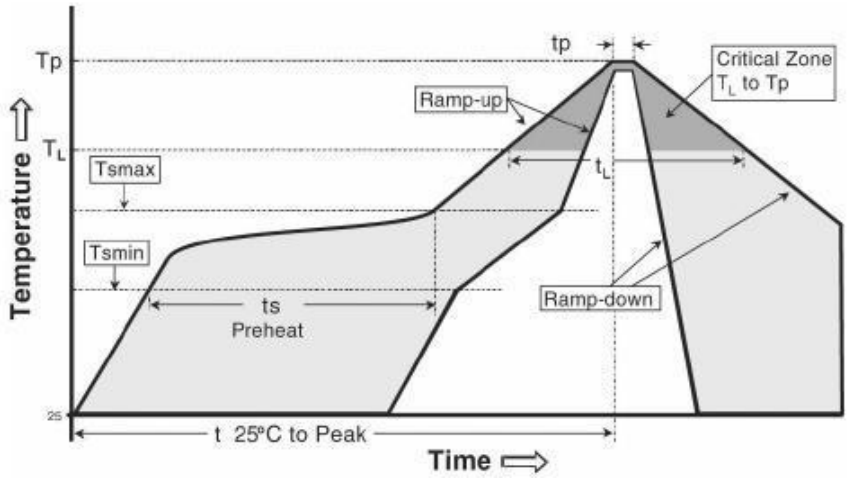
Bot. view



Soldering patterns

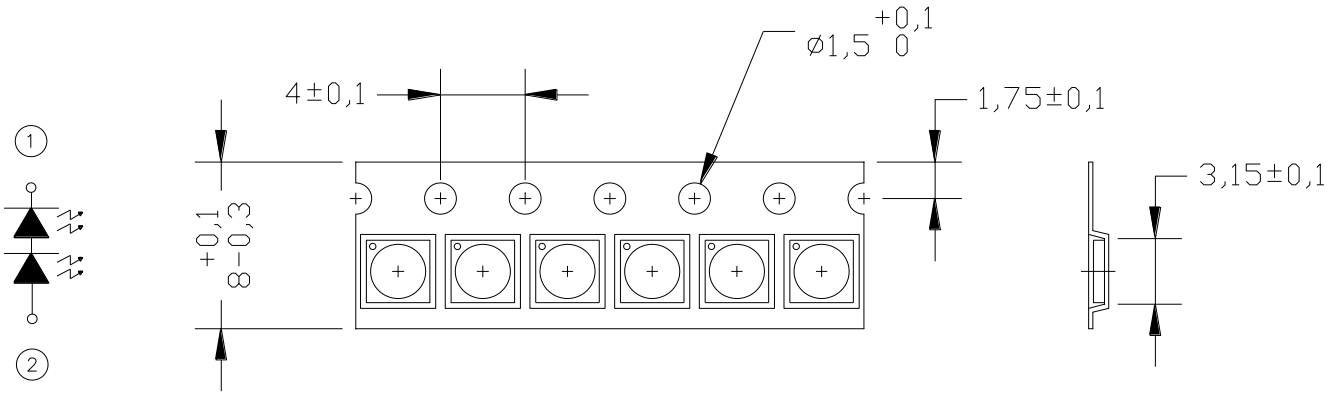
* The tolerance unless mentioned is ±0.2mm, unit = mm

Reflow Soldering Characteristics



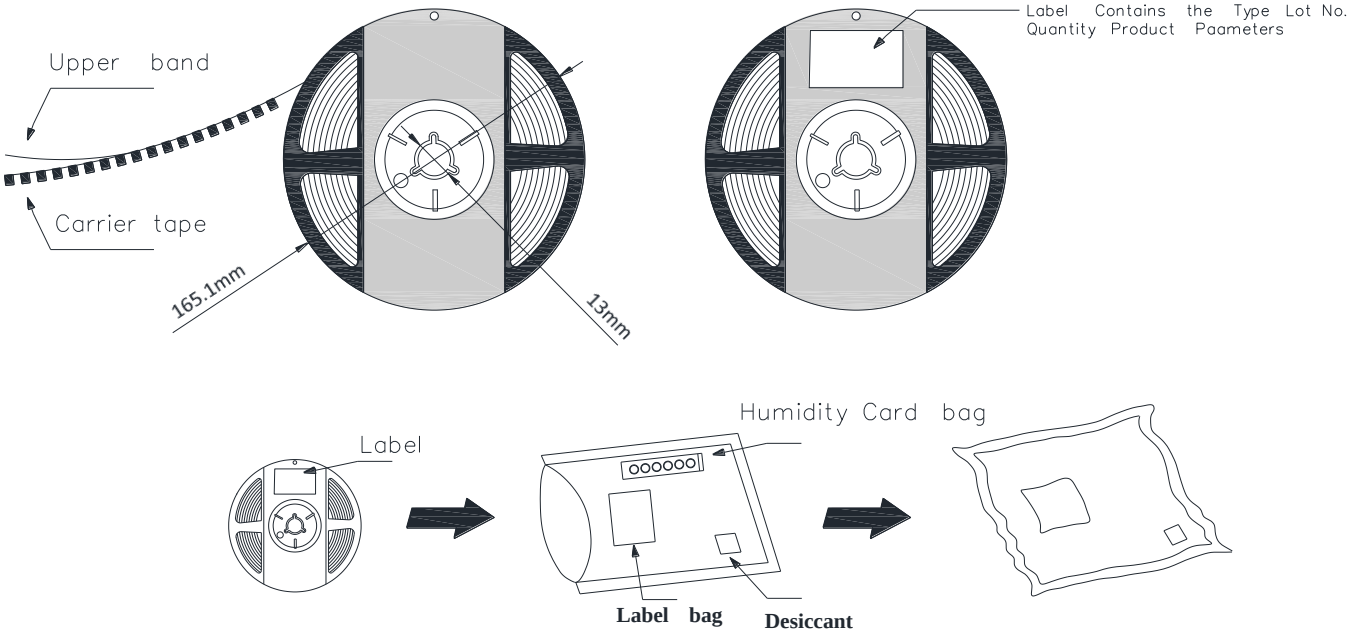
Reflow soldering	
Temperature Min (Tsmin) Temperature Max (Tsmax) Time(ts)from (Tsmin to Tsmax)	150° C 200° C 60-120 seconds.
Ramp-up rate (TL to Tp)	3° C/seconds max.
Liquidous temperature(TL) Time(tL) maintained above TL	217° C 60-150 seconds
Peak package body temperature(Tp)	260° C max
Time (tp) within 5° C of the specified classification temperature (Tc).	30 seconds max
Ramp-down rate (Tp to TL)	6° C/second max
Time 25 ° C to peak temperature	8 min max

Package Dimensions of Tape

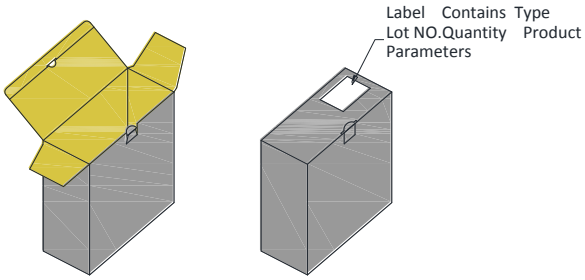


* Quantity : Max 5000pcs/Reel
* Cumulative Tolerance : Cumulative Tolerance/10 pitches to be ±0.2mm
* Package : P/N, Manufacturing data Code No. and Quantity to be indicated on a damp proof Package.
* unit = mm

Package Dimensions of Reel

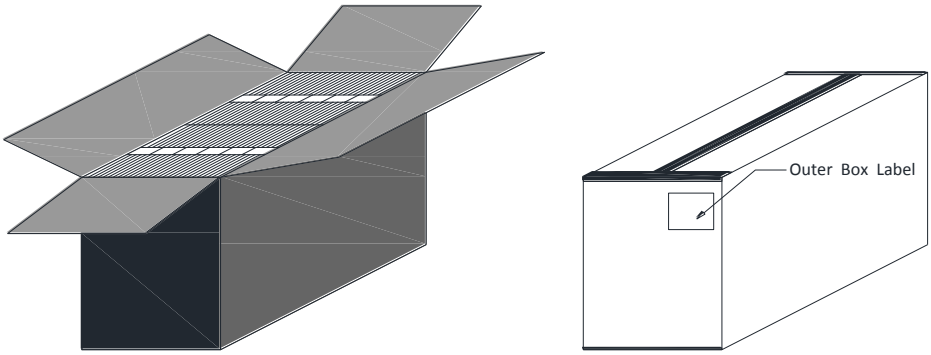


Package Box



* Capacity 10 reels per box.

Outer Box



* Capacity 30 or 60 reels per box.

Label

福建天电光电有限公司

FUJIAN LIGHTNING OPTOELEC TRONIC CO.LTD

型号Type: T********-*****

光通量Φ@ *** mA: *** - *** [LM]

色区Color Bin@*** mA: ****

电压Vf@ ***mA: ** - ** [V]

显指Ra@*** mA: ** (MIN)

Lot No.:A********-*- *******

Bin Code: **** 数量QTY:**** PCS

Caution

1. Reflow soldering is recommended not to be done more than two times. In the case of more than 24 hours passed soldering after first, LEDs will be damaged.
2. Repairs should not be done after the LEDs have been soldered. When repair is unavoidable, suitable tools must be used.
3. Die slug is to be soldered.
4. When soldering, do not put stress on the LEDs during heating.
5. After soldering, do not warp the circuit board.

Notes on Lightning EMC Series soldering:

1. Recommend to use reflow machine.
2. Recommend to use heating plate soldering.
3. Manual soldering is not recommended.

Notes on reflow process:

1. To confirm whether the actual temperature curve in the reflow soldering conditions comply with recommended conditions. LEDs are guaranteed for one time reflow.
2. During reflow process do not apply force on LED active area.
3. After reflow process, PCB board should be cooled down before packing or storage.

Precaution for use

Storage

1.Before opening the package: The LED should be kept at 30℃ or less and 90%RH or less.

2.After opening the package: The LED's floor life is 168Hrs under 30℃ or less and 60%RH or less. If unused LED remain, it should be stored in moisture proof packages JEDEC (MSL 3).

3.If the moisture absorbent material(silica gel)has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions：

Baking treatment:60±5℃ for 24 hours.