## 1. Product Description/ 6P 6b•

high reliability and high safety;

2835 LED Package, high lighting efficiency, low heat, without Mercury, belong to the environmental protection cold light source;

2835LED

The protection of the lamp is up to IP67, with beautiful appearance, no fouling situation.

IP67

# 2.Product Specification / 6P ŠË

## 2.1 Optical-electrical Characteristics(Absolute Maximum Ratings At Ts=25 )/ 6P ë2¶

Tab.2-1Optical-electrical Characteristics !6'P #ØGÄE 2¶

| Refond PN ö D} ‰Z | Customer PN .14 | 6P Module Characteristics | | | | |
|---|---|---|---|---|---|---|
| | | Current mA | Voltage(V) | Power(W) | 6P Module LM | |
| | | Typ | Typ | Typ | Min | Max |
| RF-MTB652T03-A1 6000-6500K | - | 125 | 24 | 3 8% | 375 | 420 |

| Color Rendering Index | (V)Test condition | Typ |
|---|---|---|
| | 24 | 24 |

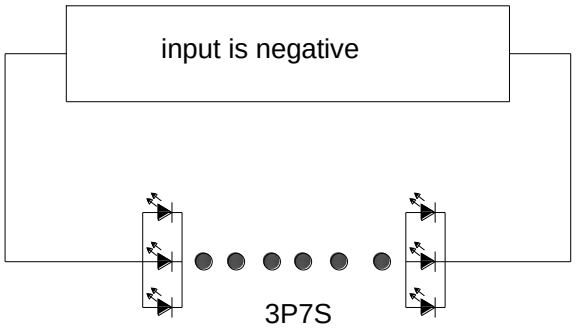
| 6P (MacAdamElipsis) | ≤5 |
|---|---|

Tab.2-2 Absolute Maximum Ratings at Ts=25℃ !6'P I‡$ &Q7ÿQl.^9•+¶"Ë

| Parameter | Symbol | Rating | Units |
|---|---|---|---|
| Forward Current | $I_F$ | 125 8% | mA |
| Peak Forward Current / | $I_{FP}$ | 165 | mA |
| Reverse Voltage | $V_R$ | 5 | V |
| Electrostatic Discharge | $E_{SD}$ | 2000 | V |
| Operating Temperature | $T_{OPR}$ | -40 ~ +85 | |
| Storage Temperature ä | $T_{STG}$ | -40 ~ +100 | |
| unction temperature ä LED | $T_J$ | 115 | |

## 2.2 Product Schematic And Interface Definition/6P ¶ SË

Fig.2-2 Product connection !6'P GÄ2¶)•




## 2.3 Product Module rule of naming 6P :

**RF ±MT B 65 2 T 03 ± B 1**

FÍ¿D×9»&† ä1 öM» •D×9» å

Refond version number (1: the first version)

B 1å

Product emitting light way B Top view

03 ö !6'P %.F 3W å

Product power: 03:Product is 3W

6P H: 85≥T 80

Product CRI H: 85≥T 80

LED * &† 2 2835

LED Package type 2 2835

6P 65:6000-6500K

Product CCT 65:6000-6500K

6P B

Product type (B: Freezer lights )

Module department code

LJä

Refond company abbrevitation(RF: Refond)

# 4. Product Reliability Test/6P ï2¶m

Tab 4-1 Light Bar Reliability Test Bþ9ð&~ïï2¶.-m

| Test Item/ | Test Conditions/ | Test Time/ | Number Of Test/ | Judgement Criterions/$ |
|---|---|---|---|---|
| | | | | .)$ |

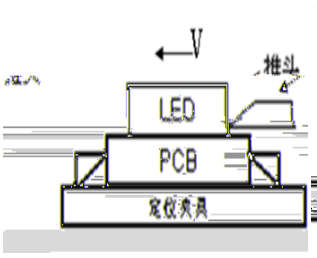
# 5. Product Materials Performance Test And Method At Ta=25 /6P D@ 2$;C

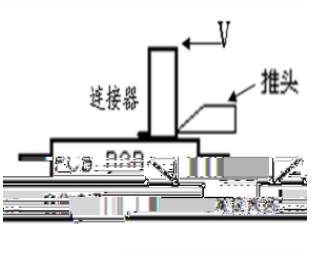
Tab 5-1Light Bar Materials Performance Test And Method Ta=25 Bþ9ðDø8(2¶SŒ;O?Ú' 8H?d

| Test Item/kl} | Test Conditions/5:- | Test Methods/ |
|---|---|---|
| LED Optical-electrical Characteristics/LED | Compliance With Specifications/ M | Integrating Sphere/ L |
| Connector Pull Force/ bm64(675% | ≥7kgf | Notes/ P |
| LED Push & Pull Force/ LED 675% | ≥3kgf | |
| LED Welding Standards/ LED C64P·_ | Offset Specifications/ X Shift /X b ≤ ±0.15mm; Y Shift/ Y b ≤ ±0.15mm; Angle/a15 ≤ ±3°; | |

Notes +–?w ö

Fig 5-1Push &Pull Test Equipment 675X%*?Ú^d^MFig 7-2Push &Pull Test Method 675X%*?Ú^d8H?d

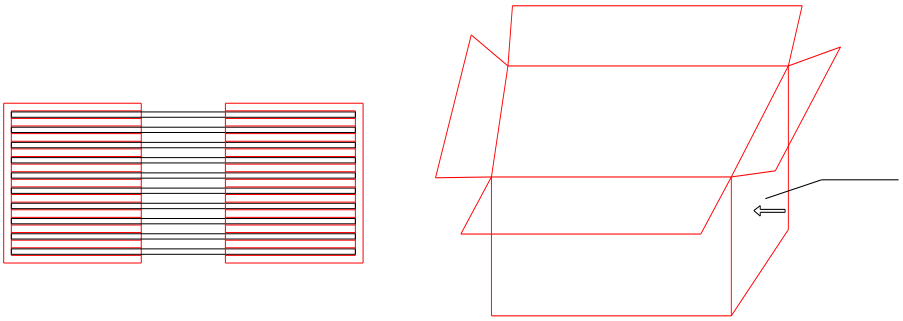


# 6.Packing Criterion/[%

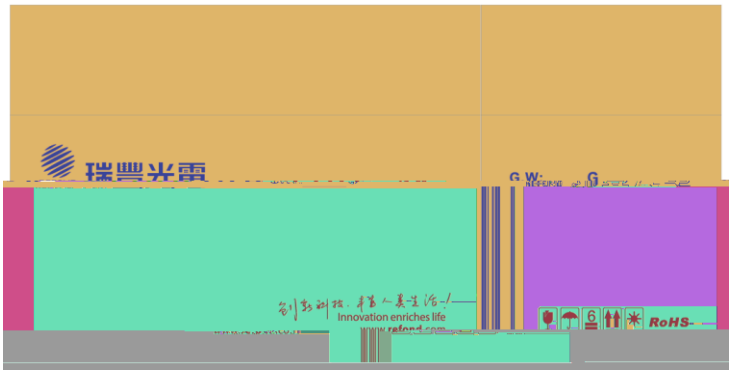
## 6.1 Package Diagram /[TKÉ3ž)•

Fig 8-1Package Diagram /%"[TKÉ3ž)•



## 6.2 Carton silk printing/Q@%

REFOND LOGOPay attention to identify




## 6.3Label Form Specification/NSË

深圳市瑞豐光電子股份有限公司
REFOND SHENZHEN REFOND OPTOELECTRONICS CO.,LTD.

| | | | |
|---|---|---|---|
| | | | |
| /customer PN | | | |
| /P.N | | | |
| /BIN CODE | | /LM | |
| /VF | | /CCT | |
| /CRI | | /QTY | |
| /N.W | | /DATE | |

## 7. Handling Precautions 6P

(1) LED operating environment and sulfur element composition cannot be over 100PPM in the LEDmating usage material. This is provided for informational purposes only and is not a warranty or endorsement.LED 0t!ëF>+ &Y • LED 100PPM.

(2) In order to prevent ex- ternal material from getting into the inside of LED, which may cause the malfunction of LED, the single content of Bromine element is required to be less than 900PPM,the single content of Chlorine elementis required to be less than 900PPM,the total content of Bromine element and Chlorine element in the external materials of the application products is required to be less than 1500PPM. This is provided for informational purposes only and is not a warranty or endorsement. É! hÁ=ñ+¥GÛDø_·bj#1LED LED I5 900PPM 900PPM 1500PPM.

(3) VOCs (Volatile organic compounds) emitted from materials used in the construction of fixtures can penetrate silicone encapsulants of LEDs and discolor when exposed to heat and photonic energy. The result can be a significant loss of light output from the fixture. Knowledge of the properties of the materials selected to be used in the construction of fixtures can help prevent these issues. Refond advises against theuse of any chemicals or materials that have been found or are suspected to have an adverse affect on device performance or reliability. To verifycompatibility, Refond recommends that all chemicals and materials be tested in the specific application and environment for which they are intended tobe used. Attaching LEDs, do not use adhesives that outgas organic vapor. 1#G·+æ!… ¼I 5´&`2¶Dø_·!©@¦bž LED LED LED LED LED

(4) Handle the component along the side surface by using forceps or appropriate tools; do not directlytouch or Handle the silicone lens surface, it may damage the internal circuitry.b©bV" G·b‘1â I 0t$ !]9ß8("6iñ+È&e è œ&~Iƒ64G·4Ú4¥.¥gŸd`.í& S…!âZ÷iñ è. &~SŒ!©5î)Þ$ cwGÄ`~ í

(5) In designing a circuit,the current through each LED cannot be exceed the absolute maximum rating specified for each LED. In the meanwhile,resistors for protection should be applied,otherwise slight voltage shift will cause big current change,burn out may happen. The driving circuit must be designed to allow forward voltage only when it is ON or OFF.If the reverse voltage is applied to LED, migration can be generated resulting in LED damage. ^M^0GÄ`~8… èb© bVLED

LEDí

(6) Thermal Design is paramount importance because heat generation may result in the Characteristics decline,such as brightness decreased,Color change and so on.Please consider the heat generation of the LEDs when making the system design.LED .H8¢)o ÉTya:I &`C|' F>+ I @¸157È&gR›7È&g è@¸15%Ömg!©

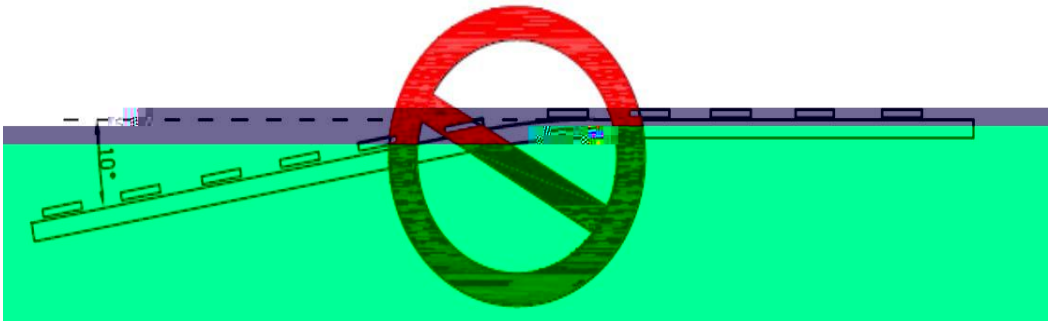
hk

(7) Compared to standard encapsulants, silicone is generally softer, and the surface is more likely to attract dust，requiring special care during processing. In cases where a minimal level of dirt and dust particles cannot be guaranteed, a suitable cleaning solution must be applied to the surface after the soldering of components. Refond suggests using isopropyl alcohol for cleaning. In case other solvents are used, it must be assured that these solvents do not dissolve the package or resin. Ultrasonic cleaning is not recommended. Ultrasonic cleaning may cause

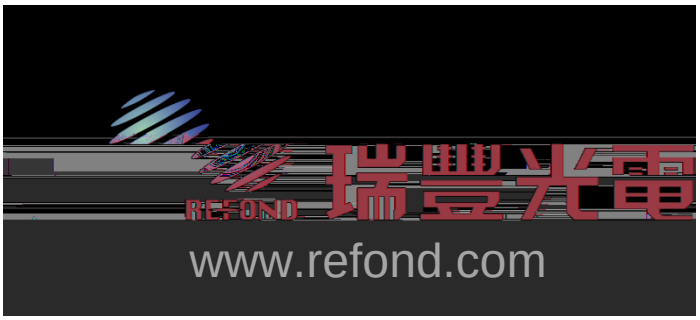
damage to the LED. •$ !e.•[TS…I‡>c èJÔS…b©0Çb aþ èZ÷iñ8¢&ÇhÓSžDø è1#G·8…1#E $º?w3ž è1â .^!6'P?• $O15\ >Ñb mg8… è)m?ÐC™!t&•i•\ dVG·2ÿ1âI @”?¦8H1ž è4 !{67UßG·1‘ ¨d !ë@”?¦$Ñ è, i•\ G·$¿$ !e@”?¦$Ñ è2Tk "l^P œ!©JÃ)Þ.•[T!â è` +•@”?¦&~SŒ!©.^ LED 0µ5îBè67ÐL¥@ ³1Ł

(8)Similar to most Solid state devices; LEDs are sensitive to Electro-Static Discharge (ESD) and Electrical Over Stress (EOS). #^$ !eI %Ù.‹!âGÄ-ß(÷!… •:Æ è LED .ïÐiÎ0Ç3® ¼Á3í

9>.NO warping or twisting the Light Bar more than 10°. Forbidding holding the LED part or connector part when handling. r LED¥n 6(¢v




(10) Other points for attention, please refer to our relevant information.$ . ?w3ž! k ^†&QCöFí ¿I‡ $ _Ó8( í




Declare GÂ8•
This specification is written both in English and in Chinese and the latter is formal.
!6'P\S:Ë õ!t ¼U€8 8H1ž õ$( è Ut9˜$AM !t ¼8 D×9» É$Uí