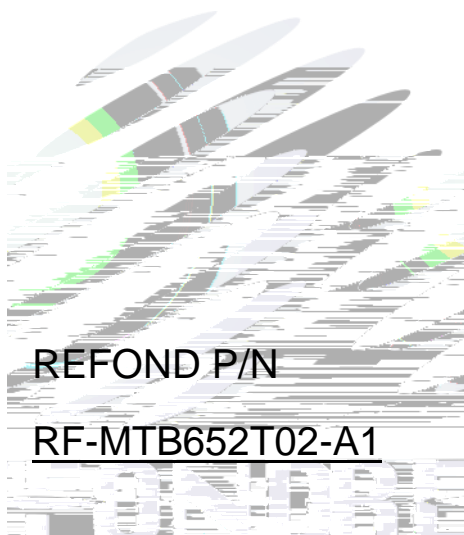


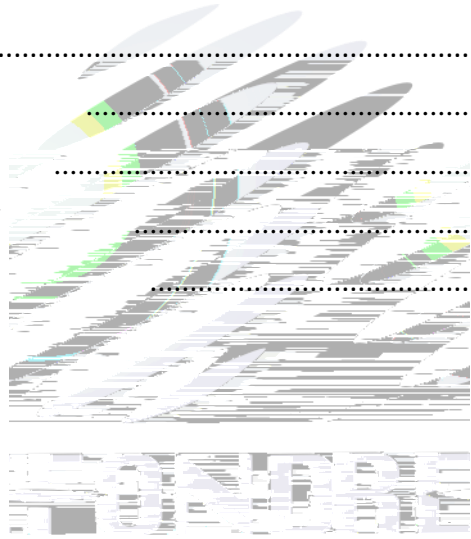
# SPECIFICATION



Mass Product

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## 1. Product Description

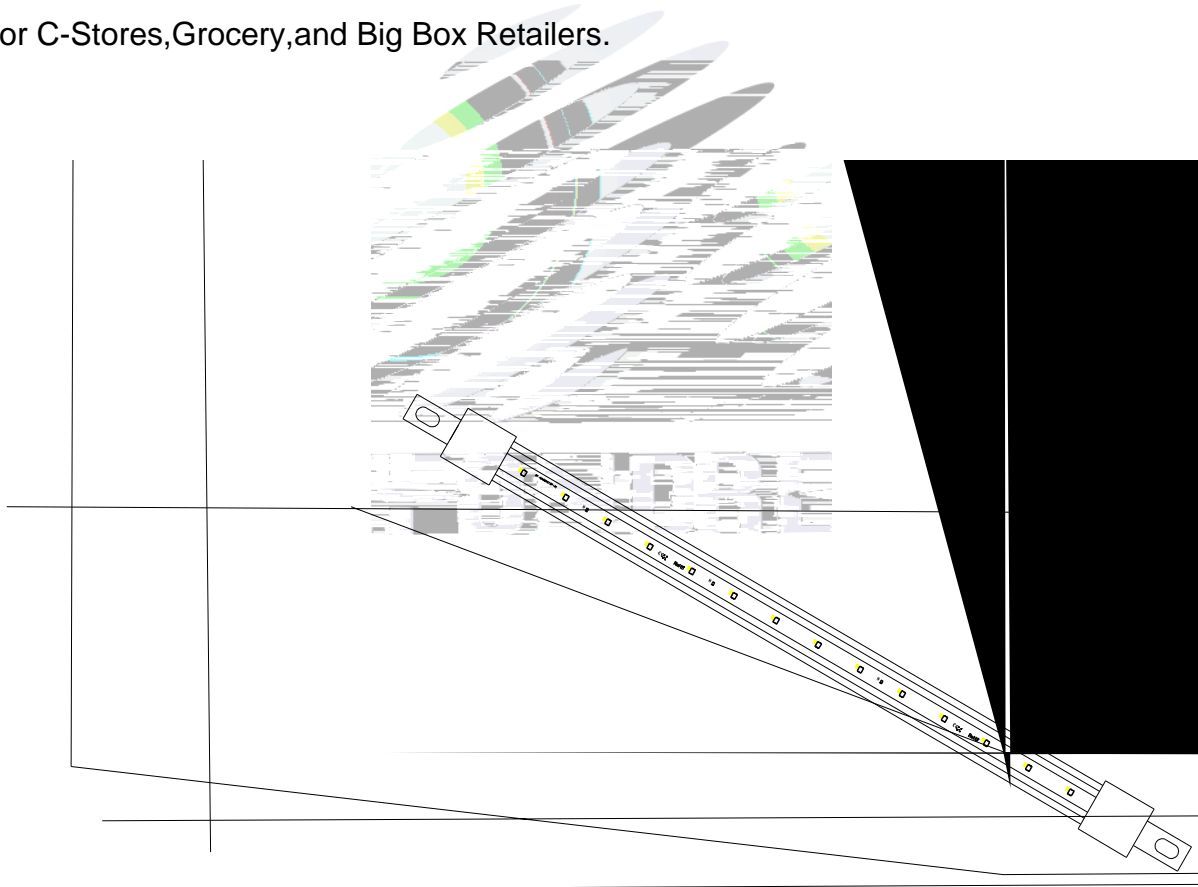
high reliability and high safety;

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

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

Designed for normal and low temperature refrigeration walk-ins and display case applications;

Ideal for C-Stores, Grocery, and Big Box Retailers.



## 2.Product Specification

### 2.1 Optical-electrical Characteristics(Absolute Maximum Ratings At Ts=25 )

Tab.2-1Optical-electrical Characteristics

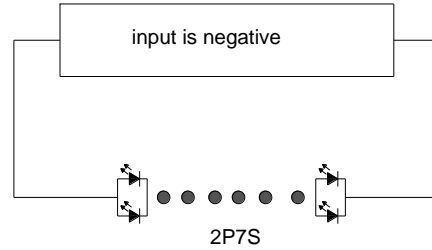
Refond PN	Customer PN	Module Characteristics				
		Current mA	Voltage(V)	Power(W)	Module LM	
		Typ	Typ	Typ	Min	Max
RF-MTB652T02-A1 6000-6500K	-	83	24	2 8%	250	280
Color Rendering Index		(V)Test condition		Typ		
		24		24		
				≤5		

Tab.2-2 Absolute Maximum Ratings at Ts=25°C

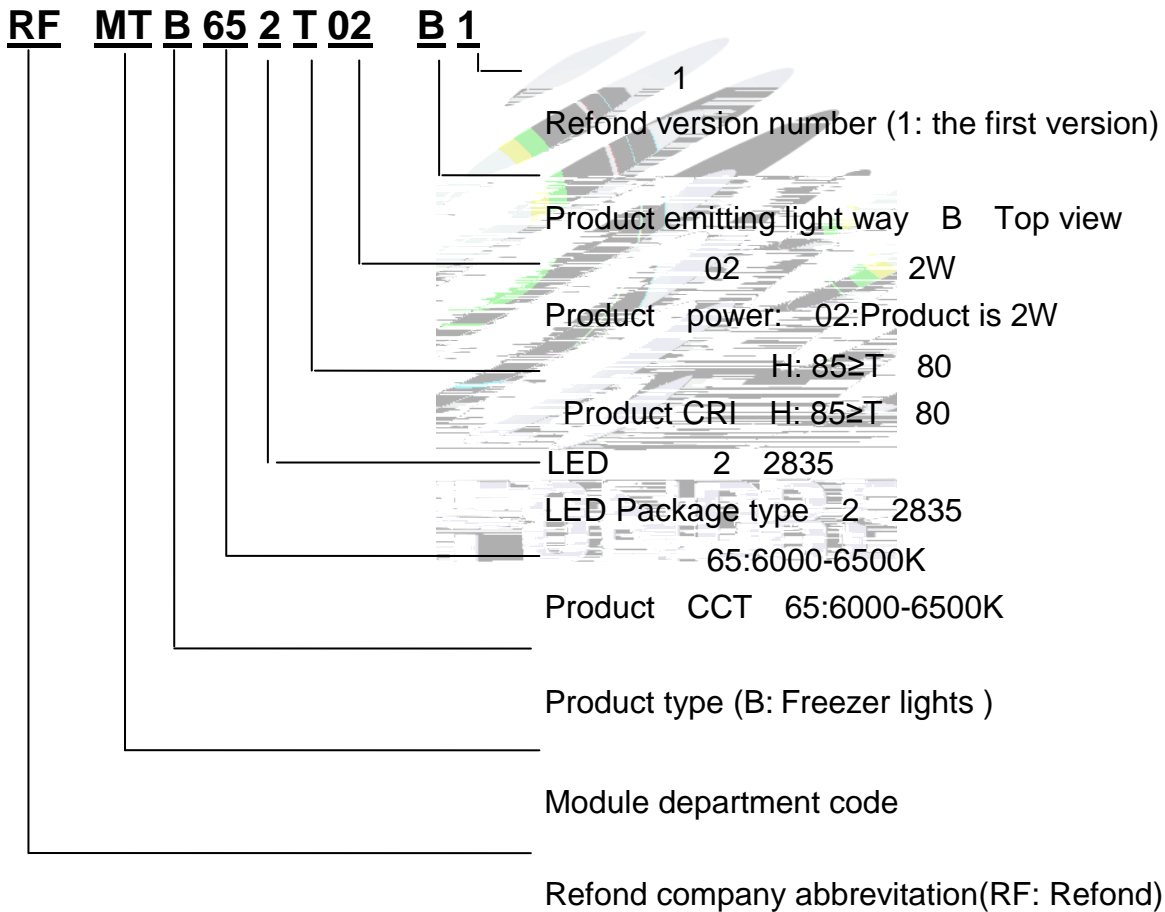
Parameter	Symbol	Rating	Units
Forward Current	$I_F$	85 8%	mA
Peak Forward Current	$I_{FP}$	110	mA
Reverse Voltage	$V_R$	5	V
Electrostatic Discharge	$E_{SD}$	2000	V
Operating Temperature	$T_{OPR}$	-40 ~ +85	
Storage Temperature	$T_{STG}$	-40 ~ +100	
unction temperature	$T_J$	115	

## 2.2 Product Schematic And Interface Definition

Fig.2-2 Product connection

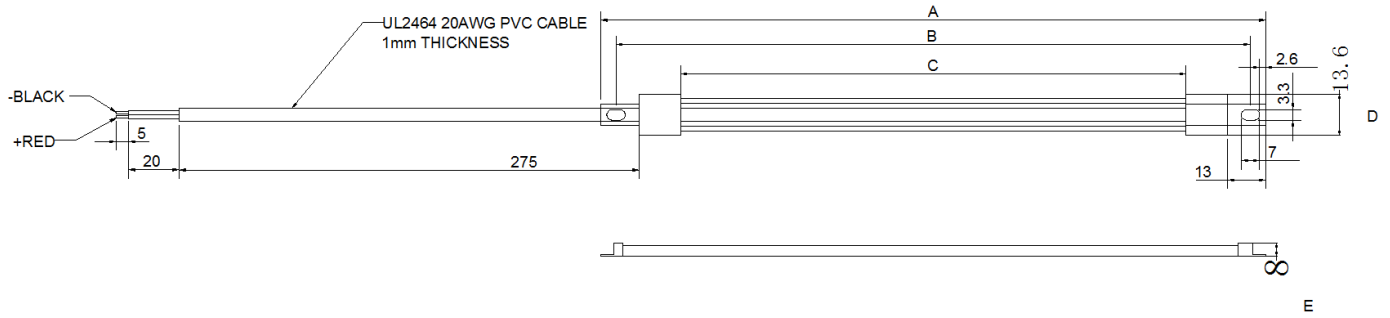


## 2.3 Product Module rule of naming :



### 3. Product Specification

#### 3.1 Outline Dimension

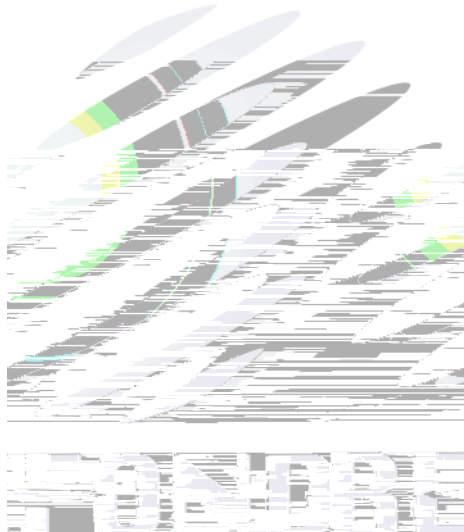


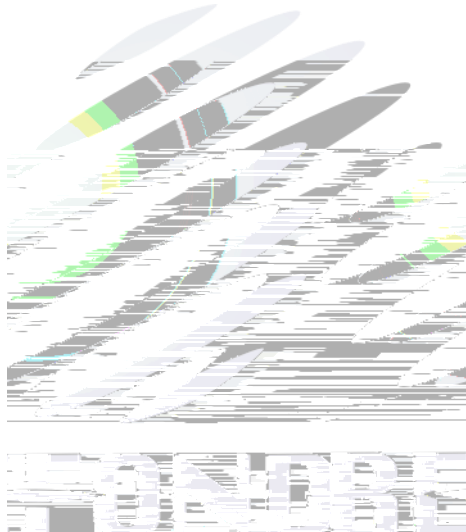
	Dimension
A	429 5mm
B	416 5mm
C	380 5mm
D	13.6 1mm
E	8 1mm

## 4. Product Reliability Test

Tab 4-1 Light Bar Reliability Test

Test Item/	Test Conditions/	Test Time/	Number Of Test/	Judgement Criterions/
Operating Life At Room Temperature/	$T_A=25$ $I_F=150mA$ $T_j<115$	500Hrs	0/6	1. $\Phi<30\%$ ,









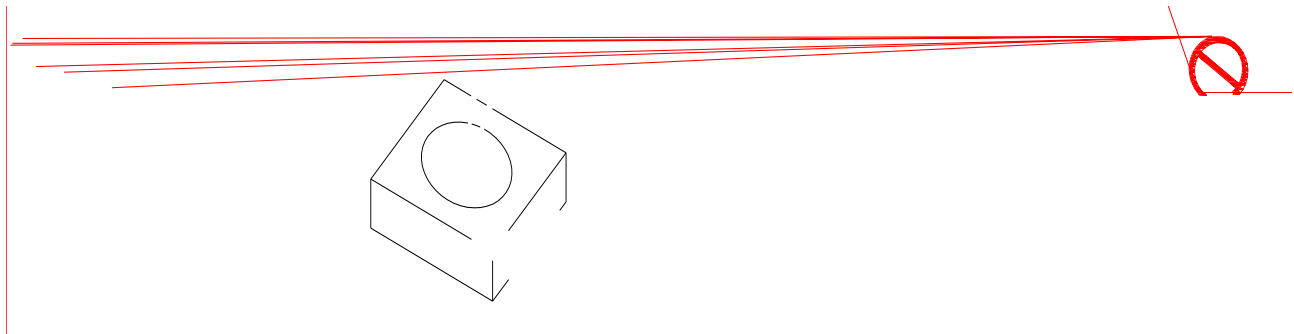
## 7. Handling Precautions

(1) LED operating environment and sulfur element composition cannot be over 100PPM in the LED mating usage material. This is provided for informational purposes only and is not a warranty or endorsement. LED

(2) In order to prevent external 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 element is 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.

(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 the use of any chemicals or materials that have been found or are suspected to have an adverse affect on device performance or reliability. To verify compatibility, Refond recommends that all chemicals and materials be tested in the specific application and environment for which they are intended to be used. Attaching LEDs, do not use adhesives that outgas organic vapor.

(4) Handle the component along the side surface by using forceps or appropriate tools; do not directly touch or Handle the silicone lens surface, it may damage the internal circuitry.



(5) In designing a circuit, the current through each LED cannot be exceeded 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.

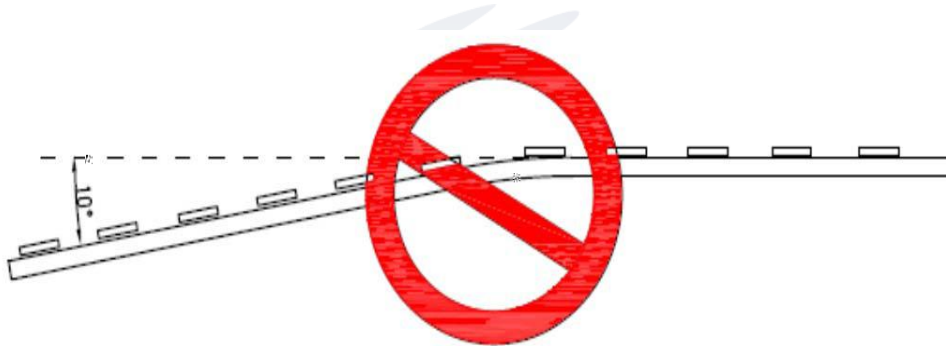
(6) Thermal Design is paramount importance because heat generation may result in the Characteristics decline, such as brightness decreased, Color change and so on. Please consider the heat generation of the LEDs when making the system design. LED

(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

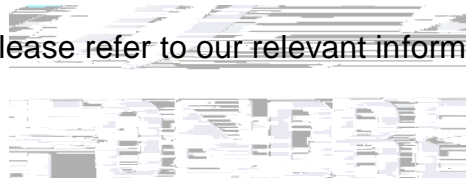
damage to the LED.

(8) Similar to most Solid state devices; LEDs are sensitive to Electro-Static Discharge (ESD) and Electrical Over Stress (EOS).

9>.NO warping or twisting the Light Bar more than 10°. Forbidding holding the LED part or connector part when handling.



(10) Other points for attention, please refer to our relevant information.







Declare

This specification is written both in English and in Chinese and the latter is formal.