# 3636U06-02B80L12-C3-002 Datasheet

The 3636 LED light source is a high-performance energy-saving device that can handle high heat and high drive current.
此款 3636 LED 光源是一种高性能节能器件，可以处理高热量和高驱动电流。

The Purple LED light source with peak wavelength ranging from 275nm to285nm.
紫外 LED 光源峰值波长为 275nm ~285nm。

This part has a foot print that is compatible to most of the same size LED in the market today.
此器件的焊盘兼容当今市场上大部分相同大小的 LED。

## FEATURES/特点

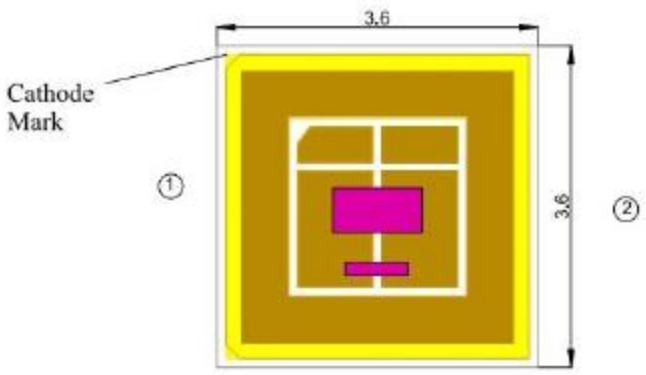
- Deep UV LED with emission wavelength between 275nm to 285nm
  具有发射波长的深紫外光 LED 在 275nm 至 285nm 之间
- Compatible with reflow soldering process
  兼容回流焊工艺
- Low thermal resistance/热阻低
- Long operation life/寿命长
- Wide viewing angle at 120°
  120° 大发光角度
- Superior ESD protection
  优越的 ESD 保护
- Environmental friendly, RoHS compliance
  材质环保，符合 RoHS 要求

## APPLICATIONS/应用

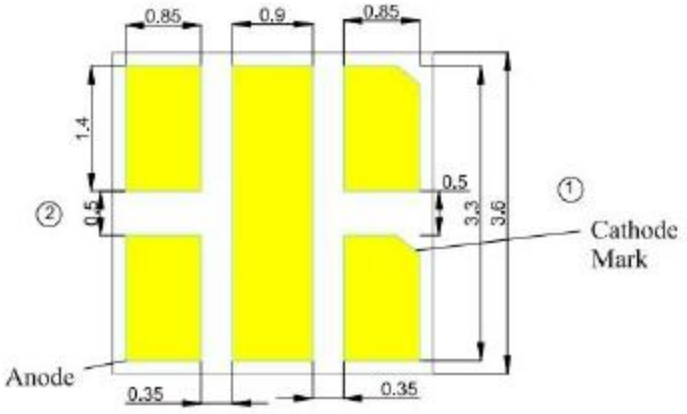
- Personal hygiene 个人卫生
- Portable devices 便携设备
- Water disinfection 水消毒
- Surface disinfection 表面消毒
- Air disinfection 空气消毒

Note: The information in this document is subject to change without notice.
注：本文件中的信息如有变更，恕不另行通知。

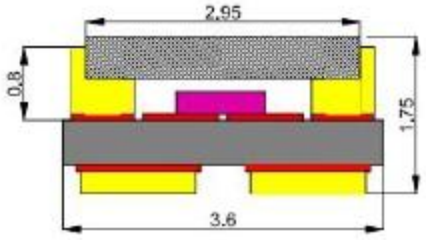
## PACKAGE DIMENSIONS 封装尺寸



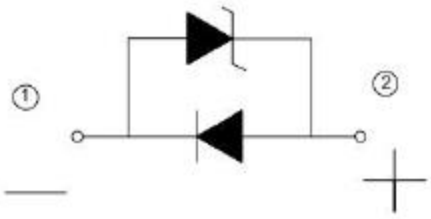

正面图



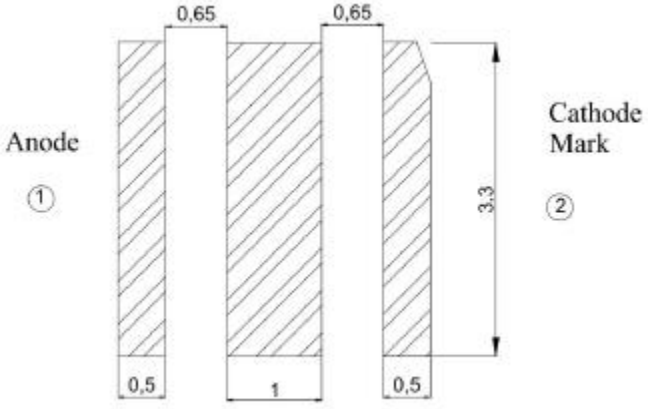

背面图




侧面图




## Recommended Solder Pad Design 推荐焊盘设计




Notes/ 注:

1. All dimensions in millimeters.所有尺寸单位为 mm
2. Thickness tolerance of product is ±0.05mm. 产品厚度公差为±0.02mm
3. Tolerance is ±0.1mm unless otherwise noted. 如未特别注明，默认公差为±0.1mm

## ABSOLUTE MAXIMUM RATINGS 最大限定参数（Ta=25℃）

| | | | |
|---|---|---|---|
| Forward current 正向电流 | $I_F$ | 20 | mA |
| Peak Forward Current 正向脉冲电流 | $I_{FP}$ | 50 | mA |
| Reverse Voltage 反向电压 | $V_R$ | 5 | V |
| Power Dissipation 消耗功率 | Pd | 120 | mW |
| Operating Temperature 工作温度 | $T_{opr}$ | -20~+65 | ℃ |
| Storage Temperature 储存温度 | $T_{stg}$ | +5~+35 | ℃ |
| Soldering Temperature 焊接温度 | $T_{sld}$ | Reflow Soldering: 245℃ for 10 seconds | |
| LED Junction Temperature 结温 | $T_j$ | 80 | ℃ |

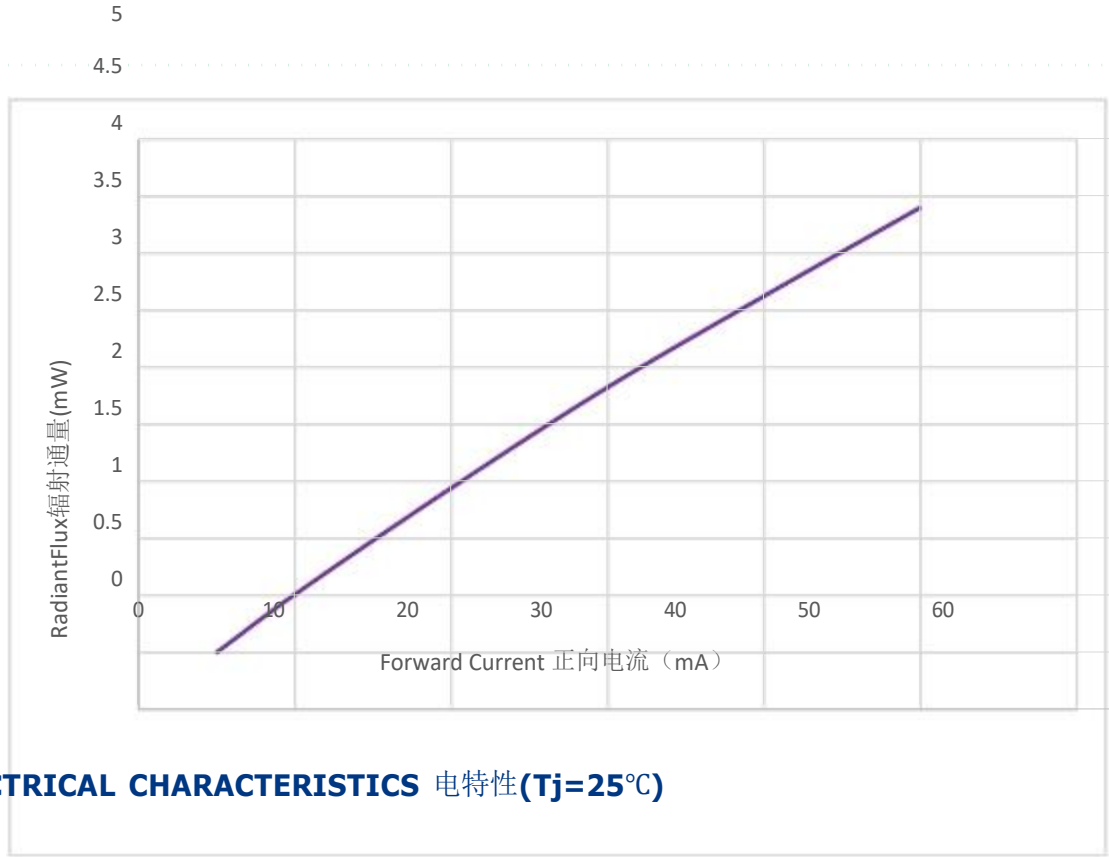
## CHARACTERISTICS 光电参数(Ta=25℃)

| | | | | | | |
|---|---|---|---|---|---|---|
| Reverse Current 反向漏电流 | $I_R$ | $V_R$=10V | -- | -- | 10 | uA |
| Forward Voltage 正向电压 | $V_F$ | $I_F$=20mA | 5.2 | 5.8 | 6.8 | V |
| Viewing Angle 发光角度 | $2\theta_{1/2}$ | $I_F$=20mA | -- | 120 | -- | deg. |
| Radiant Flux 辐射通量 | Φe | $I_F$=20mA | 1.5 | 2 | 3 | mW |
| peak wavelength 峰值波长 | λP | $I_F$=20mA | --- | 280 | --- | nm |

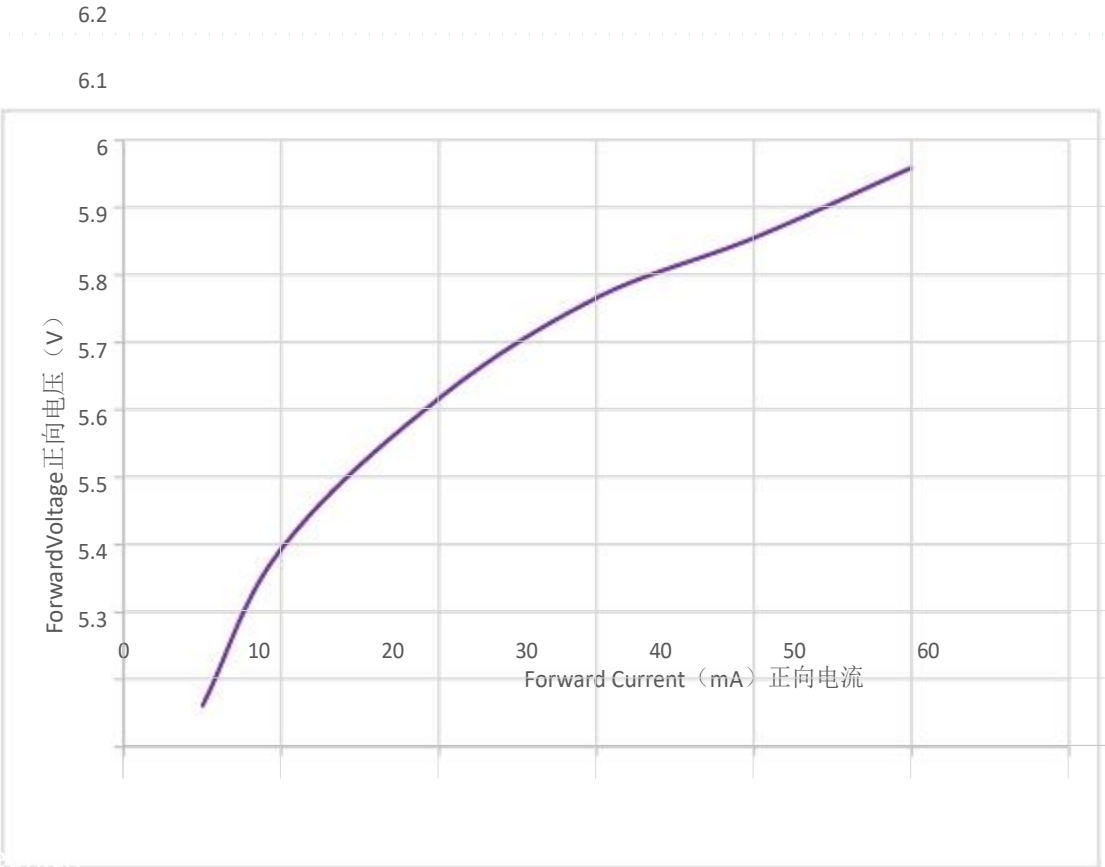
Notes/注:

1. Radiant Flux is measured with an accuracy of ± 5%. 辐射通量的测量精度为± 5%。
2. peak wavelength is measured with an accuracy of ± 5%. 峰值波长的测量精度为± 5%。
3. All measurements were made under the standardized environment of Shineon
所有的测量都是在易美的标准环境下进行的

## RELATIVE LUMINOUS FLUX VS. CURRENT 相对光通量 VS 电流 ($T_j$=25℃)




## ELECTRICAL CHARACTERISTICS 电特性(Tj=25℃)



## SORTING RANKS 分光等级

(1) Radiant Flux 辐射功率 (Tj=25℃)

| Part Number 型号 | Condition 条件 | Rank 等级 | | Unit 单位 |
|---|---|---|---|---|
| 3636U06-01B80L12-XX-XXX | 20mA | KB | KC | mW |
| | | 1-2 | 2-3 | |
| | | KD | | |
| | | 3-4 | | |

(2) Forward Voltage 正向电压 (Tj=25℃)

| Rank 等级 | Condition | Min 最小值 | Max 最大 | Unit 单位 |
|---|---|---|---|---|
| CD | 20mA | 5.2 | 5.6 | V |
| CE | | 5.6 | 6.0 | |
| DA | | 6.0 | 6.4 | |
| DB | | 6.4 | 6.8 | |

(3) peak wavelength 峰值波长 (Tj=25℃)

| Part Number 型号 | Condition 条件 | Rank 等级 | | Unit 单位 |
|---|---|---|---|---|
| 3636U06-01B80L12-XX-XXX | 20mA | QB | QC | nm |
| | | 260-270 | 270-280 | |
| | | QD | | |
| | | 280-290 | | |

Notes/注:

1.5% tolerance for radiant flux may be caused by measurement inaccuracy.
光辐射通量测量精度误差± 5%

2. Measurement Uncertainty of the Forward Voltage : ± 0.1V
正向电压测量误差:± 0.1%V

## REFLOW SOLDERING CHARACTERISTICS 回流焊特性

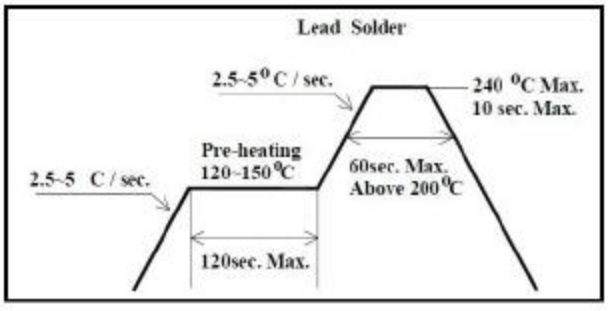
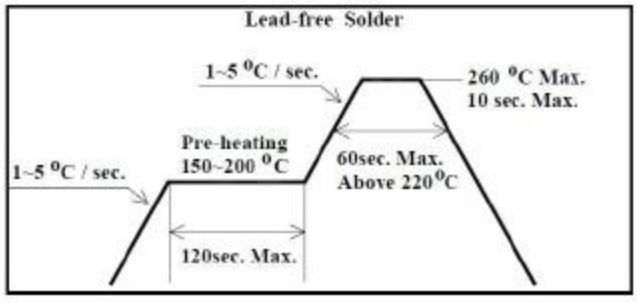
For Reflow Process 回流焊制程:

Preheating 预热 : 140℃~160℃±5℃,within 2 minutes. 2 分钟

Operation heating 作业加热 : 245℃(Max.) within 10 seconds.(Max)

245℃(最高) within 10 seconds.(最长)

Gradual Cooling (Avoid quenching).逐渐冷却(避免淬火)

| **Lead solder** 有铅焊接 | | **Lead-free solder** 无铅焊接 | |
|---|---|---|---|
| Pre-heat 预热 | 120-150℃ | Pre-heat 预热 | 150-200℃ |
| Pre-heat time 预热实际那 | 120 sec.Max. | Pre-heat time 预热实际那 | 120 sec.Max. |
| Peak Temperature 峰值温度 | 240℃ Max. | Peak Temperature 峰值温度 | 260℃ Max. |
| Soldering time condition<br>回流焊时间 | 10 sec.Max. | Soldering time condition<br>回流焊时间 | 10 sec.Max. |
|  | |  | |

## Reliability Test Items 可靠性测试项目

| Test Items 测试项目 | Test Duration 测试时长 | Number of Damaged 不良数 |
|---|---|---|
| Steady State Operating Life of High Temperature (HTOL) Ts=85℃, IF=Max 高温点亮稳态老化 Ts=85℃, IF=最大值 | 1000hrs | 0/20 |
| Steady State Operating Life of Low Temperature (LTOL) Ta=-40℃, IF=Max 低温点亮稳态老化 Ts=-40℃, IF=最大值 | 1000hrs | 0/20 |
| Pulse Wet Operating Life of High Temperature (PWHTOL) 高温高湿通断电老化 60℃/90%RH, IF30mins ON/30min OFF | 500hrs | 0/20 |
| High Temperature Storage (HTS) 高温存储 80℃ | 1000hrs | 0/20 |
| Low Temperature Storage (LTS) 低温存储 -40℃ | 1000hrs | 0/20 |
| Thermal Shock (TS) -45℃~125℃ 30min dwell 20sec transfer 冷热冲击-45℃ 30min~125℃ 30min ， 转换时间 20 秒 | 100cycles | 0/20 |
| Solder Resistance (SR) 265℃, 3X MSL 阻焊测试（3 遍潮气敏感度试验后） | 5sec | 0/20 |
| Solder Ability (SA) 245℃5sec, 95% coverage 可焊性 95%覆盖 | 5sec | 0/11 |
| Mechanical Shock (MS) 1500G 0.5msec pulse shock 机械冲击(MS) 1500G 0.5 毫秒脉冲冲击 | Each6 axis | 0/6 |
| Random Vibration (RV) 随机振动 6G RMS, 10-2000Hz, 10min | Per axis | 0/6 |
| Variable Vibration Frequency (VVF) 10-2000-10Hz, log or linear sweep rate, 20G for 1 min, 1.5mm each apply 3x per axis over 变频振动(VVF) 10-2000-10Hz，对数或线性扫频，20G, 1 分钟，1.5mm，每轴 3 遍以上 | 6hrs | 0/6 |
| Salt Spread (SS) 35℃, 30g/m2/day 盐雾试验 35℃,30 克/平方米/天 | 48hrs | 0/11 |

| Item 项目 | Symbol 符号 | Test Condition 测试条件 | Criteria for Judgment 判定标准 | |
|---|---|---|---|---|
| | | | Min. 最小 | Max. 最大 |
| Forward Voltage 正向电压 | $V_F$ | IF=Typical Current 典型电流 | | U.S.L x1.1 |
| Radiant Flux 辐射通量 | mW | IF=Typical Current | L.S.L x0.5 | |
| peak wavelength 峰值波长 | nm | IF=Typical Current | | U.S.L x1.1 |

## PRECAUTION FOR USE 使用注意事项

(1) This device should not be used in any type of fluid such as water, oil, organic solvent, etc.
When washing is required, IPA should be used.
本器件不得用于水、油、有机溶剂等任何流体中。如需清洁，请使用异丙醇进行清洗。

(2) When the LEDs are illuminating, operating current should be decided after considering the ambient maximum temperature.
当 LED 发光工作时，应根据环境最高温度来确定工作电流。

(3) LEDs must be stored to maintain a clean atmosphere. If the LEDs are stored for 3months or more after being shipped from ShineOn, a sealed container with a nitrogen atmosphere should be used for storage.
LED 储存环境须保持清洁。如果 LED 从易美发货后需储存 3 个月或更长时间，则应使用氮气柜进行储存。

(4) The LEDs must be used within seven days after opening the moisture proof packing.
Repack unused Products with anti-moisture packing, fold to close any opening and then store in a dry place.
LED 须在打开防潮包装后七天内使用。用防潮包装重新包装未使用的产品，折叠以封住开口，然后存放在干燥的地方。

(5) The appearance and specifications of the product may be modified for improvement without notice.
产品外观及规格如有改进，恕不另行通知。

(6) This LED is sensitive to the static electricity and surge. It is recommended to use a wrist Band or anti-electrostatic glove when handling the LEDs.
LED 对静电和浪涌很敏感。在处理 LED 时，建议使用防静电腕带或防静电手套。

(7) On manual soldering, a solder tip must be needed as grounded for usage. If over voltage which exceeds the absolute maximum rating is applied to LEDs, it will cause damage LEDs and result in destruction. Damaged LEDs will show some unusual characteristics such as leak current remarkably increase ,turn-on voltage becomes lower and the LEDs get unlighted at low current.
手工焊接时，焊接头必须接地。如果对 led 施加超过绝对最大额定值的过电压，会对 led 造成损坏。损坏的 led 会出现一些不寻常的特性，如漏电流明显增加，接通电压降低，低电流时 led 不亮。

(8)Warm prompt "The UV damage eyes，Do not stare at the light source，And don't shine a light into someone's eyes"
温馨提示："UV 伤眼！不要盯着光源看，也不要用光源照射别人的眼睛！"