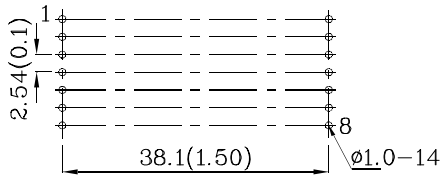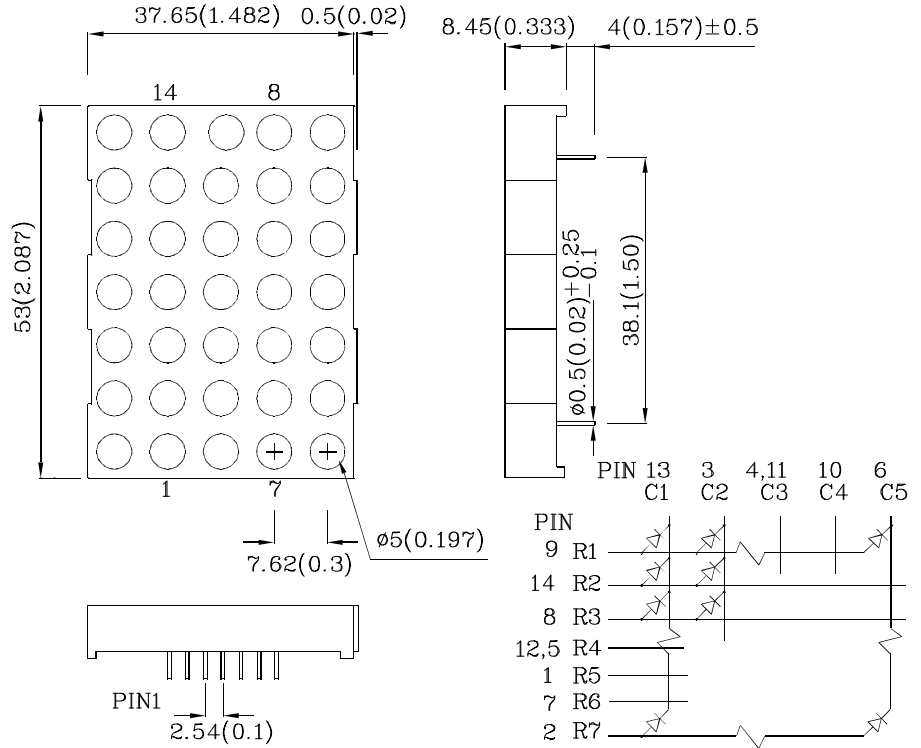# SunLED
www.SunLEDusa.com

## Features

● Low power consumption

● Robust package

● I.C. Compatible

● Standard configuration: Gray face w/ white dots

● Optional black face provides superior color contrast

● RoHS Compliant

RECOMMENDED PCB LAYOUT
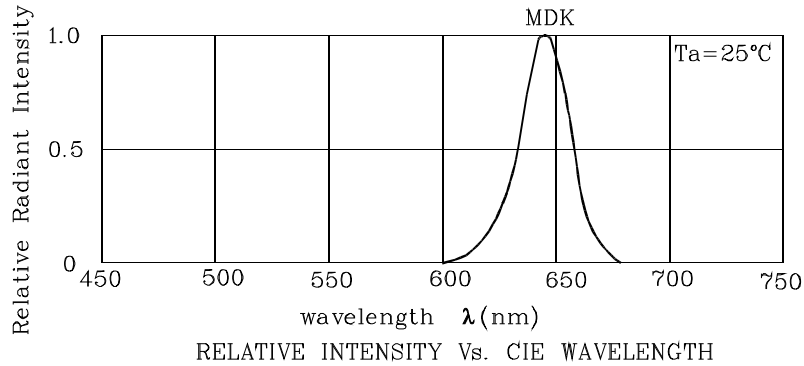


## Package Schematics



Notes:
1. All dimensions are in millimeters (inches), Tolerance is ±0.25(0.01")unless otherwise noted.
2. Specifications are subject to change without notice.

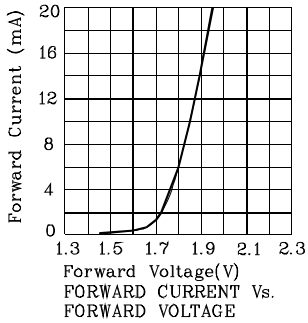| Absolute Maximum Ratings (T$_A$=25°C) | | MDK (AlGaInP) | Unit |
|---|---|---|---|
| Reverse Voltage | V$_R$ | 5 | V |
| Forward Current | I$_F$ | 30 | mA |
| Forward Current (Peak) 1/10 Duty Cycle 0.1ms Pulse Width | i$_{FS}$ | 185 | mA |
| Power Dissipation | P$_D$ | 75 | mW |
| Operating Temperature | T$_A$ | -40 ~ +85 | °C |
| Storage Temperature | Tstg | -40 ~ +85 | |
| Lead Solder Temperature [2mm Below Package Base] | | 260°C For 3-5 Seconds | |

| Operating Characteristics (T$_A$=25°C) | | MDK (AlGaInP) | Unit |
|---|---|---|---|
| Forward Voltage (Typ.) (I$_F$=10mA) | V$_F$ | 1.85 | V |
| Forward Voltage (Max.) (I$_F$=10mA) | V$_F$ | 2.5 | V |
| Reverse Current (Max.) (V$_R$=5V) | I$_R$ | 10 | uA |
| Wavelength of Peak Emission CIE127-2007* (Typ.) (I$_F$=10mA) | λP | 645* | nm |
| Wavelength of Dominant Emission CIE127-2007* (Typ.) (I$_F$=10mA) | λD | 630* | nm |
| Spectral Line Full Width At Half-Maximum (Typ.) (I$_F$=10mA) | △λ | 28 | nm |
| Capacitance (Typ.) (V$_F$=0V, f=1MHz) | C | 35 | pF |

| Part Number | Emitting Color | Emitting Material | Luminous Intensity CIE127-2007* (I$_F$=10mA) ucd | | Wavelength CIE127-2007* nm λP | Description |
|---|---|---|---|---|---|---|
| | | | min. | typ. | | |
| XMMDK50C | Red | AlGaInP | 52000 21000* | 129990 41990* | 645* | Column Cathode |

*Luminous intensity value and wavelength are in accordance with CIE127-2007

Mar 04,2014

MDK

Ta=25℃

RELATIVE INTENSITY Vs. CIE WAVELENGTH

❖ **MDK**

FORWARD CURRENT Vs.
FORWARD VOLTAGE

LUMINOUS INTENSITY Vs.
FORWARD CURRENT

FORWARD CURRENT
DERATING CURVE

LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE
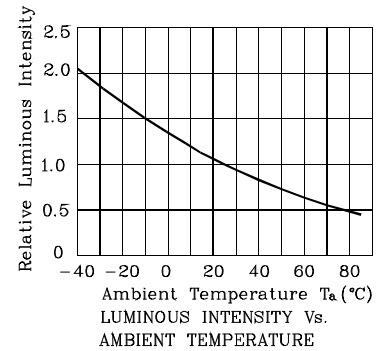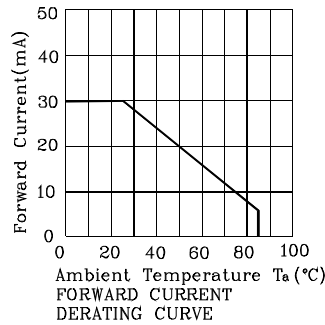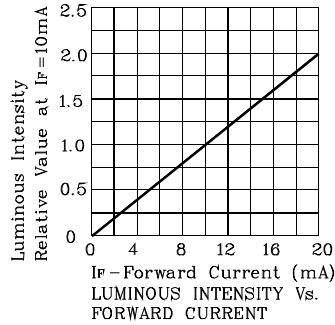
Wave Soldering Profile for Thru-Hole Products (Pb-Free Components)

255℃/5 sec max.

<30℃.

4℃/s max

(100℃)

(85℃)

Preheat time: 60 sec max.

Time(sec)
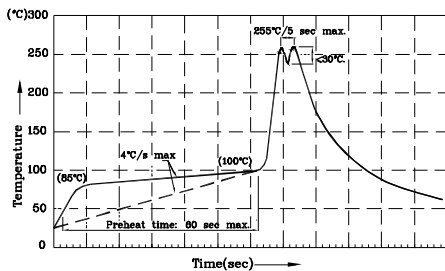
Notes:
1. Recommend pre-heat temperature of 105℃ or less (as measured with a thermocouple attached to the LED pins) prior to immersion in the solder wave with a maximum solder bath temperature of 260℃
2. Peak wave soldering temperature between 245℃ ~ 255℃ for 3 sec (5 sec max).
3. Do not apply stress to the epoxy resin while the temperature is above 85℃.
4. Fixtures should not incur stress on the component when mounting and during soldering process.
5. SAC 305 solder alloy is recommended.
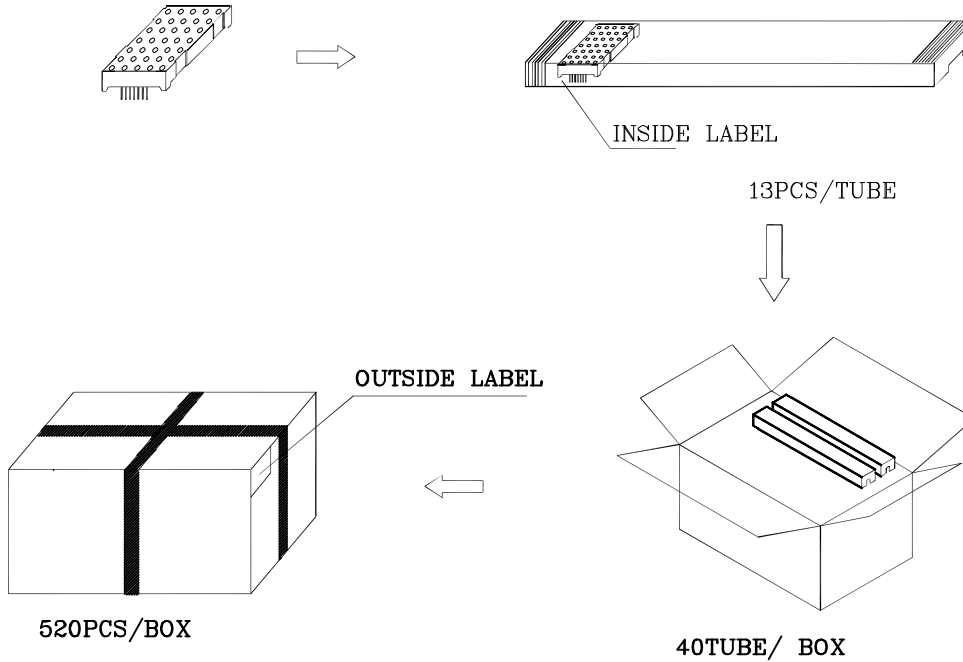6. No more than one wave soldering pass.

Remarks:

If special sorting is required (e.g. binning based on forward voltage, luminous intensity / luminous flux, or wavelength),

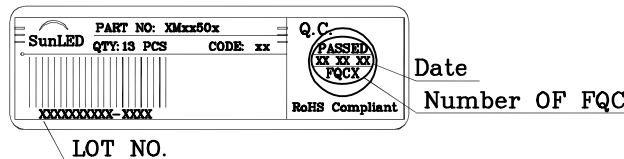the typical accuracy of the sorting process is as follows:

1. Wavelength: +/-1nm

2. Luminous Intensity / Luminous Flux: +/-15%

3. Forward Voltage: +/-0.1V

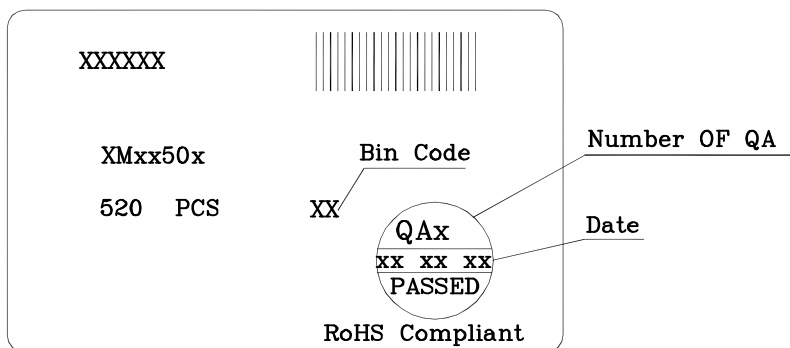Note: Accuracy may depend on the sorting parameters.

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**PACKING & LABEL SPECIFICATIONS**

P. 3/3



INSIDE LABEL

13PCS/TUBE

OUTSIDE LABEL

520PCS/BOX

40TUBE/ BOX

Inside Label On IC-tube



PART NO: XMxx50x
SunLED   QTY:13 PCS        CODE: xx
Q.C.
PASSED
XX XX XX
FQCX
RoHS Compliant
XXXXXXXXXX-XXXX
Date
Number OF FQC
LOT NO.

Outside Label On Box



XXXXXX

XMxx50x                    Bin Code          Number OF QA

520  PCS          XX

QAx
XX XX XX
PASSED

Date

RoHS Compliant

**TERMS OF USE**

1. Data presented in this document reflect statistical figures and should be treated as technical reference only.
2. Contents within this document are subject to improvement and enhancement changes without notice.
3. The product(s) in this document are designed to be operated within the electrical and environmental specifications indicated on the datasheet.
   User accepts full risk and responsibility when operating the product(s) beyond their intended specifications.
4. The product(s) described in this document are intended for electronic applications in which a person's life is not reliant upon the LED.  Please
   consult with a SunLED representative for special applications where the LED may have a direct impact on a person's life.
5. The contents within this document may not be altered without prior consent by SunLED.
6. Additional technical notes are available at http://www.SunLEDusa.com/TechnicalNotes.asp