

Part Number: KM-23EC-F

High Efficiency Red

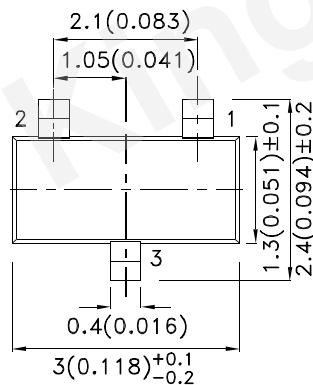
### Features

- SOT-23 package surface mount LED lamp.
- Low power consumption.
- Long life - solid state reliability.
- Package: 2000pcs / reel.
- Moisture sensitivity level : level 3.
- RoHS compliant.

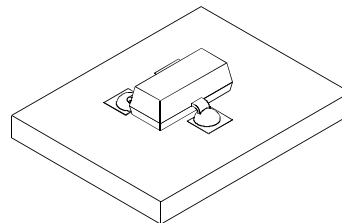
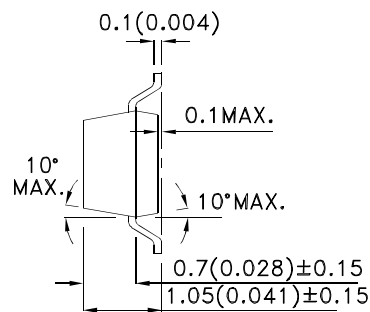
### Description

The High Efficiency Red source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode.

### Package Dimensions



- 1 ANODE
- 2 N.C.
- 3 CATHODE



#### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25(0.01") unless otherwise noted.
3. Lead spacing is measured where the lead emerge from the package.
4. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
5. The device has a single mounting surface. The device must be mounted according to the specifications.



## Selection Guide

| Part No.  | Emitting Color (Material)       | Lens Type   | Iv (mcd) [2]<br>@ 20mA |      | Viewing Angle [1] |
|-----------|---------------------------------|-------------|------------------------|------|-------------------|
|           |                                 |             | Min.                   | Typ. | 2θ1/2             |
| KM-23EC-F | High Efficiency Red (GaAsP/GaP) | Water Clear | 5                      | 12   | 170°              |
|           |                                 |             | *3                     | *5   |                   |

### Notes:

1.  $\theta_{1/2}$  is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.

2. Luminous intensity / luminous Flux: +/-15%.

\* Luminous intensity value is traceable to CIE127-2007 standards.

## Electrical / Optical Characteristics at TA=25°C

| Symbol                | Parameter                | Emitting Color      | Typ. | Max. | Units | Test Conditions            |
|-----------------------|--------------------------|---------------------|------|------|-------|----------------------------|
| $\lambda_{peak}$      | Peak Wavelength          | High Efficiency Red | 627  |      | nm    | I <sub>F</sub> =20mA       |
| $\lambda_D$ [1]       | Dominant Wavelength      | High Efficiency Red | 617  |      | nm    | I <sub>F</sub> =20mA       |
| $\Delta\lambda_{1/2}$ | Spectral Line Half-width | High Efficiency Red | 45   |      | nm    | I <sub>F</sub> =20mA       |
| C                     | Capacitance              | High Efficiency Red | 15   |      | pF    | V <sub>F</sub> =0V; f=1MHz |
| V <sub>F</sub> [2]    | Forward Voltage          | High Efficiency Red | 2    | 2.5  | V     | I <sub>F</sub> =20mA       |
| I <sub>R</sub>        | Reverse Current          | High Efficiency Red |      | 10   | uA    | V <sub>R</sub> =5V         |

### Notes:

1. Wavelength: +/-1nm.

2. Forward Voltage: +/-0.1V.

3. Wavelength value is traceable to CIE127-2007 standards.

4. Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

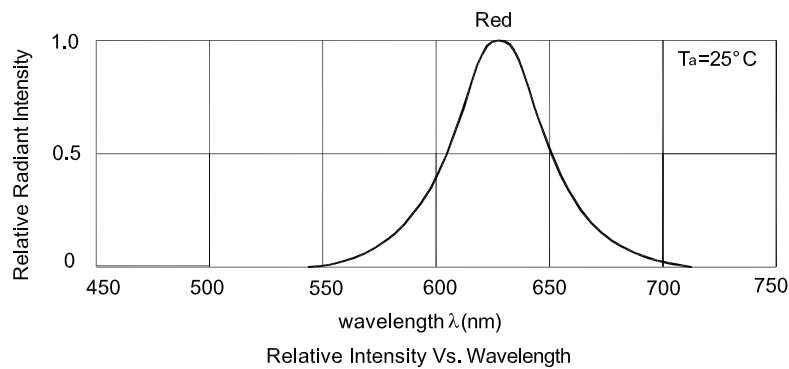
## Absolute Maximum Ratings at TA=25°C

| Parameter                | Values         | Units |
|--------------------------|----------------|-------|
| Power dissipation        | 75             | mW    |
| DC Forward Current       | 30             | mA    |
| Peak Forward Current [1] | 160            | mA    |
| Reverse Voltage          | 5              | V     |
| Operating Temperature    | -40°C To +85°C |       |
| Storage Temperature      | -40°C To +85°C |       |

### Notes:

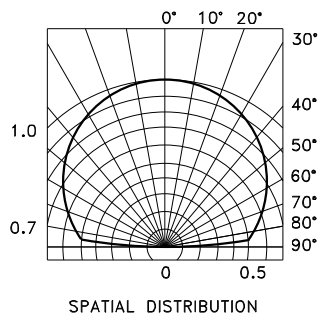
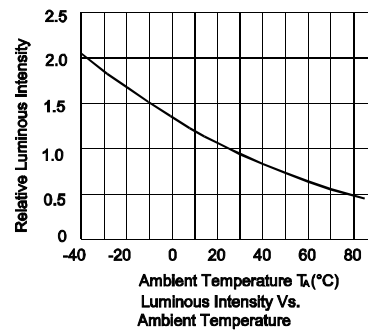
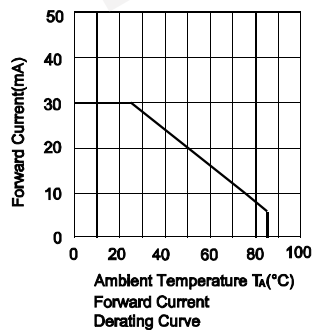
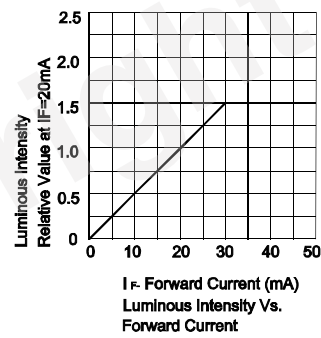
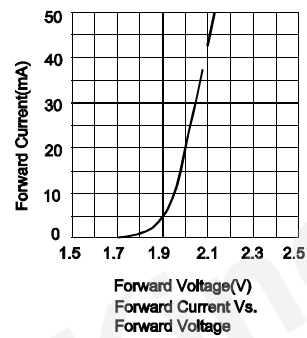
1. 1/10 Duty Cycle, 0.1ms Pulse Width.

2. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.



## High Efficiency Red

KM-23EC-F



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Reflow soldering is recommended and the soldering profile is shown below.  
Other soldering methods are not recommended as they might cause damage to the product.

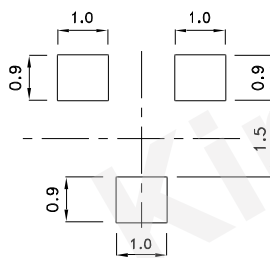
Reflow Soldering Profile For Lead-free SMT Process.



### NOTES:

1. We recommend the reflow temperature 245°C(+/-5°C). The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

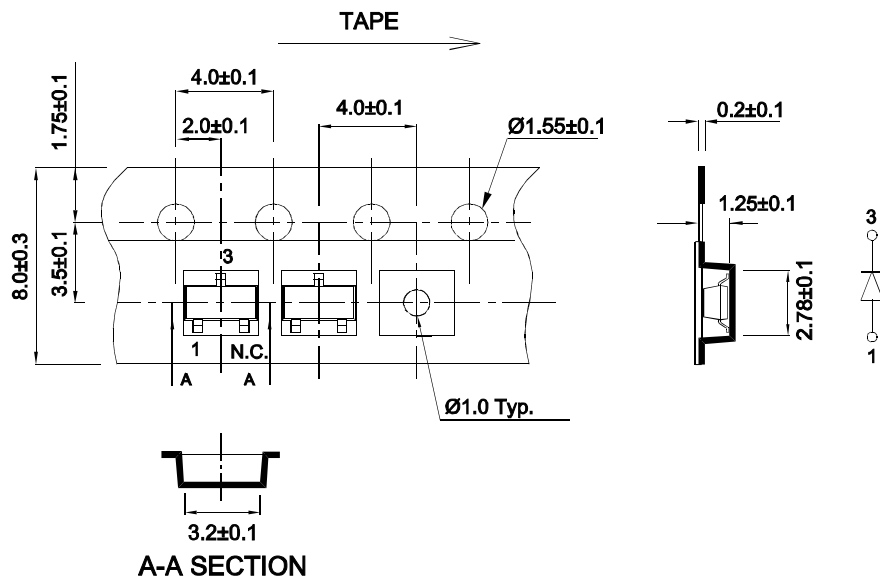
## Recommended Soldering Pattern (Units : mm; Tolerance: $\pm 0.1$ )



## Reel Dimension

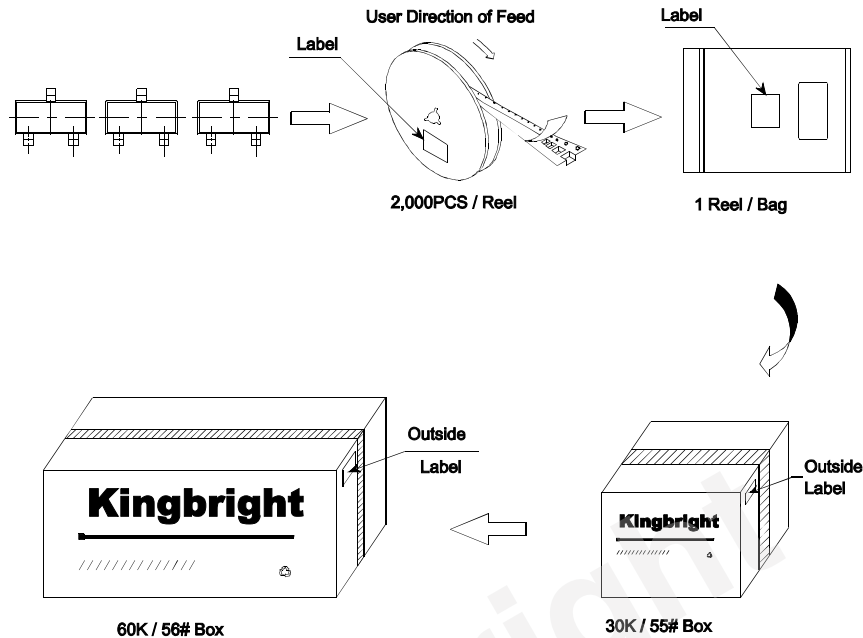



## Tape Dimensions (Units : mm)



## PACKING & LABEL SPECIFICATIONS

KM-23EC-F



|  |      |                           |
|--|------|---------------------------|
| <b>Kingbright</b>  |      |                           |
| P/NO: KM-23xxx   |      |                           |
| QTY: 2,000 pcs   | Q.C. | Q.C.<br>xxxxxxx<br>PASSED |
| S/N: XXXX  |      |                           |
| CODE: XXX  |      |                           |
| LOT NO:  |      |                           |
|  |      |                           |
| RoHS Compliant   |      |                           |

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1. The information included in this document reflects representative usage scenarios and is intended for technical reference only.
2. The part number, type, and specifications mentioned in this document are subject to future change and improvement without notice. Before production usage customer should refer to the latest datasheet for the updated specifications.
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