



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Part Number: KCDA02-105

Hyper Red

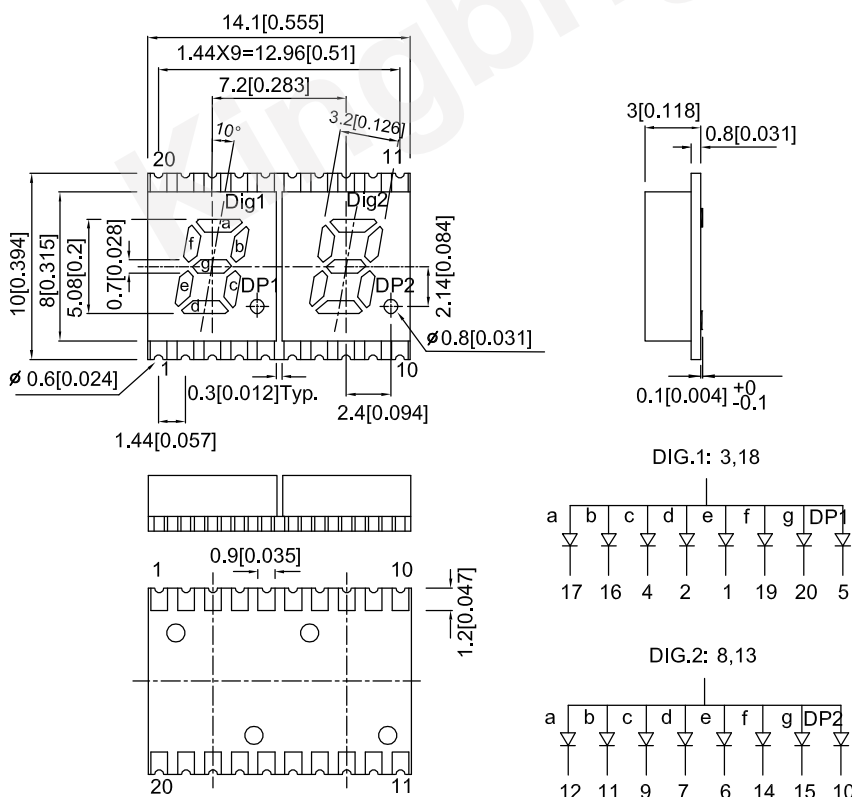
Features

- 0.2 inch digit height.
- Low current operation.
- Excellent character appearance.
- Mechanically rugged.
- Package :300pcs / reel.
- Gray face, white segment.
- Moisture sensitivity level : level 2a.
- RoHS compliant.

Descriptions

- The Hyper Red source color devices are made with AlGaInP on GaAs substrate Light Emitting Diode.
- Electrostatic discharge and power surge could damage the LEDs.
- It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.
- All devices, equipments and machineries must be electrically grounded.

Package Dimensions& Internal Circuit Diagram



Notes:

1. All dimensions are in millimeters (inches), Tolerance is $\pm 0.25(0.01)$ unless otherwise noted.
2. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
3. The gap between the reflector and PCB shall not exceed 0.25mm.



Selection Guide

| Part No. | Emitting Color (Material) | Lens Type | Iv (ucd) [1] @ 10mA | | Description |
|------------|---------------------------|----------------|------------------------|-------|------------------------------------|
| | | | Min. | Typ. | |
| KCDA02-105 | Hyper Red (AlGaInP) | White Diffused | 14000 | 30000 | Common Anode, Rt. Hand Decimal. |
| | | | *3600 | *8100 | |

Note:

1. 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 |
|-----------------------|--------------------------|----------------|------|------|-------|---------------------------|
| λ_{peak} | Peak Wavelength | Hyper Red | 645 | | nm | I _F =10mA |
| λ_D [1] | Dominant Wavelength | Hyper Red | 630 | | nm | I _F =10mA |
| $\Delta\lambda_{1/2}$ | Spectral Line Half-width | Hyper Red | 28 | | nm | I _F =10mA |
| C | Capacitance | Hyper Red | 35 | | pF | V _F =0V;f=1MHz |
| V _F [2] | Forward Voltage | Hyper Red | 1.85 | 2.5 | V | I _F =10mA |
| I _R | Reverse Current | Hyper Red | | 10 | uA | V _R =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.

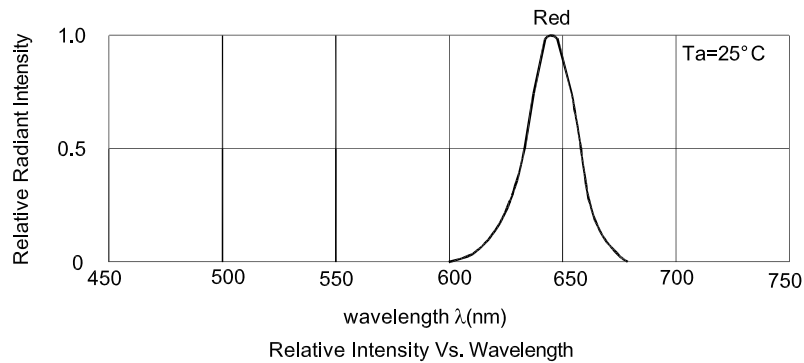
Absolute Maximum Ratings at TA=25°C

| Parameter | Values | Units |
|---|----------------|-------|
| Power dissipation | 75 | mW |
| DC Forward Current | 30 | mA |
| Peak Forward Current [1] | 185 | mA |
| Reverse Voltage | 5 | V |
| Electrostatic Discharge Threshold (HBM) | 3000 | V |
| Operating / Storage Temperature | -40°C To +85°C | |

Notes:

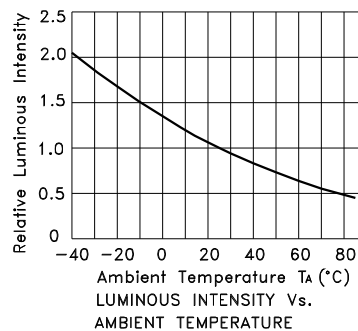
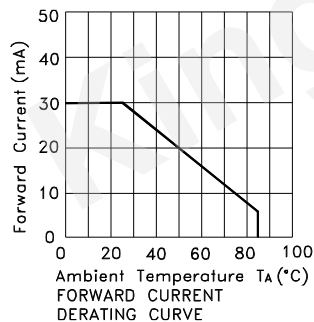
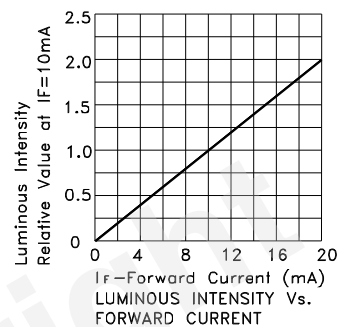
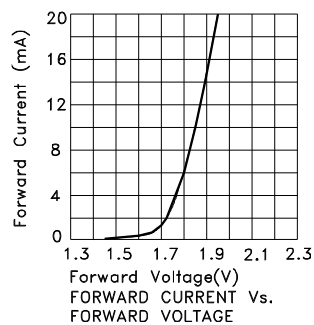
1. 1/10 Duty Cycle, 0.1ms Pulse Width.

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.



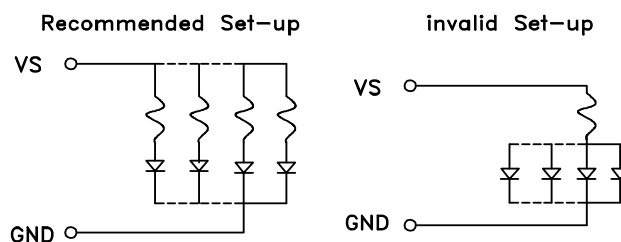
Hyper Red

KCDA02-105



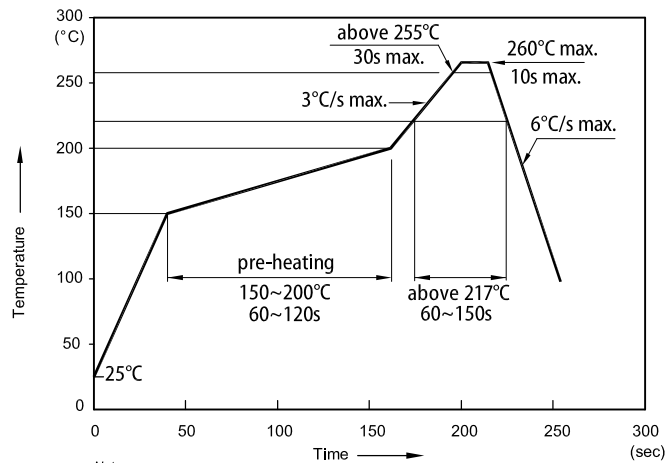
CIRCUIT DESIGN NOTES

1. Protective current-limiting resistors may be necessary to operate the Displays.
2. LEDs mounted in parallel should each be placed in series with its own current-limiting resistor.



KCDA02-105

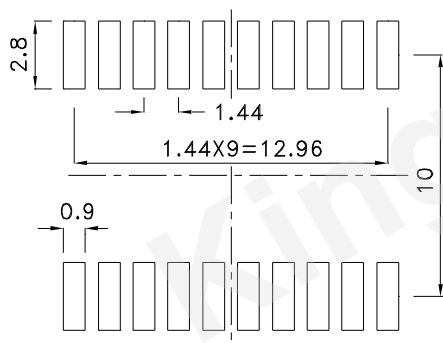
Reflow Soldering Profile for Lead-free SMD Process



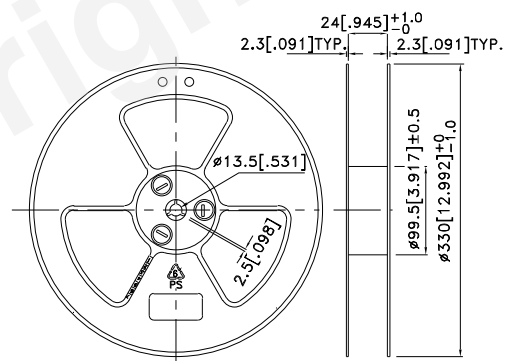
Notes:

1. Don't cause stress to the LEDs while it is exposed to high temperature.
2. The maximum number of reflow soldering passes is 2 times.
3. Reflow soldering is recommended. Other soldering methods are not recommended as they might cause damage to the product.

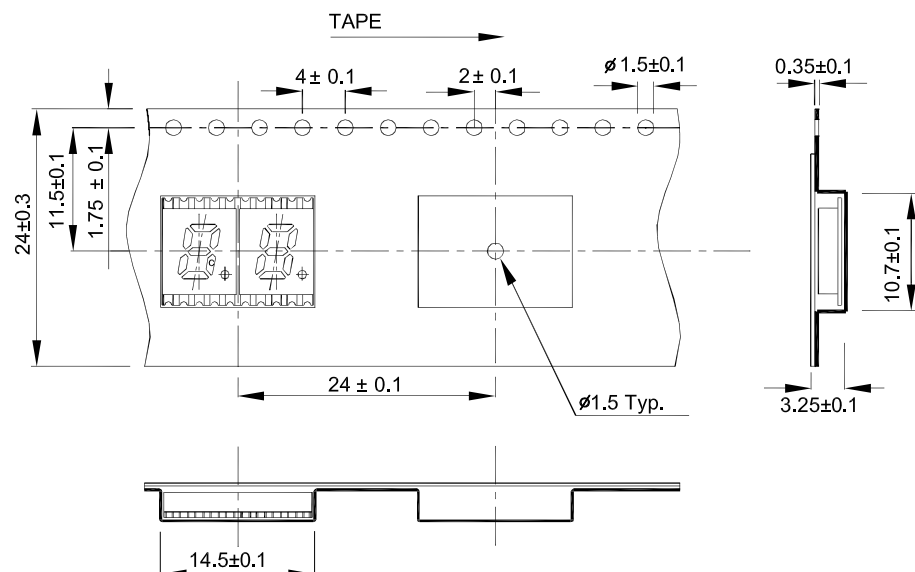
Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.15)



Reel Dimension

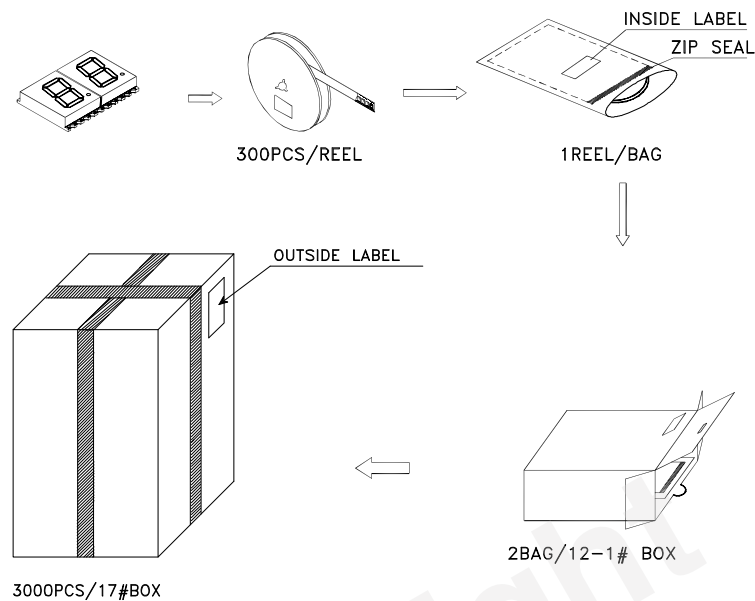


Tape Specifications (Units : mm)



PACKING & LABEL SPECIFICATIONS

KCDA02-105



Kingbright XXXXXXXXXXXX-XXXX

PINO: XXXXXXXX

QTY: XXXX pcs

S/N: XXXX

CODE: XXX

COUNTRY: CN QC DATE: XXX XX XXXX PASSED

LOT NO:

XXXXXXXXXX-XXXX

1 RoHS Compliant

XXXXXX

KCDX02

3000 PCS

Bin Code XX

Number OF QA

Date

QAx

PASSED

RoHS Compliant

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