



**ATTENTION**  
OBSERVE PRECAUTIONS  
FOR HANDLING  
ELECTROSTATIC  
DISCHARGE  
SENSITIVE  
DEVICES

Part Number: KCDC04-105  
Hyper Red

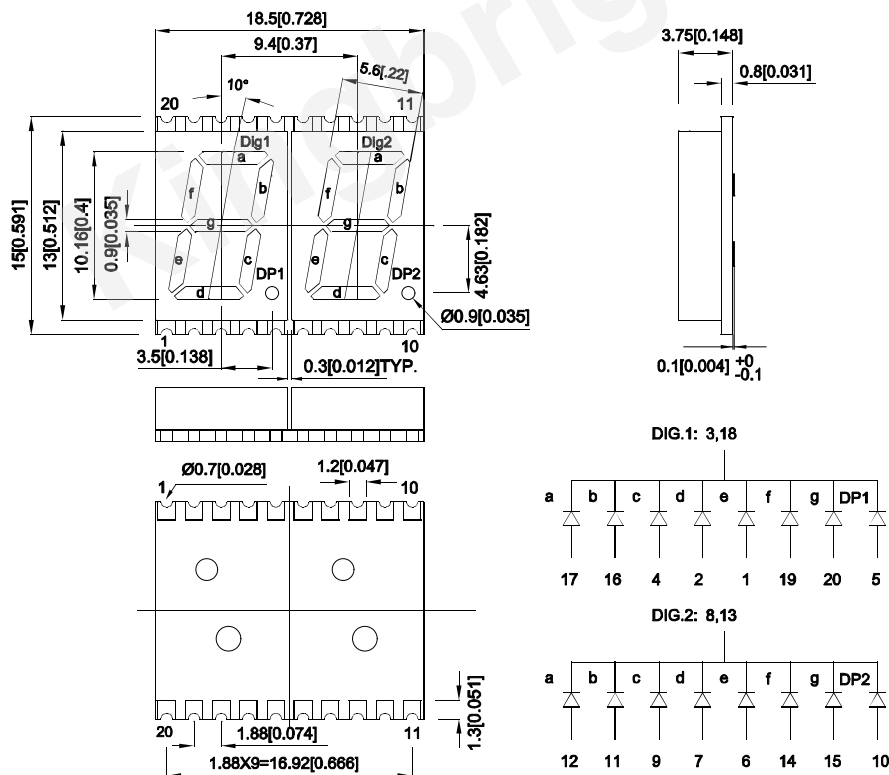
## Features

- 0.4 inch digit height.
- Low current operation.
- Excellent character appearance.
- Mechanically rugged.
- Gray face, white segment.
- Package: 250pcs/ reel.
- 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, equipment and machinery must be electrically grounded.

### Package Dimensions & Internal Circuit Diagram



Notes:

- 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.	
KCDC04-105	Hyper Red (AlGaInP)	White Diffused	21000	54000	Common Cathode, Rt. Hand Decimal
			*9000	*20000	

### Notes:

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
$\lambda_{peak}$	Peak Wavelength	Hyper Red	650		nm	I <sub>F</sub> =10mA
$\lambda_D$ [1]	Dominant Wavelength	Hyper Red	630		nm	I <sub>F</sub> =10mA
$\Delta\lambda_{1/2}$	Spectral Line Half-width	Hyper Red	28		nm	I <sub>F</sub> =10mA
C	Capacitance	Hyper Red	35		pF	V <sub>F</sub> =0V;f=1MHz
V <sub>F</sub> [2]	Forward Voltage	Hyper Red	1.85	2.5	V	I <sub>F</sub> =10mA
I <sub>R</sub>	Reverse Current	Hyper 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.

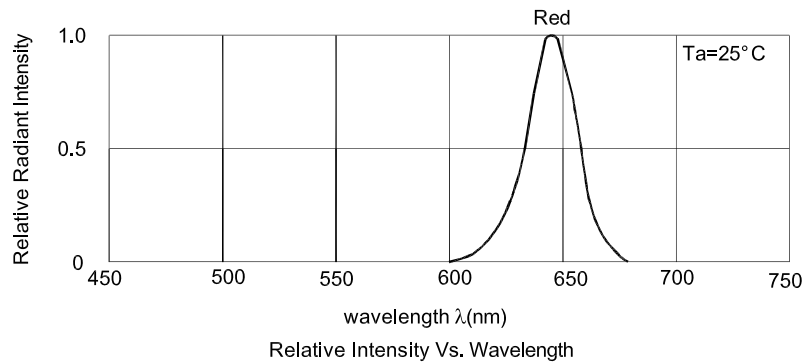
## Absolute Maximum Ratings at TA=25°C

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

### Notes:

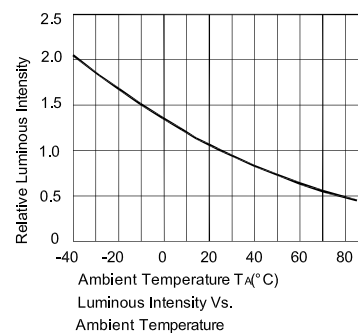
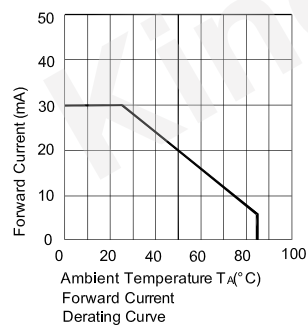
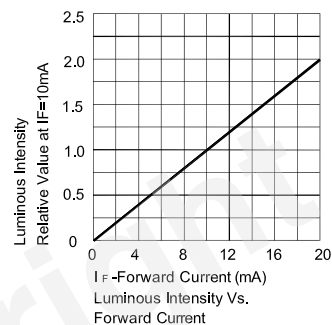
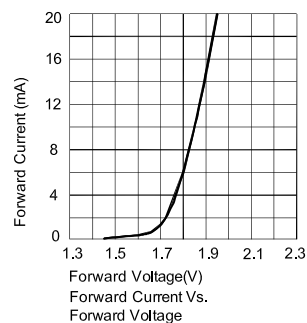
1. 1/10 Duty Cycle, 0.1ms Pulse Width.

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.



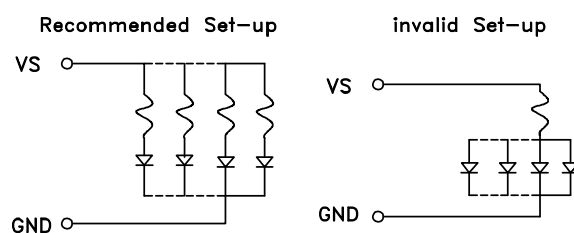
## Hyper Red

### KCDC04-105



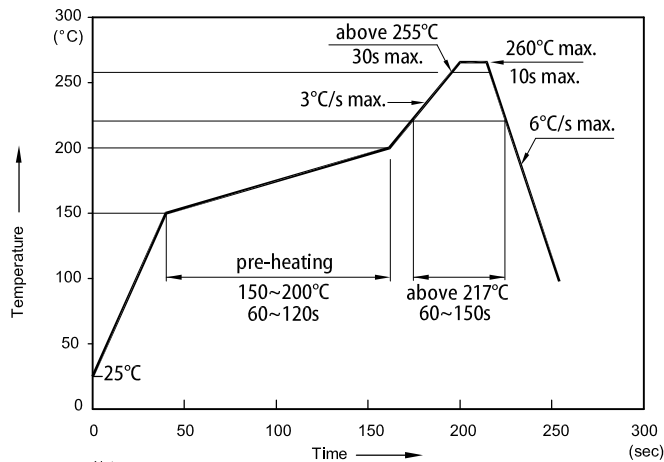
## CIRCUIT DESIGN NOTES

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.



## KCDC04-105

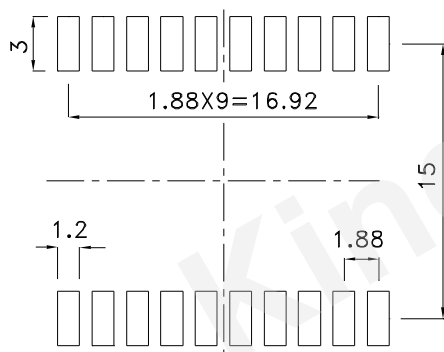
Reflow Soldering Profile for Lead-free SMD Process



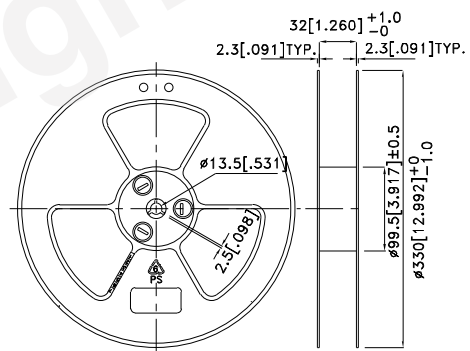
Notes:

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.

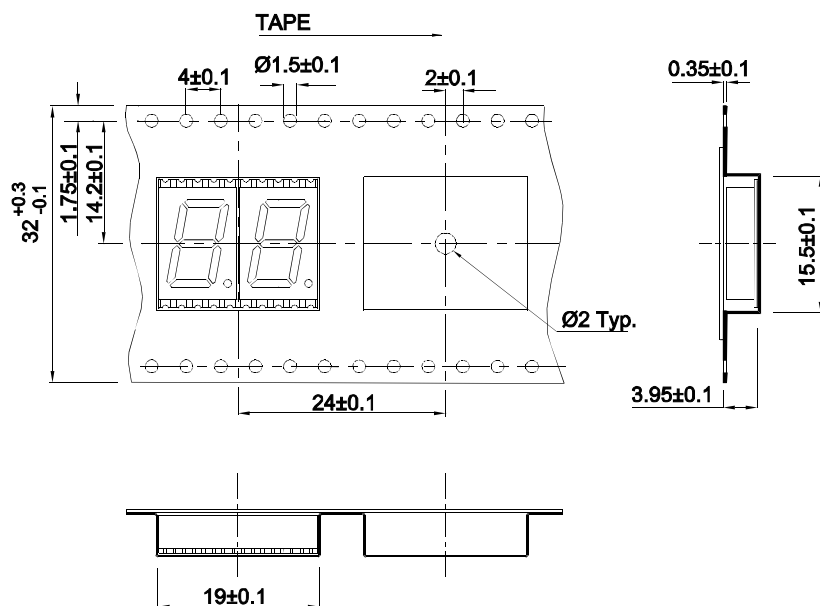
### Recommended Soldering Pattern (Units : mm; Tolerance: $\pm 0.15$ )



### Reel Dimension

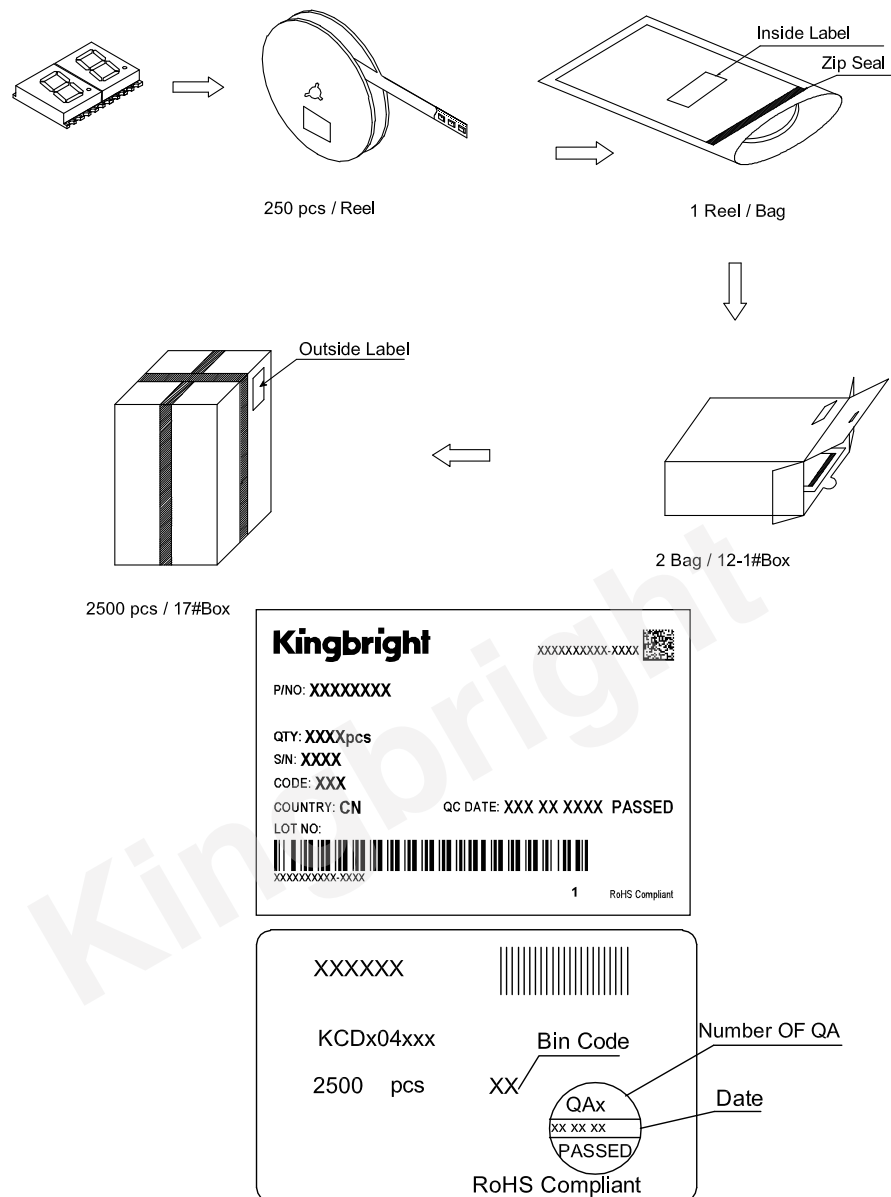


### Tape Specifications (Units : mm)



## PACKING & LABEL SPECIFICATIONS

## KCDC04-105



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