

# PRODUCT SPECIFICATION

*Part Number*  
**PDC562SM-CxMRGB1**

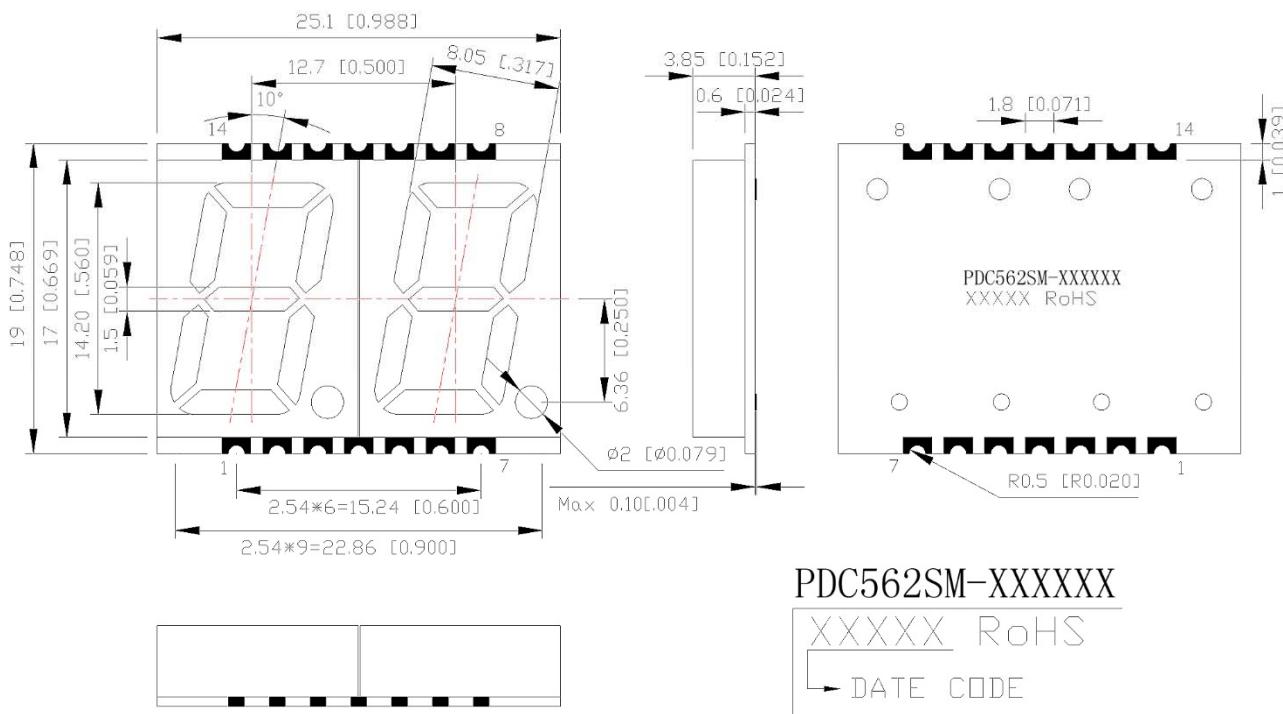
## Details

- .56" Dual Digit SMD Display
- Common Anode and Common Cathode
- Emitting Color: Red, Green, Blue
- AlInGaP or InGaN dice used
- Gray Face, White Segment

## Features

- Qualified according to JEDEC moisture sensitivity level 2A
- RoHS Compliant
- Easy mounting on PCB

## Mechanical Dimensions



## Notes:

1. Dimension in millimeter [inch], and tolerance is  $\pm 0.25$  [.010] unless otherwise noted.
2. Bending  $\leq$  Length \* 1%.
3. Specifications subject to change without notice.





## Device Selection Guide

Model Number		Chip	
Common Anode	Common Cathode	Material	Emitting Color
PDC562SM-CAMRGB1	PDC562SM-CCMRGB1	AlInGaP	Orange-Red
		InGaN	Green
		InGaN	Blue

### Absolute Maximum Ratings at Ta=25 °C

#### Orange-Red

Parameter	Symbol	Rating	Unit
Power Dissipation per Dice	P <sub>AD</sub>	70	mW
Derating Liner from 25°C per Dice	--	0.33	mA/°C
Continuous Forward Current Per Dice	I <sub>AF</sub>	25	mA
Peak Current Per Dice (duty cycle 1/10, 1KHz)	I <sub>PF</sub>	90	mA
Reverse Voltage Per Dice	V <sub>R</sub>	5	V
Operating Temperature	T <sub>opr</sub>	-40~+105	°C
Storage Temperature	T <sub>stg</sub>	-40~+105	°C

#### Green

Parameter	Symbol	Rating	Unit
Power Dissipation per Dice	P <sub>AD</sub>	114	mW
Derating Liner from 25°C per Dice	--	0.4	mA/°C
Continuous Forward Current Per Dice	I <sub>AF</sub>	30	mA
Peak Current Per Dice (duty cycle 1/10, 1KHz)	I <sub>PF</sub>	100	mA
Reverse Voltage Per Dice	V <sub>R</sub>	5	V
Electrostatic Discharge (HBM)	ESD	1000	V
Operating Temperature	T <sub>opr</sub>	-40~+105	°C
Storage Temperature	T <sub>stg</sub>	-40~+105	°C

#### Blue

Parameter	Symbol	Rating	Unit
Power Dissipation per Dice	P <sub>AD</sub>	114	mW
Derating Liner from 25°C per Dice	--	0.4	mA/°C
Continuous Forward Current Per Dice	I <sub>AF</sub>	30	mA
Peak Current Per Dice (duty cycle 1/10, 1KHz)	I <sub>PF</sub>	100	mA
Reverse Voltage Per Dice	V <sub>R</sub>	5	V
Electrostatic Discharge (HBM)	ESD	1000	V
Operating Temperature	T <sub>opr</sub>	-40~+105	°C
Storage Temperature	T <sub>stg</sub>	-40~+105	°C



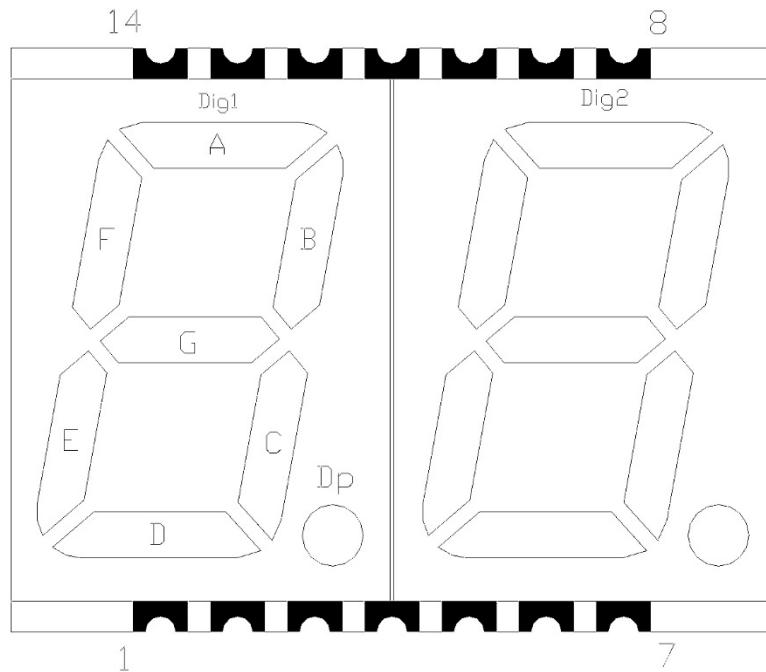
*Electrical and Optical Characteristics at Ta=25 °C*

<b>Orange-Red</b>						
<b>Parameter</b>	<b>Symbol</b>	<b>Min.</b>	<b>Typ.</b>	<b>Max.</b>	<b>Unit</b>	<b>Condition</b>
Forward Voltage Per Segment	<b>VF</b>	--	2	2.8	V	IF=20mA
Luminous Intensity Per Segment	<b>Iv</b>	--	8		mcd	IF=10mA
Peak Emission Wavelength	<b>λP</b>	--	632		nm	IF=20mA
Dominant Wavelength	<b>λd</b>	--	625		nm	IF=20mA
Spectrum Radiation Bandwidth	<b>Δλ</b>	--	20		nm	IF=20mA
Reverse Current	<b>IR</b>	--	--	100	μA	VR=5V
Luminous Intensity Matching Ratio	<b>Iv-m</b>	--	--	2:1	--	IF=10mA

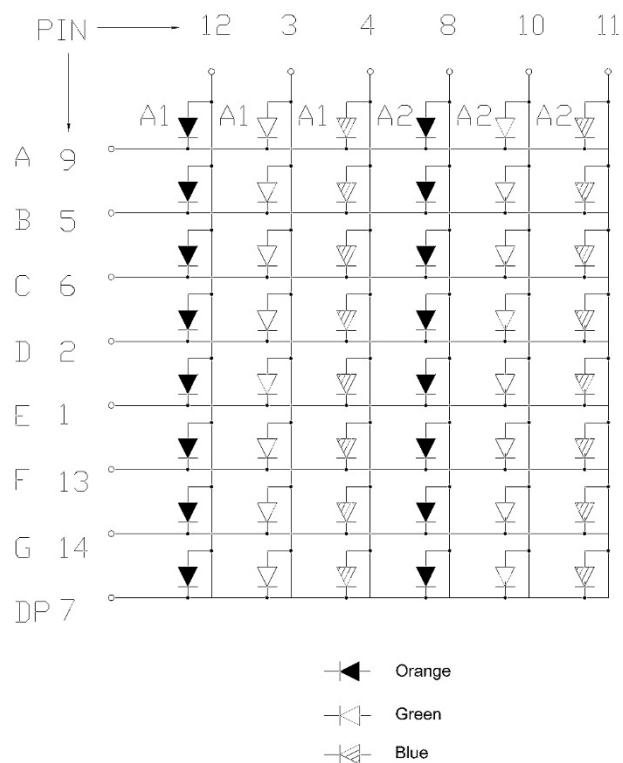
<b>Green</b>						
<b>Parameter</b>	<b>Symbol</b>	<b>Min.</b>	<b>Typ.</b>	<b>Max.</b>	<b>Unit</b>	<b>Condition</b>
Forward Voltage Per Segment	<b>VF</b>	--	3.2	3.8	V	IF=20mA
Luminous Intensity Per Segment	<b>Iv</b>	--	70		mcd	IF=10mA
Dominant Wavelength	<b>λd</b>	--	525		nm	IF=20mA
Spectrum Radiation Bandwidth	<b>Δλ</b>	--	30		nm	IF=20mA
Reverse Current	<b>IR</b>	--	--	100	μA	VR=5V
Luminous Intensity Matching Ratio	<b>Iv-m</b>	--	--	2:1	--	IF=10mA

<b>Blue</b>						
<b>Parameter</b>	<b>Symbol</b>	<b>Min.</b>	<b>Typ.</b>	<b>Max.</b>	<b>Unit</b>	<b>Condition</b>
Forward Voltage Per Segment	<b>VF</b>	--	3.2	3.8	V	IF=20mA
Luminous Intensity Per Segment	<b>Iv</b>	--	12		mcd	IF=10mA
Dominant Wavelength	<b>λd</b>	--	470		nm	IF=20mA
Spectrum Radiation Bandwidth	<b>Δλ</b>	--	30		nm	IF=20mA
Reverse Current	<b>IR</b>	--	--	100	μA	VR=5V
Luminous Intensity Matching Ratio	<b>Iv-m</b>	--	--	2:1	--	IF=10mA

**All Light On Segments Feature & Pad Position**



**Internal Circuit Diagram**



### **Typical Electrical / Optical Characteristic Curves**

- **Orange-Red**

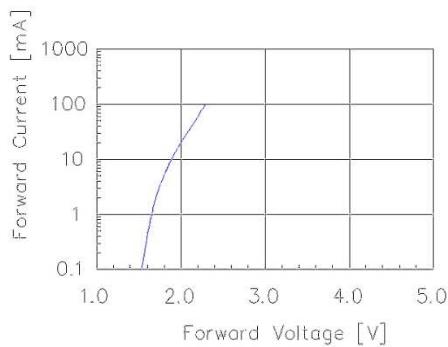


Fig 1. Forward Current vs. Forward Voltage

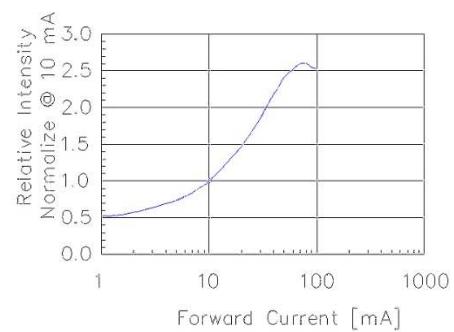


Fig 2. Relative Intensity vs. Forward Current

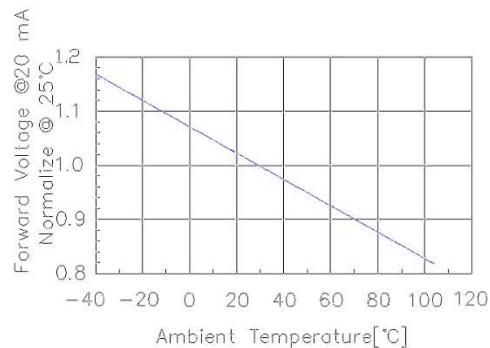


Fig 3. Forward Voltage vs. Temperature

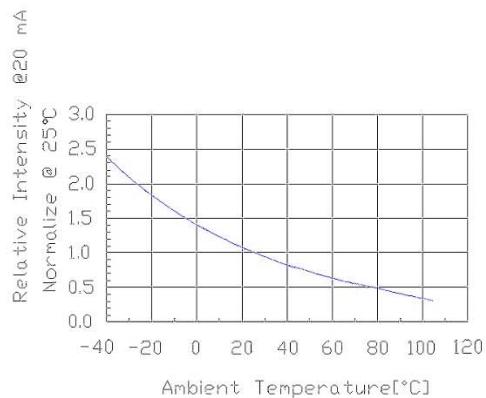
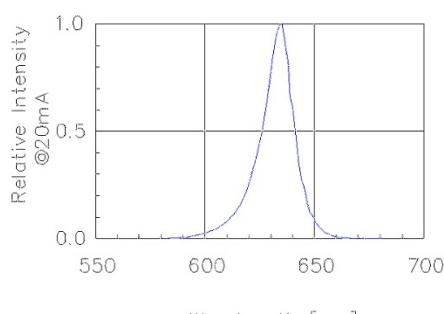


Fig 4. Relative Intensity vs. Temperature



### **Typical Electrical / Optical Characteristic Curves**

- **Green**

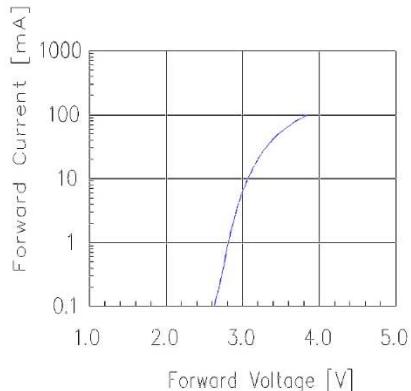


Fig 1. Forward Current vs. Forward Voltage

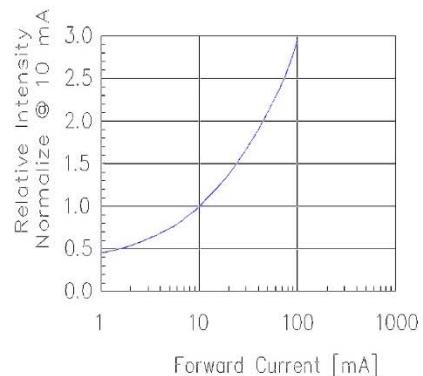


Fig 2. Relative Intensity vs. Forward Current

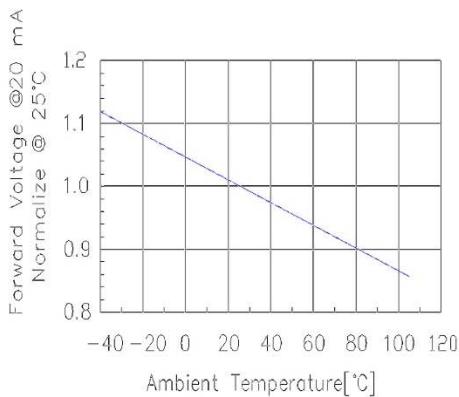


Fig 3. Forward Voltage vs. Temperature

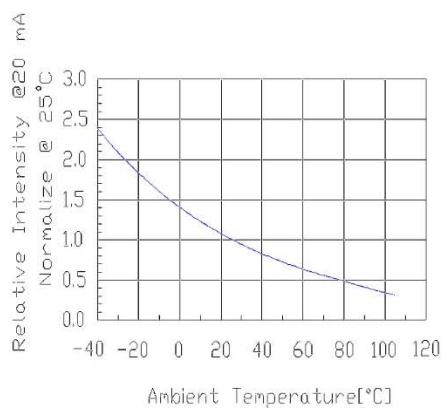


Fig 4. Relative Intensity vs. Temperature

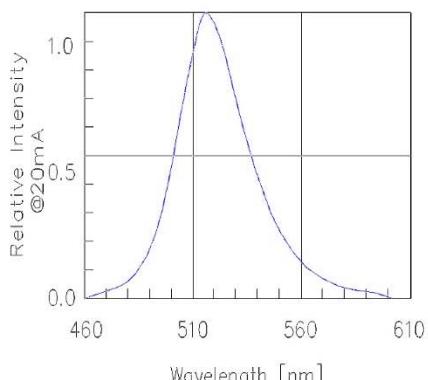


Fig 5. Relative Intensity vs. Wavelength

### **Typical Electrical / Optical Characteristic Curves**

- **Blue**

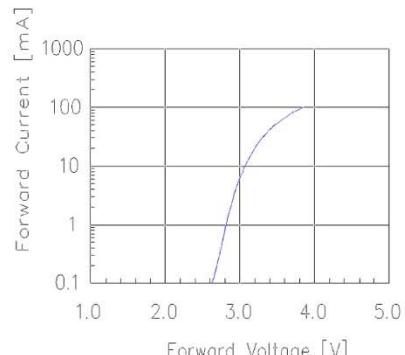


Fig 1. Forward Current vs. Forward Voltage

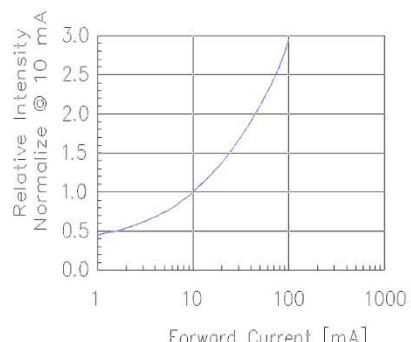


Fig 2. Relative Intensity vs. Forward Current

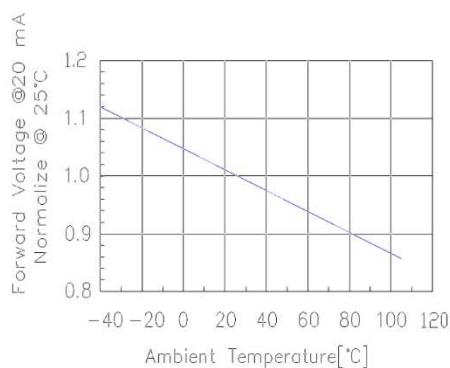


Fig 3. Forward Voltage vs. Temperature

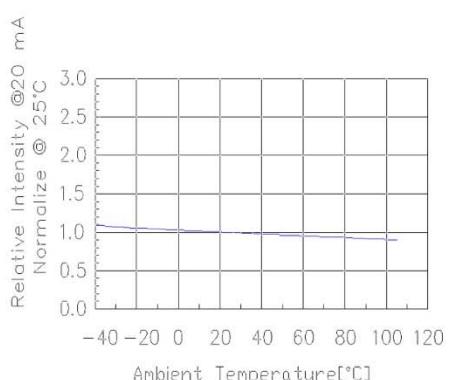


Fig 4. Relative Intensity vs. Temperature

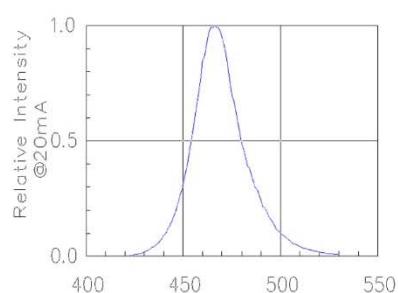
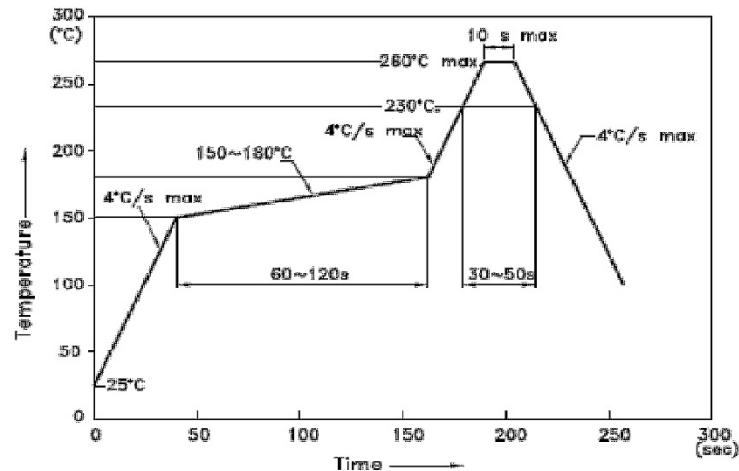


Fig 5. Relative Intensity vs. Wavelength

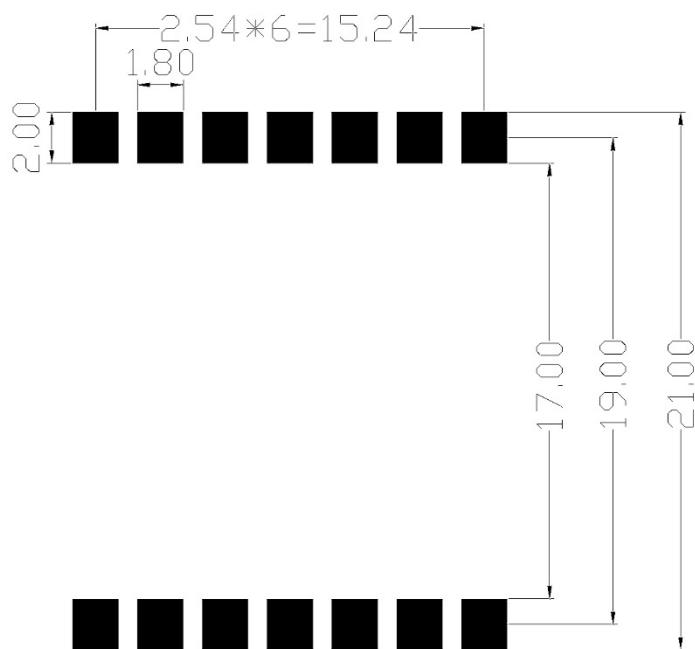
### *IR Reflow Temperature / Time*



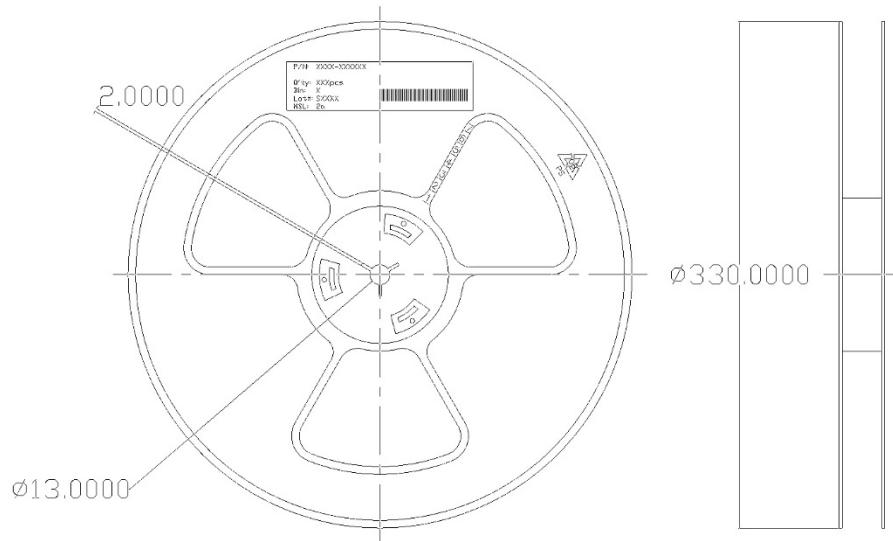
Notes:

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

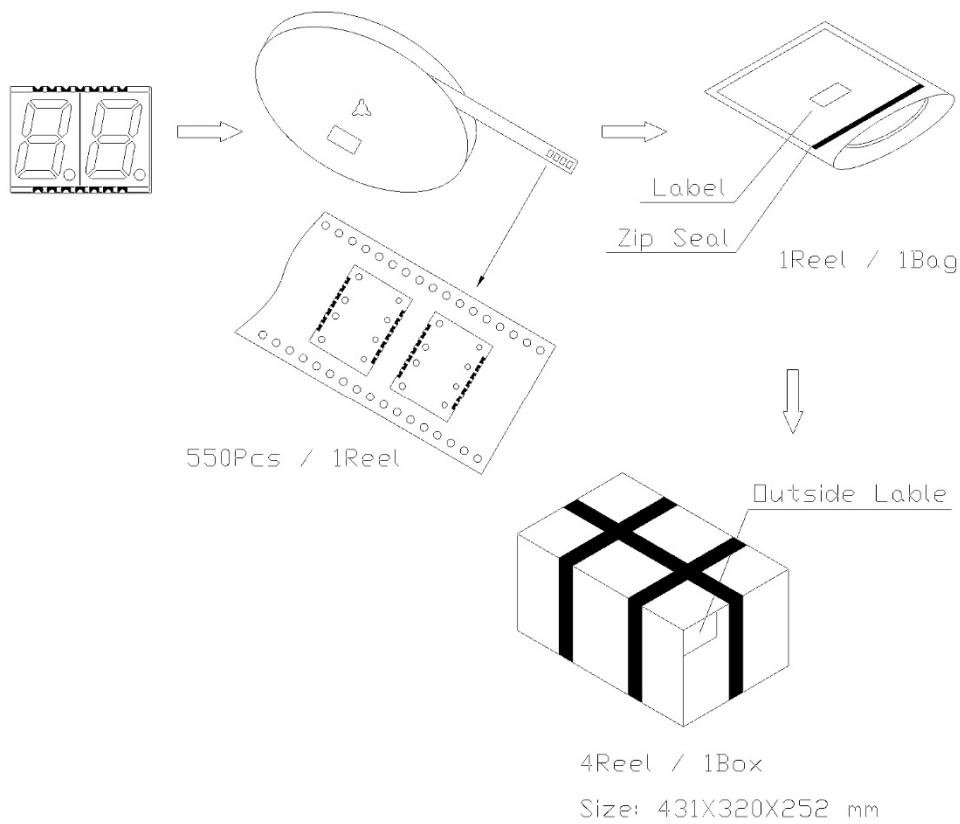
### *Soldering Pad Size*



### **Reel Dimensions**



### **Packing and Label Specifications**





	Approved By	Checked By	Prepared By
<b>Customer Approval Signatures</b>			

## **Record Of Revisions**