PRODUCT SPECIFICATION

Part Number

PDC563SM-CxMRGB1

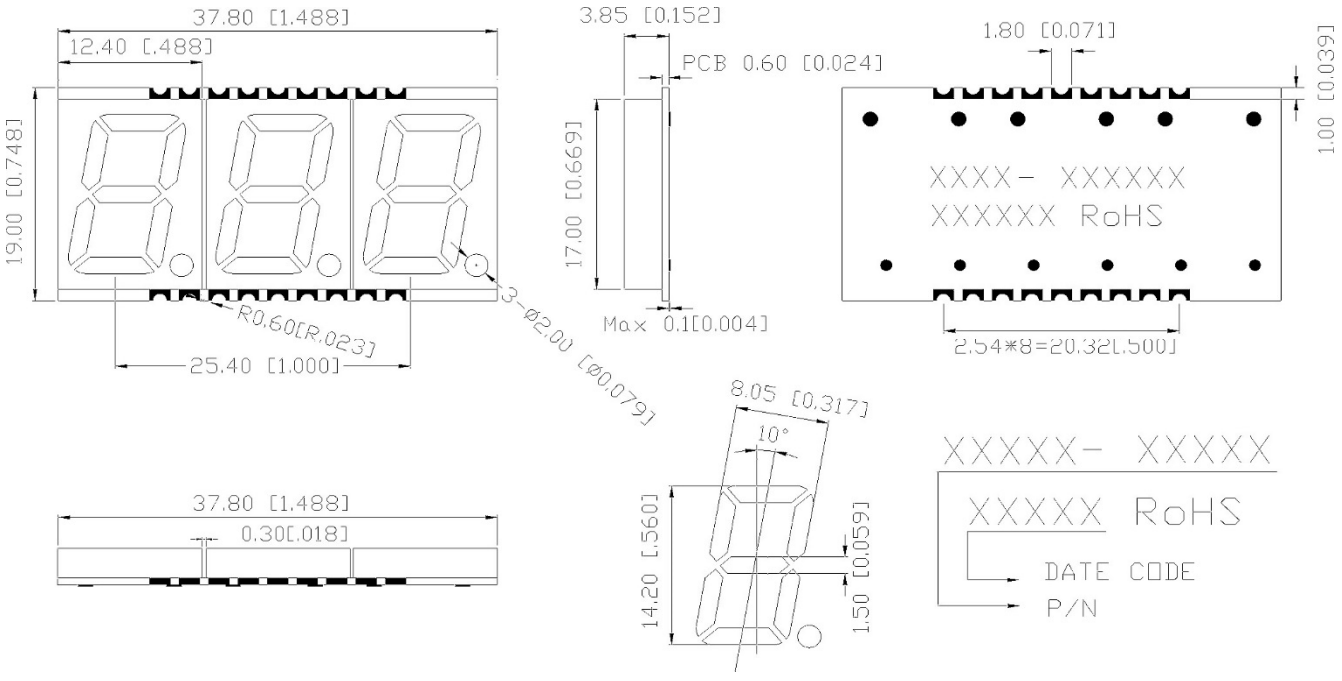
Details

- .56” (14.2mm) Triple Digit SMD Display
- Common Anode or 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 ±0.25 [.010] unless otherwise noted.
2. Bending≤Length*1%.
3. Specifications subject to change without notice

Device Selection Guide

Model Number		Chip	
Common Anode	**Common Cathode**	**Material**	**Emitting Color**
PDC563SM-CAMRGB1	PDC563SM-CCMRGB1	AlInGaP	Orange-Red
		InGaN	Green
		InGaN	Blue

Absolute Maximum Ratings at Ta=25℃

Orange-Red			
Parameter	**Symbol**	**Rating**	**Unit**
Power Dissipation per Dice	**P**AD	70	mW
Derating Liner from 25℃ per Dice	--	0.33	mA/℃
Continuous Forward Current Per Dice	**I**AF	25	mA
Peak Current Per Dice (duty cycle 1/10, 1KHz)	IPF	90	mA
Reverse Voltage Per Dice	VR	5	V
Operating Temperature	Topr	-40~+105	℃
Storage Temperature	Tstg	-40~+105	℃

Green			
Parameter	**Symbol**	**Rating**	**Unit**
Power Dissipation per Dice	**P**AD	114	mW
Derating Liner from 25℃ per Dice	--	0.4	mA/℃
Continuous Forward Current Per Dice	**I**AF	30	mA
Peak Current Per Dice (duty cycle 1/10, 1KHz)	IPF	100	mA
Reverse Voltage Per Dice	VR	5	V
Electrostatic Discharge (HBM)	ESD	1000	V
Operating Temperature	Topr	-40~+105	℃
Storage Temperature	Tstg	-40~+105	℃

Blue			
Parameter	**Symbol**	**Rating**	**Unit**
Power Dissipation per Dice	**P**AD	114	mW
Derating Liner from 25℃ per Dice	--	0.4	mA/℃
Continuous Forward Current Per Dice	**I**AF	30	mA
Peak Current Per Dice (duty cycle 1/10, 1KHz)	IPF	100	mA
Reverse Voltage Per Dice	VR	5	V
Electrostatic Discharge (HBM)	ESD	1000	V
Operating Temperature	Topr	-40~+105	℃
Storage Temperature	Tstg	-40~+105	℃

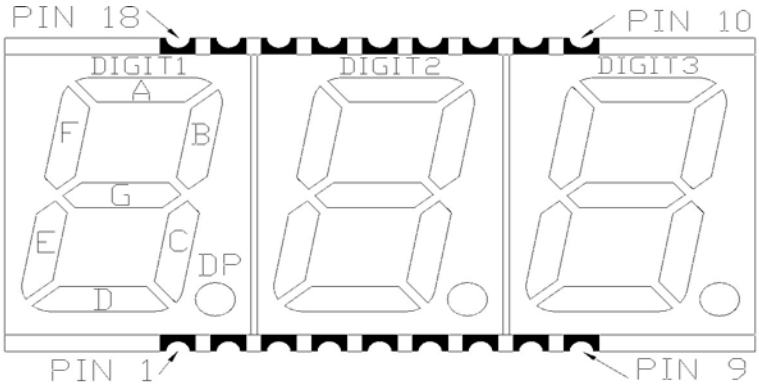
Electrical and Optical Characteristics at Ta=25℃

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

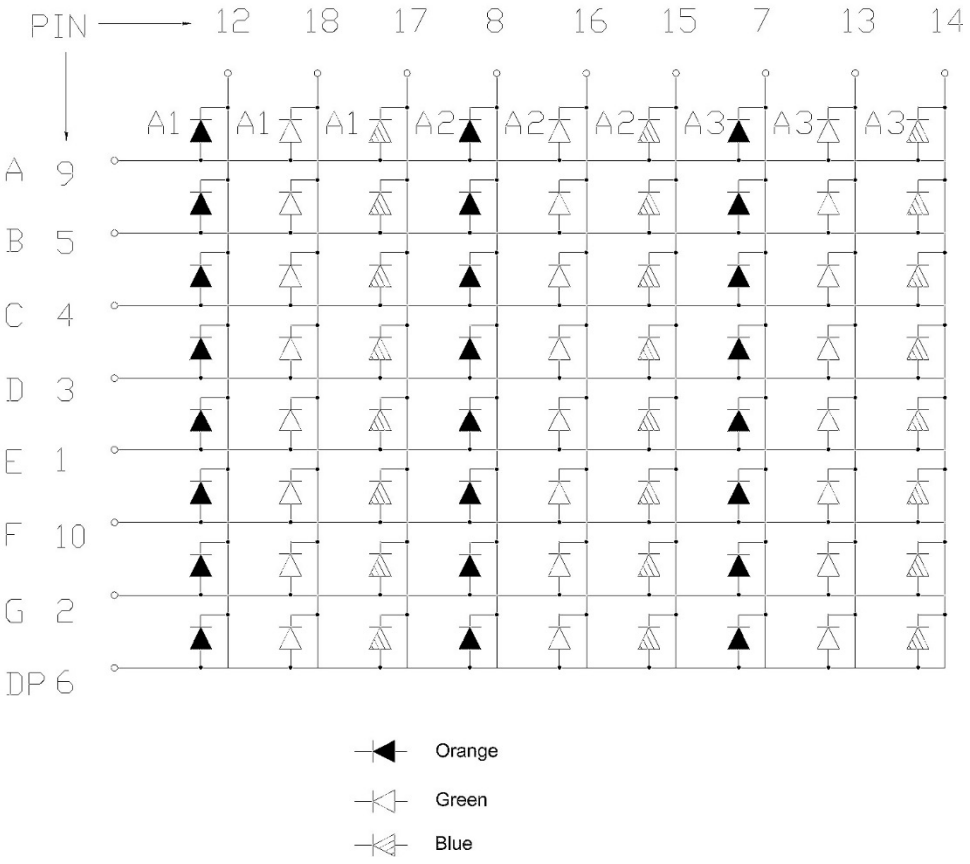
Green						
Parameter	**Symbol**	**Min.**	**Typ.**	**Max.**	**Unit**	**Condition**
Forward Voltage Per Segment	**VF**	--	3.2	3.8	V	IF=20mA
Luminous Intensity Per Segment	**Iv**	--	70		mcd	IF=10mA
Dominant Wavelength	l**d**	--	525		nm	IF=20mA
Spectrum Radiation Bandwidth	Δλ	--	30		nm	IF=20mA
Reverse Current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

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

All Light On Segments Feature & Pad Position



Internal Circuit Diagram



Typical Electrical / Optical Characteristic Curves

- ***Orange-Red***

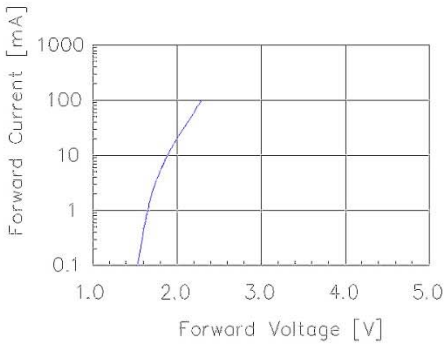


Fig 1. Forward Current vs. Forward Voltage

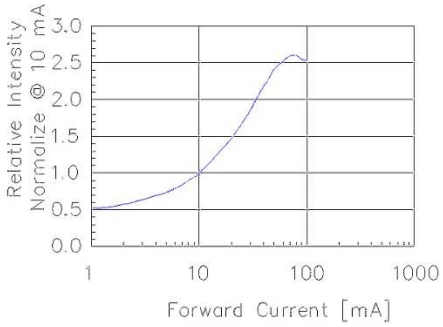


Fig 2. Relative Intensity vs. Forward Current

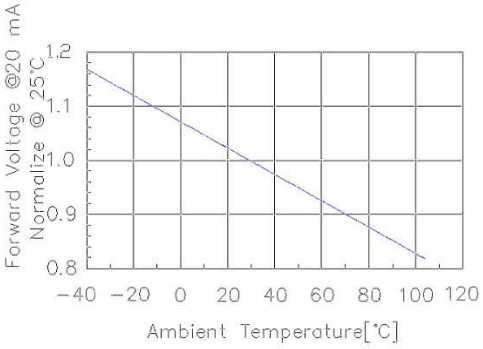


Fig 3. Forward Voltage vs. Temperature

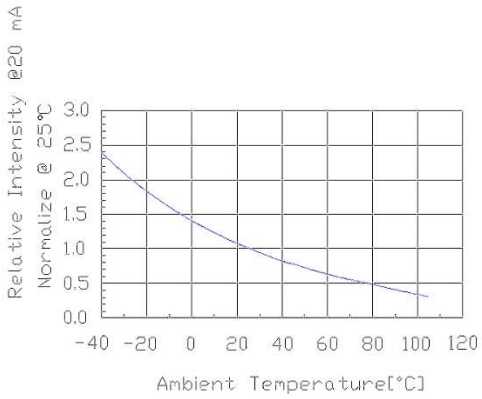
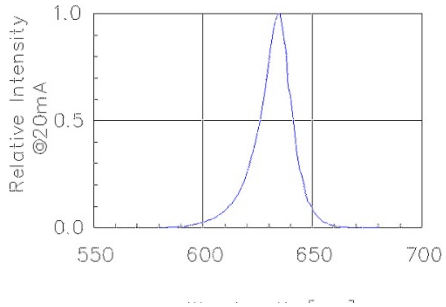


Fig 4. Relative Intensity vs. Temperature



Typical Electrical / Optical Characteristic Curves

- ***Green***

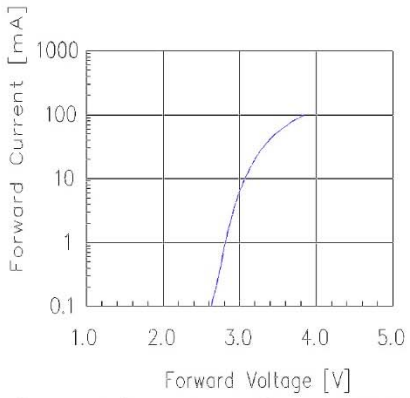


Fig 1. Forward Current vs. Forward Voltage

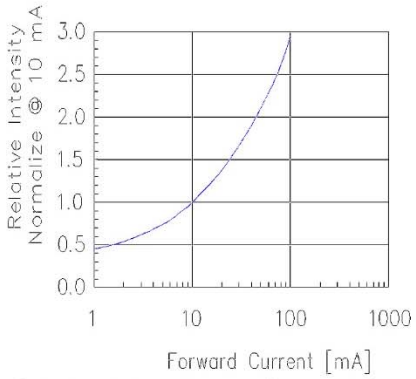


Fig 2. Relative Intensity vs. Forward Current

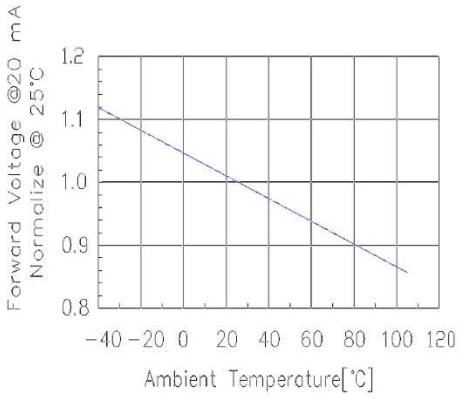


Fig 3. Forward Voltage vs. Temperature

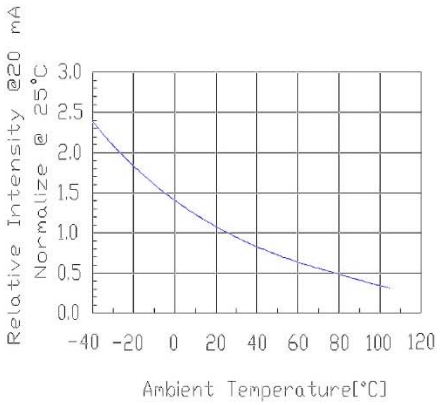


Fig 4. Relative Intensity vs. Temperature

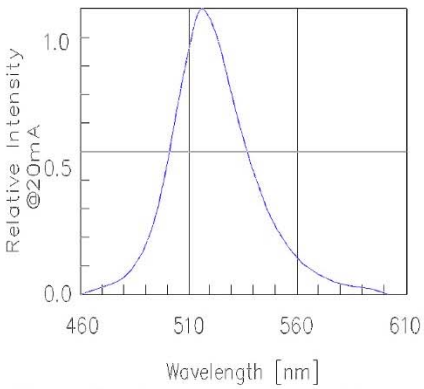


Fig 5. Relative Intensity vs. Wavelength

Typical Electrical / Optical Characteristic Curves

- ***Blue***

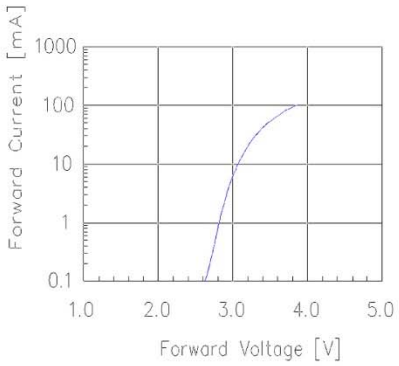


Fig 1. Forward Current vs. Forward Voltage

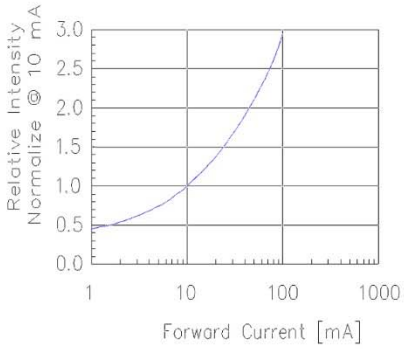


Fig 2. Relative Intensity vs. Forward Current

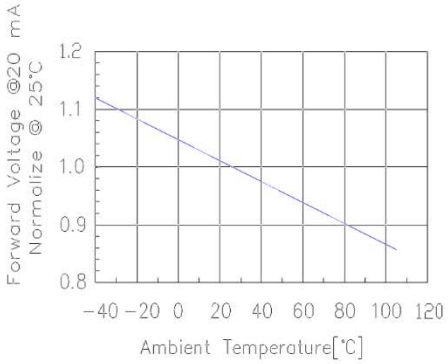


Fig 3. Forward Voltage vs. Temperature

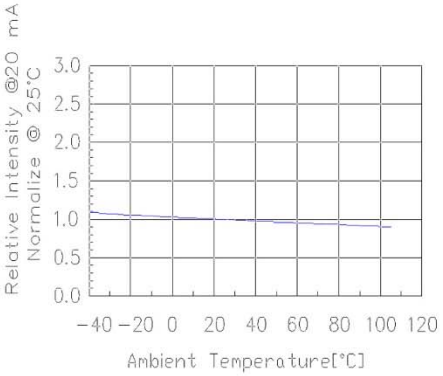


Fig 4. Relative Intensity vs. Temperature

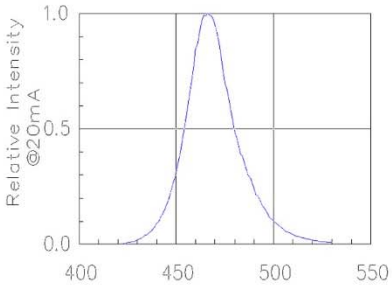
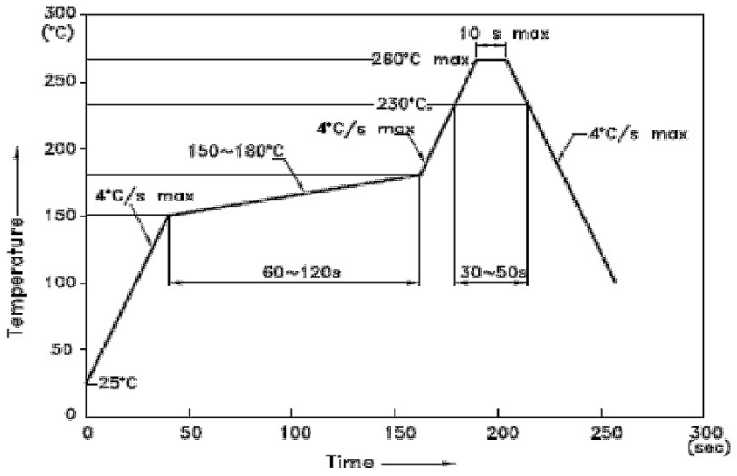


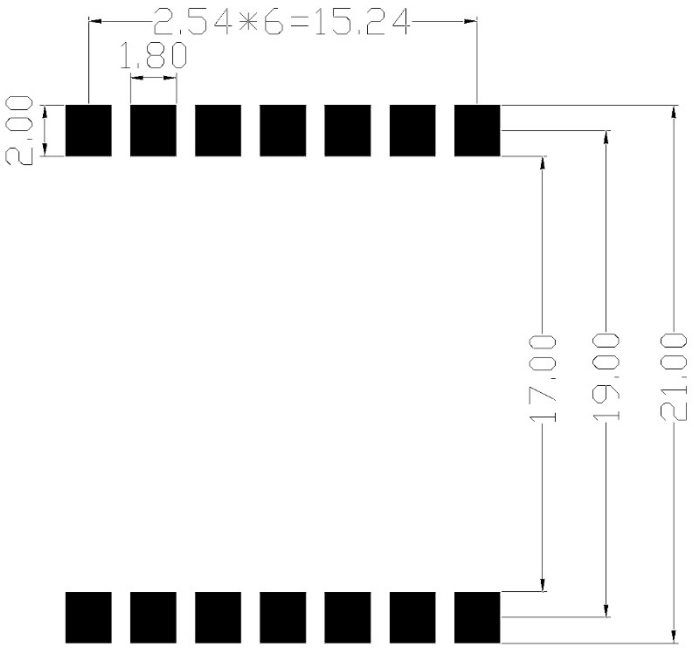
Fig 5.Relative Intensity vs. Wavelength

IR Reflow Temperature / Time

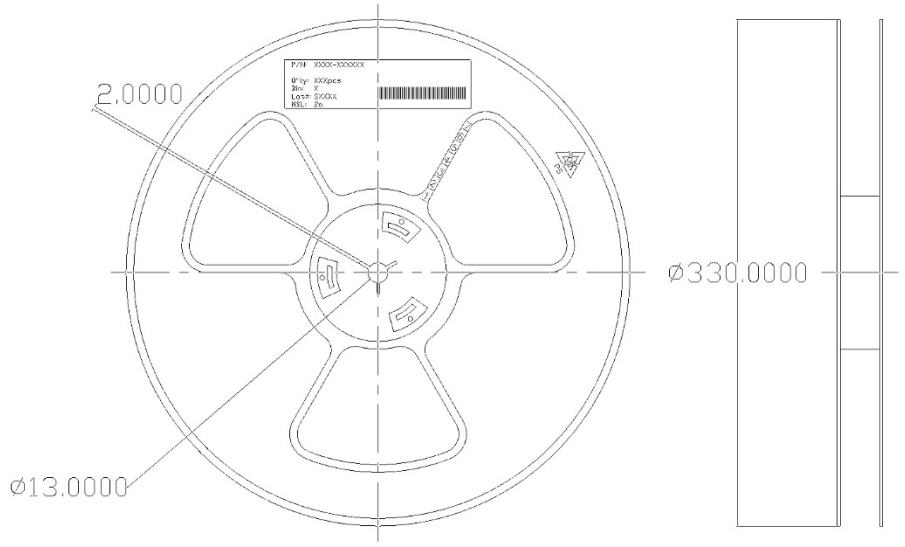


Notes:
1. We recommend reflow temp of 245℃ (+/- 5℃) Maximum soldering temp should be limited to 260℃
2. Do not cause stress to the epoxy resin while it is exposed to high temperature
3. Number of reflow process shall be 2 times or less

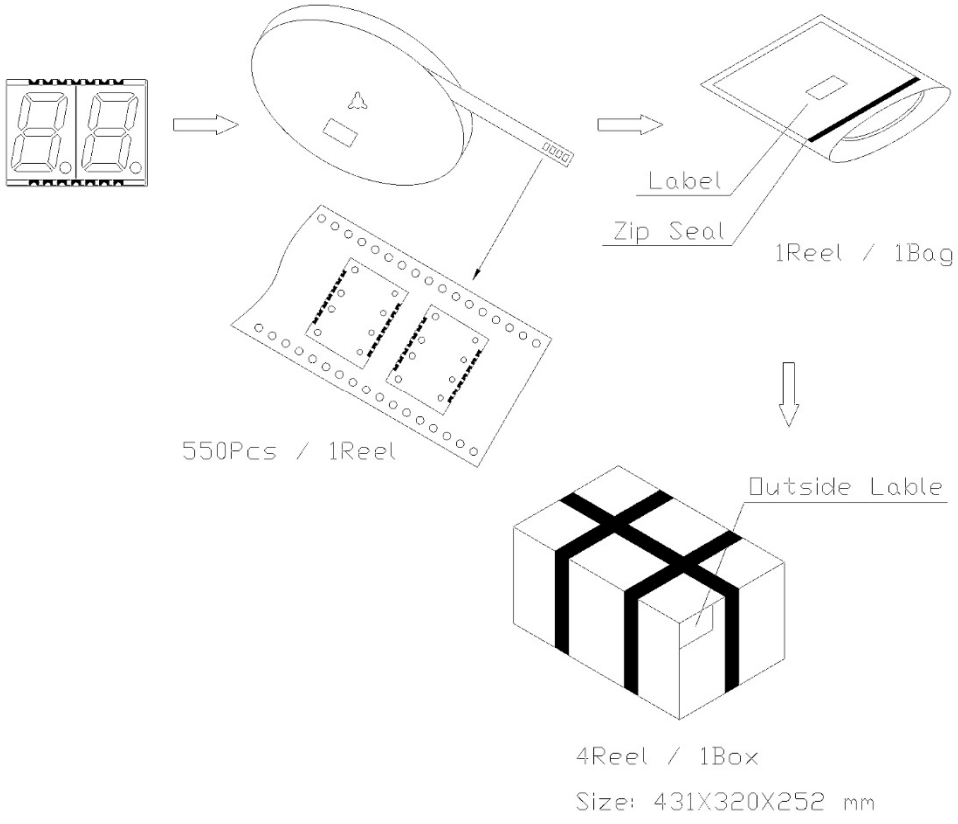
Soldering Pad Size



Reel Dimensions



Packing and Label Specifications



	Approved By	Checked By	Prepared By
Customer Approval Signatures			

Record Of Revisions			
Rev.	**Comments**	**Page**	**Date**
0	Released Spec	--	07/15/13