



WCN Opto Group Co., Limited

Customer Name:

Date:

2020-1-15

Part No:

WCN-SMLB-1515RY

Product Group Description:

Touch SMD LED Display

Customer Part No:

Approval Date:

Customer Confirmation

Approved by

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2020-1-15

Checked by

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2020-1-15

Prepared By

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2020-1-15

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1. Type No./Manufacture's Name

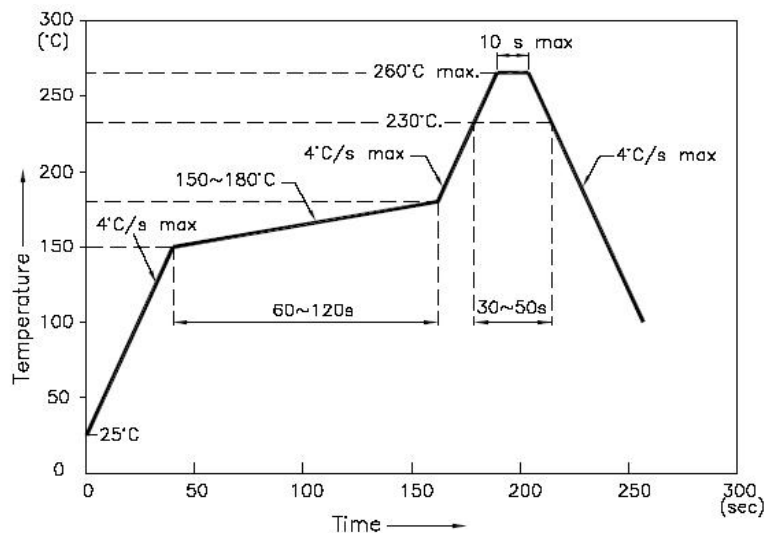
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2. Features:

- High Reliability
- Low Power Requirement
- Easy Assembly

3. Faction: Display Digit Characteristic**4. Soldering Conditions: Soldering Temp. 260 ± 5 °C, Soldering Time. 3~5 sec.**

Soldering Power <30 W.

5. Re-flow Temp/Time**NOTES:**

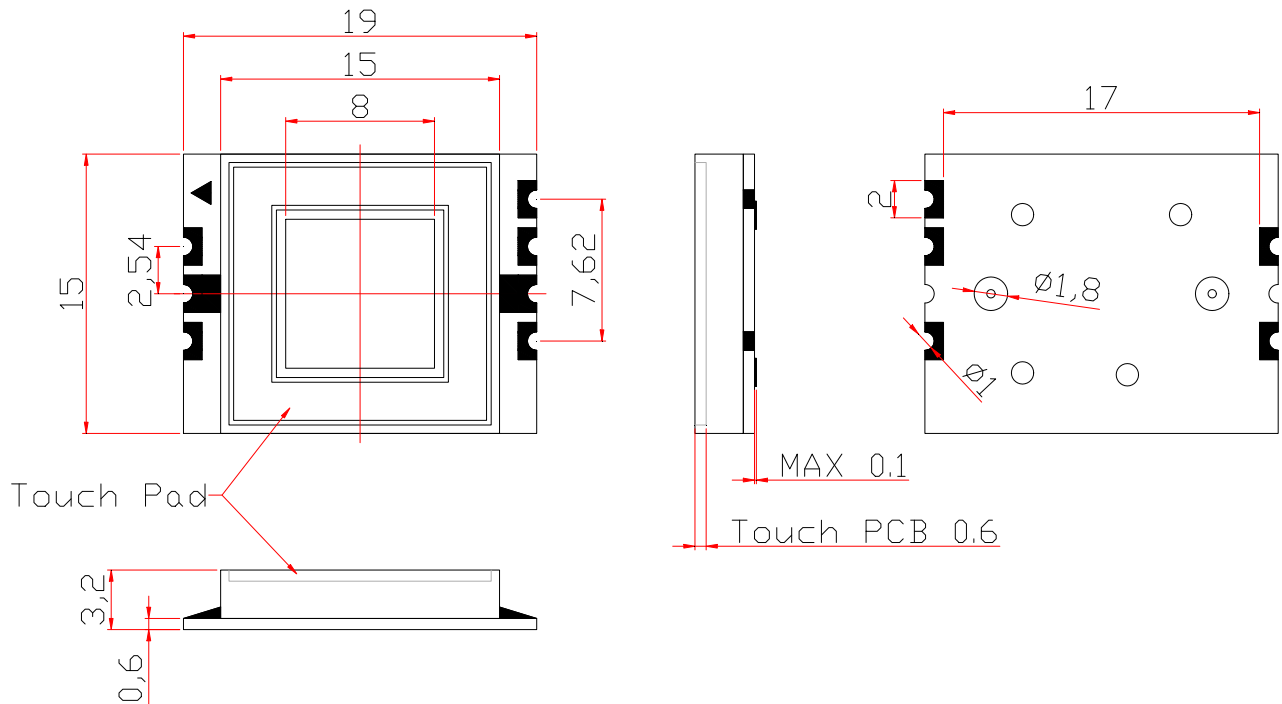
5.1. We recommend the re-flow temperature $245^{\circ}\text{C}(\pm 5^{\circ}\text{C})$. the maximum soldering temperature should be limited to 260°C .

5.2. Don't cause stress to the epoxy resin while it is exposed to high temperature. Number of re-flow process shall be 2 times or less.

6. Description:

- Radiation Size: 8.0*8.0mm
- White Face with Touch PCB
- White Epoxy Resin
- Emitted Color: Red and Yellow

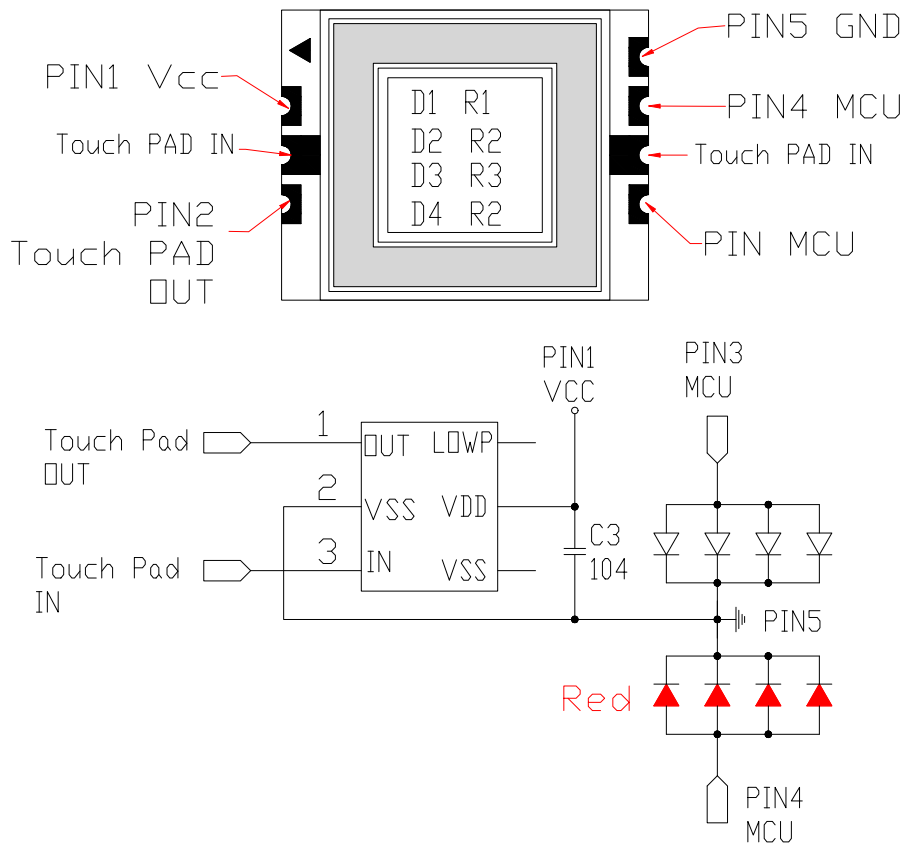
Outer Dimension:



Notes: Unless otherwise stated, the tolerance is $\pm 0.25\text{mm}$.

Circuit Diagram:

ALL LIGHT ON SEGMENTS FEATURE & PAD POSITION



■ ABSOLUTE MAXIMUM RATING

Parameter	Symbol	Rating	Unit
Power Dissipation (Per Dice)	P_D	114	mW
Continuous Forward Current (Per Dice)	I_F	30	mA
Peak Current (Per Dice, duty cycle 1/10, 1KHz)	I_{FP}	100	mA
Derating Liner from 25°C (Per Dice)	$\Delta I_f / \Delta T$	0.4	mA / °C
Reverse Voltage (Per Dice)	V_R	5	V
Operating Temp.	T_{OPR}	-40 ~ +105	°C
Storage Temp.	T_{STG}	-40 ~ +105	°C
Electrostatic Discharge (HBM)	ESD	1500	V
Hand Soldering Temperature	T_{SOL}	350	°C

■ TOUCH IC ELECTOR-OPTICAL CHARACTERISTICS (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply Voltage	V_{DD}	--	2.0	--	5.5	V
High Level Input Voltage	V_{IH}	$V_{DD} = 5V$	3.5	--	5	V
Low Level Input Voltage	V_{IL}	$V_{DD} = 5V$	0	--	1.5	V
Operating Current	I_{DD1}	$V_{DD} = 5V(\text{No load})$	--	16	--	μA
		$V_{DD} = 3V(\text{No load})$	--	3.5	--	
Operating Current (SLRT = V_{DD})	I_{DD2}	$V_{DD} = 5V(\text{No load})$	--	10.5	--	μA
		$V_{DD} = 3V(\text{No load})$	--	2.5	--	
Low Level Output Current	I_{OL}	$V_{DD} = 3V / V_{OL} = 1V$	--	30	--	mA
High Level Output Current	I_{OH}	$V_{DD} = 3V / V_{OH} = 1V$	--	8	--	mA

■ ELECTOR-OPTICAL CHARACTERISTICS (Ta=25°C) of Red LED

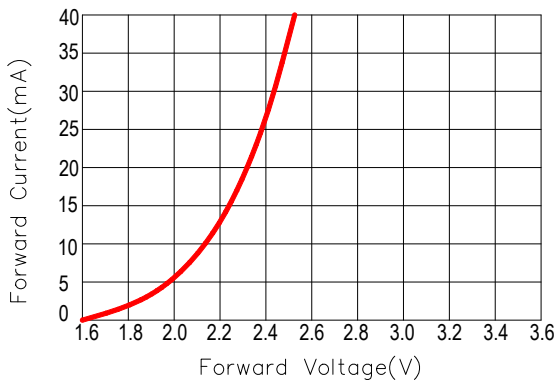
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	I_V	$I_F = 20 \text{ mA}$	80	110	--	mcd
Forward Voltage	V_F	$I_F = 20 \text{ mA}$	1.8	--	2.4	V
Dominant Wavelength	λ_D	$I_F = 20 \text{ mA}$	--	623	--	nm
Spectrum Radiation Bandwidth	$\Delta \lambda$	$I_F = 20 \text{ mA}$	--	23	--	nm
Reverse Current	I_R	$V_R = 5V$	--	--	100	μA

ELECTRO-OPTICAL CHARACTERISTICS (Ta=25°C) of Yellow LED

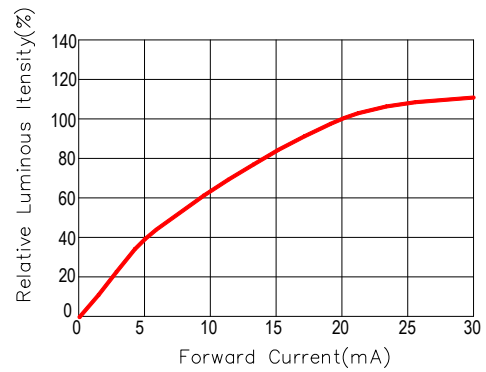
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	I_V	$I_F = 20 \text{ mA}$	80	110		mcd
Forward Voltage	V_F	$I_F = 20 \text{ mA}$	1.8	--	2.4	V
Dominant Wavelength	λ_D	$I_F = 20 \text{ mA}$	--	589	--	nm
Spectrum Radiation Bandwidth	$\Delta\lambda$	$I_F = 20 \text{ mA}$	--	23	--	nm
Reverse Current	I_R	$V_R = 5V$	--	--	100	μA

Typical Optical-Electronic Characteristic Curves of Red LED

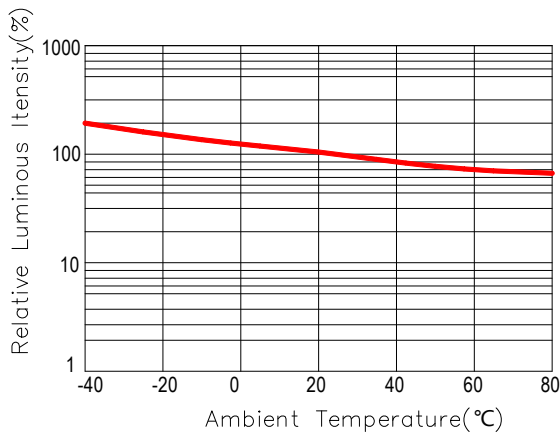
Forward Current VS Forward Voltage



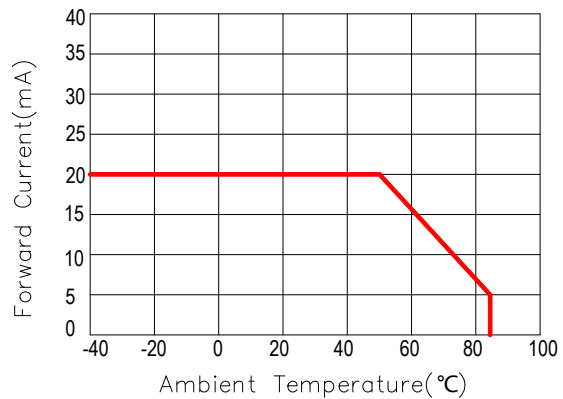
Relative Flux VS Forward Current



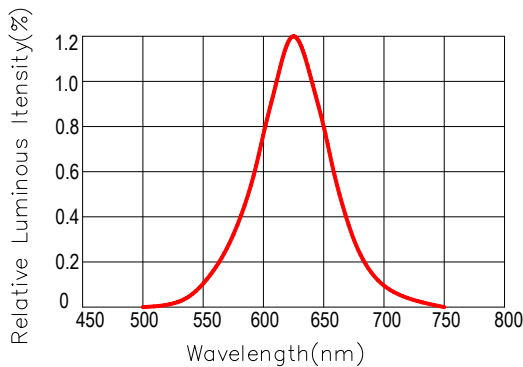
Relative Flux VS Ambient Temperature



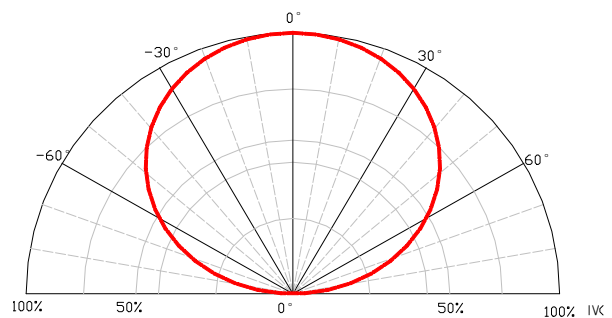
Forward Current VS Ambient Temperature



Relative Spectral Distribution

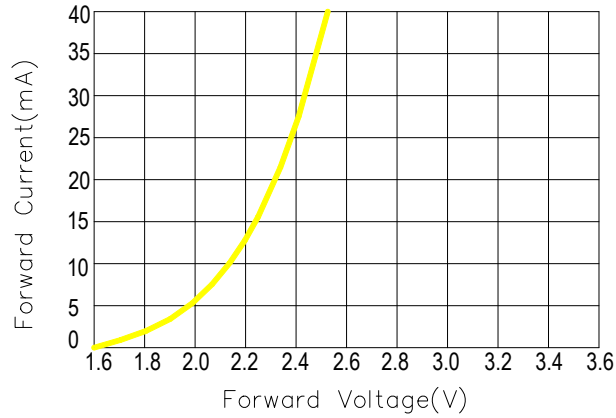


Typical Spectral Distribution

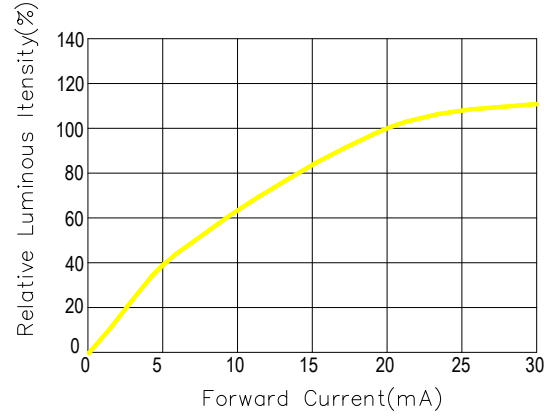


■ Typical Optical-Electronic Characteristic Curves of Yellow LED

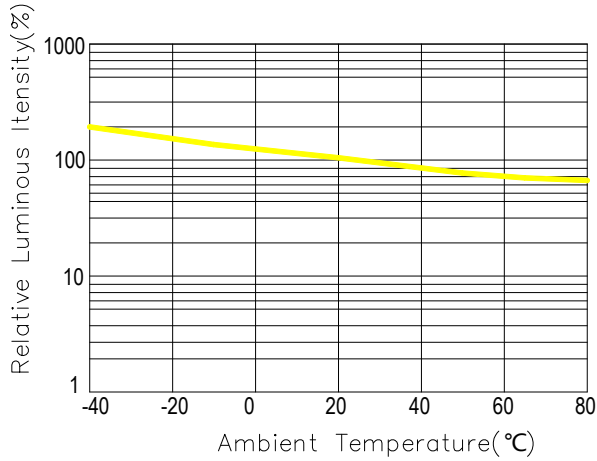
Forward Current VS Forward Voltage



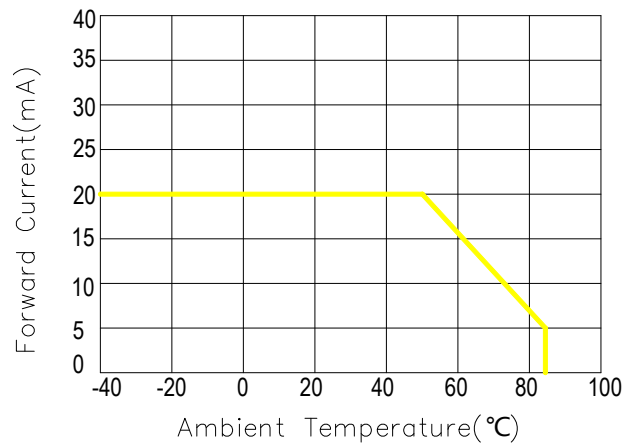
Relative Flux VS Forward Current



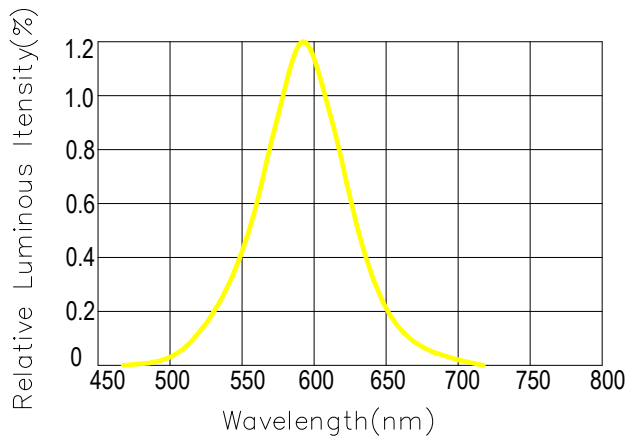
Relative Flux VS Ambient Temperature



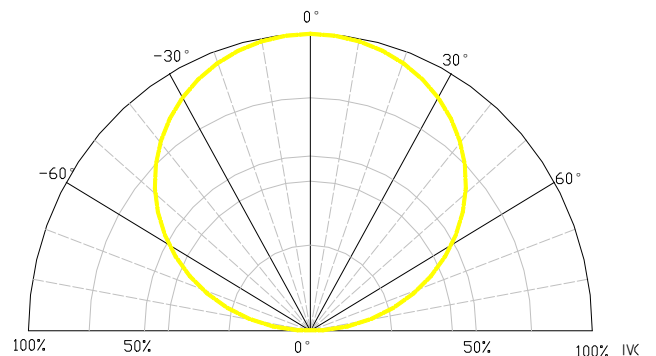
Forward Current VS Ambient Temperature



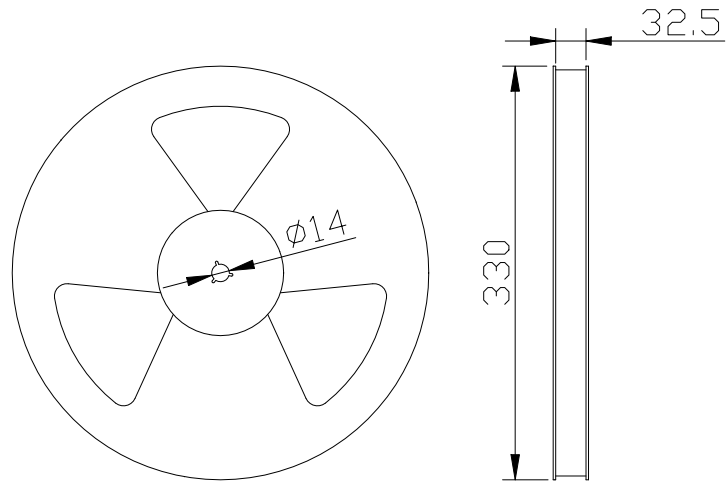
Relative Spectral Distribution



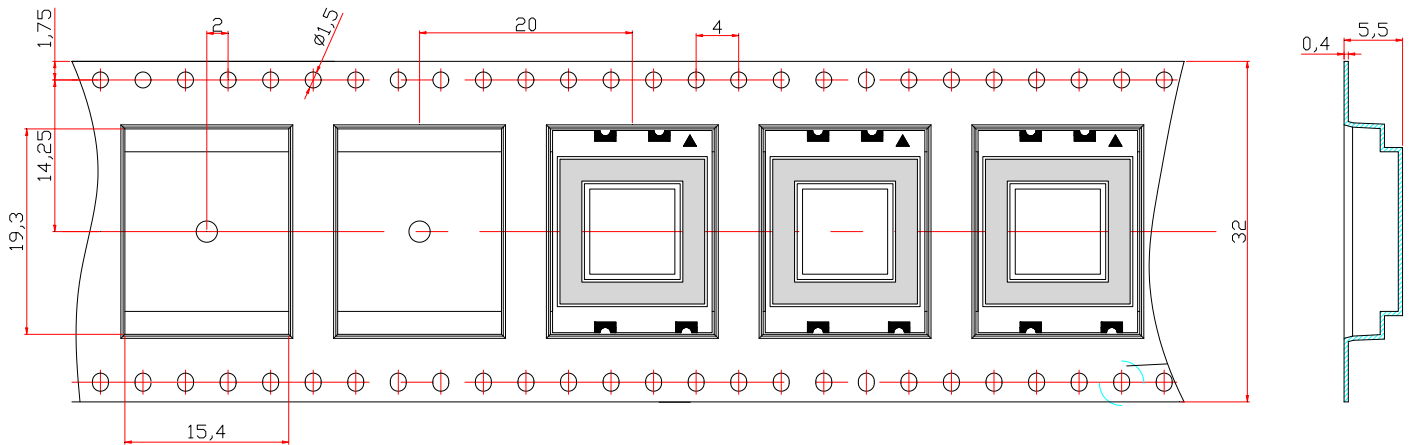
Typical Spectral Distribution



■ Packing Reel Dimensions(mm):



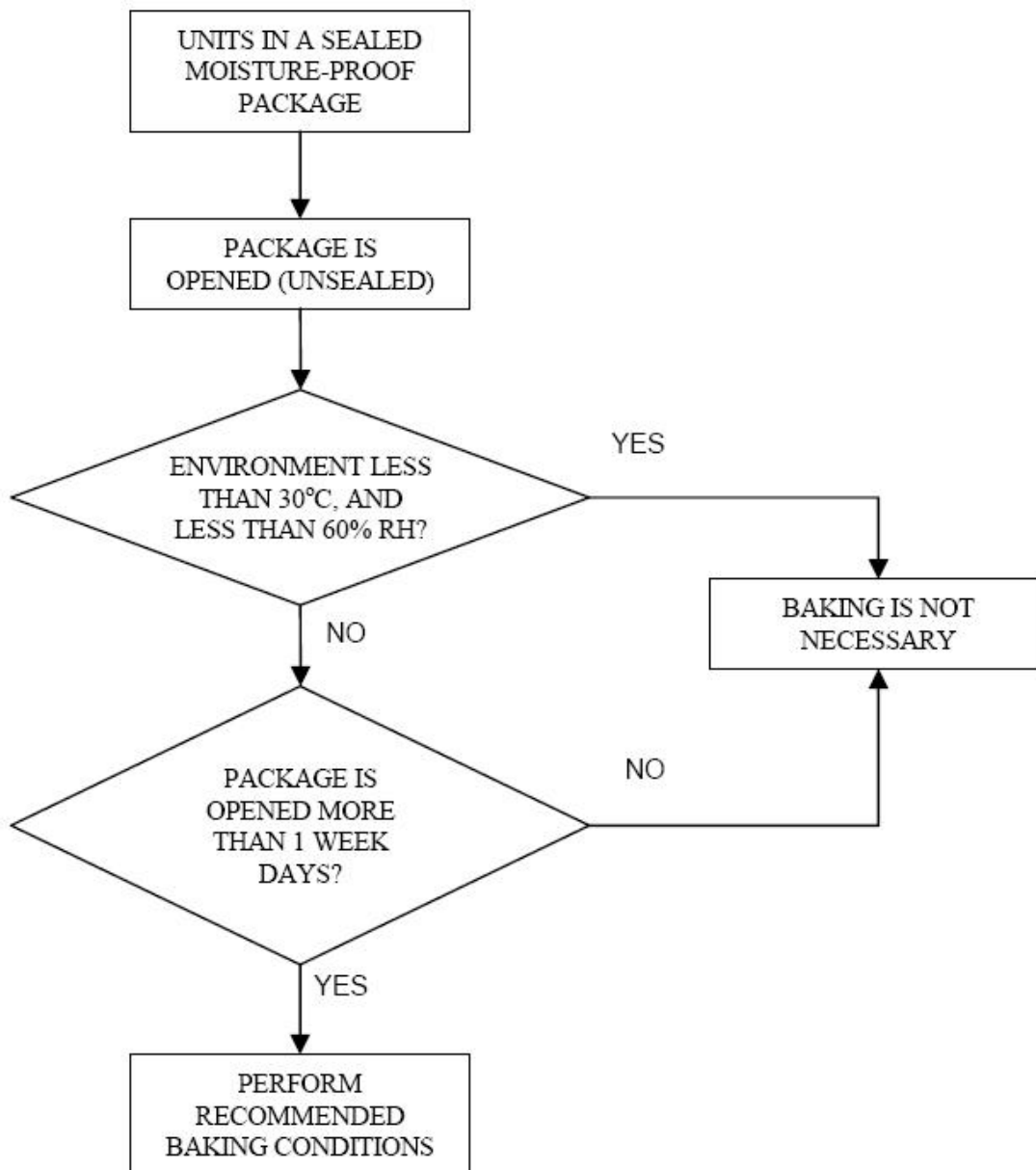
■ Dimensions of Tape (Unit: mm)



■ One Reel contained 700 PCS products:

Moisture Proof Packaging:

All N/D SMD displays are shipped in moisture proof package. The displays should be stored at 30°C or less and 60% RH or less. Once the package opened, moisture absorption begins.



Baking Conditions:

If the parts not stored in dry conditions, they must be baked before re-flow to prevent damage to the parts.

Package	Temperature	Time
In Reel	60 °C	≥ 48hours
In Bulk	100 °C	≥ 4hours
	125 °C	≥ 2hours

■ Baking should only be done once.