

## WCN Opto Group Co., Limited

**Customer Name:**

**Date:**

2019-12-2

**Part No:**

WCN-SMLB-1515R1

**Product Group Description:**

Touch SMD LED Display

**Customer Part No:**

**Approval Date:**

**Customer Confirmation**

**Approved by**

William  
2019-12-2

**Checked by**

Athena  
2019-12-2

**Prepared By**

Zhang  
2019-12-2

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# WCN Opto Group Co., Limited

## REVISION RECORD

MARKER	Matter for revision	SHEET	DTAE	MAKER	APPOVED SIGN	
	Reason for revision					
A0	P# WCN-SMLB-1515R1	Whole Spec	2019-12-2	Zhang	Athena	William
	New Version issued					

**1. Type No./Manufacture's Name**

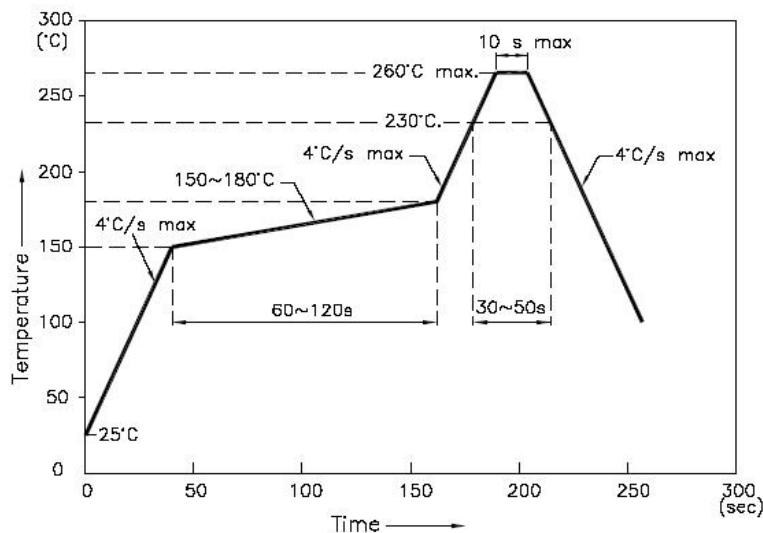
WCN-SMLB-1515R1 / WCN Opto Group Co., Limited.

**2. Features:**

- High Reliability
- Low Power Requirement
- Easy Assembly

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

Soldering Power <30 W.

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

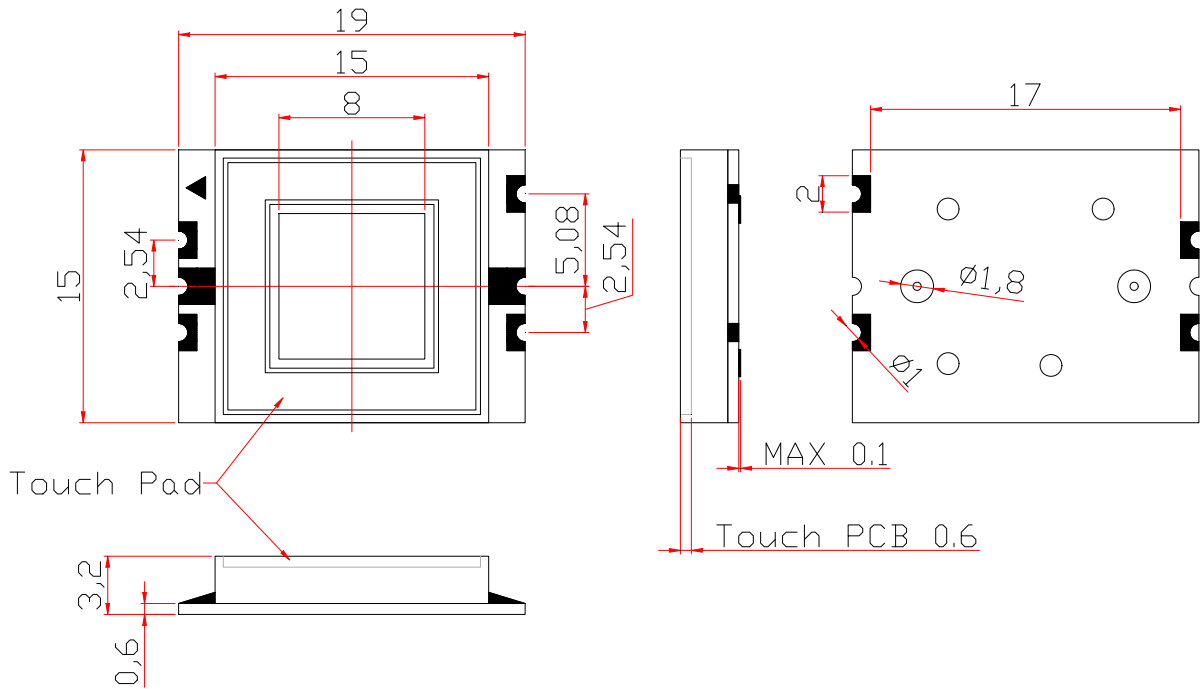
5.1. We recommend the re-flow temperature  $245^{\circ}\text{C}(\pm 5^{\circ}\text{C})$ , the maximum soldering temperature should be limited to  $260^{\circ}\text{C}$ .

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

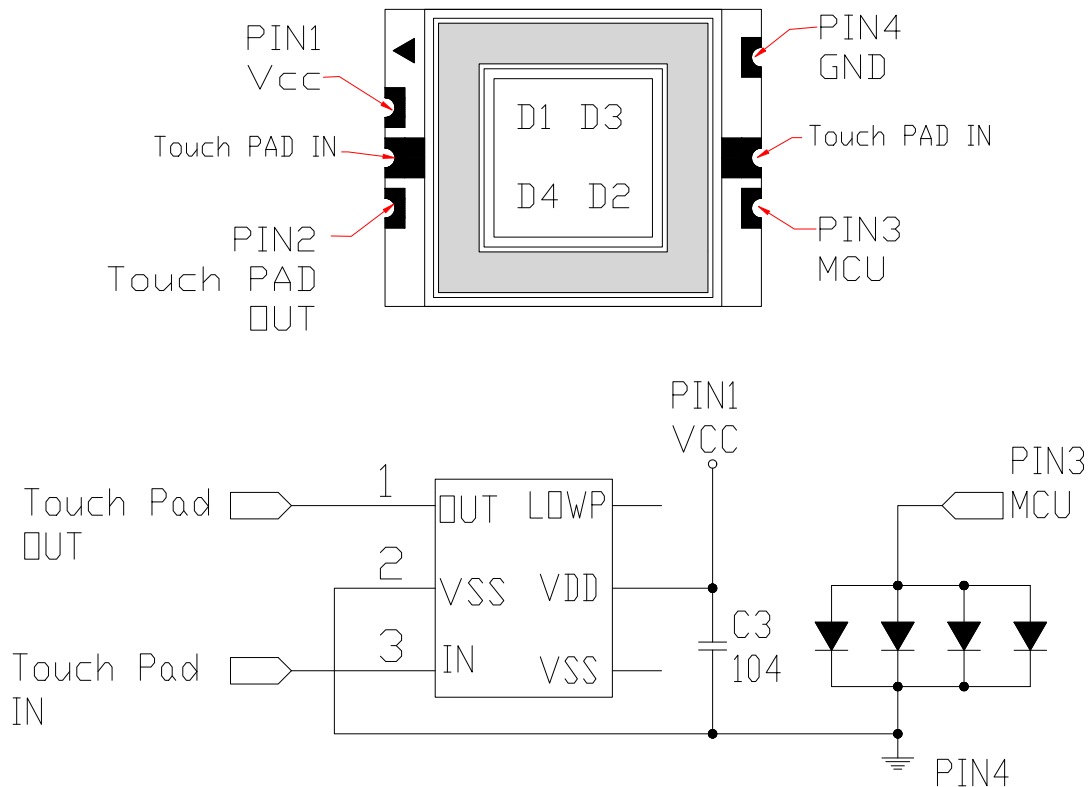
■ **Outer Dimension:**



**Notes:** Unless otherwise stated, the tolerance is  $\pm 0.25$ 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)

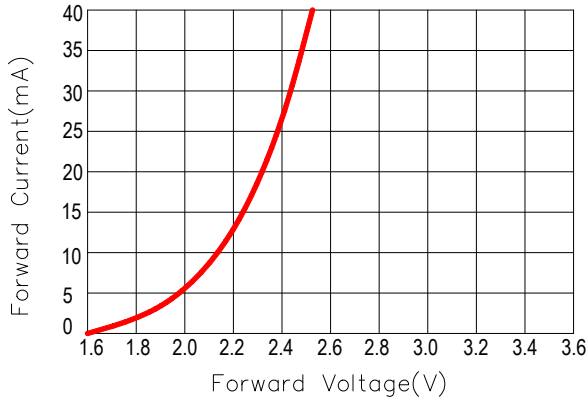
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply Voltage	$V_{DD}$	--	2.0	--	5.5	V
High Level Input Voltage	$V_{IH}$	$V_{DD} = 5V$	3.5	--	5	V
Low Level Input Voltage	$V_{IL}$	$V_{DD} = 5V$	0	--	1.5	V
Operating Current	$I_{DD1}$	$V_{DD} = 5V(\text{No load})$	--	16	--	$\mu A$
		$V_{DD} = 3V(\text{No load})$	--	3.5	--	
Operating Current (SLRT = $V_{DD}$ )	$I_{DD2}$	$V_{DD} = 5V(\text{No load})$	--	10.5	--	$\mu A$
		$V_{DD} = 3V(\text{No load})$	--	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)

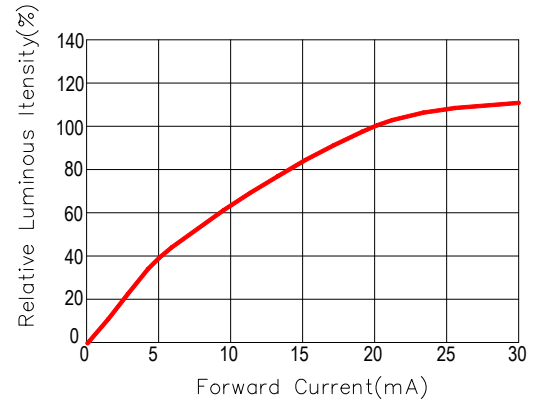
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	$I_V$	$I_F = 20 \text{ mA}$	80	110	--	mcd
Forward Voltage	$V_F$	$I_F = 20 \text{ mA}$	1.8	--	2.4	V
Dominant Wavelength	$\lambda_D$	$I_F = 20 \text{ mA}$	--	623	--	nm
Spectrum Radiation Bandwidth	$\Delta \lambda$	$I_F = 20 \text{ mA}$	--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

### ■ Typical Optical-Electronic Characteristic Curves

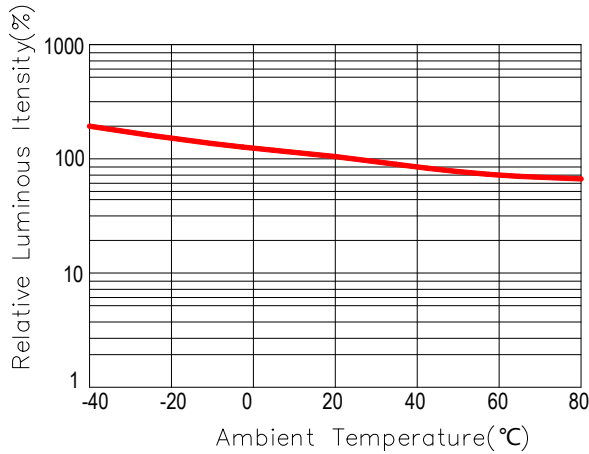
**Forward Current VS Forward Voltage**



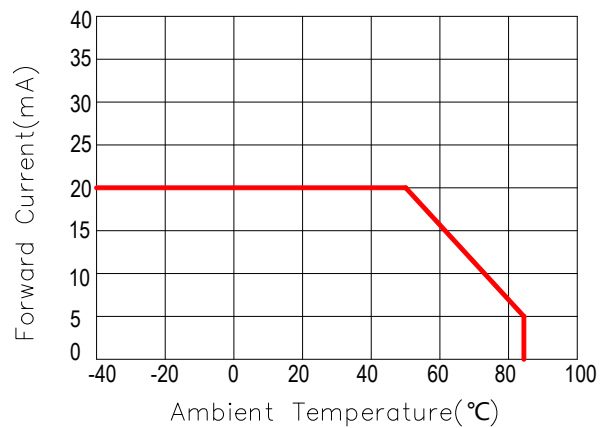
**Relative Flux VS Forward Current**



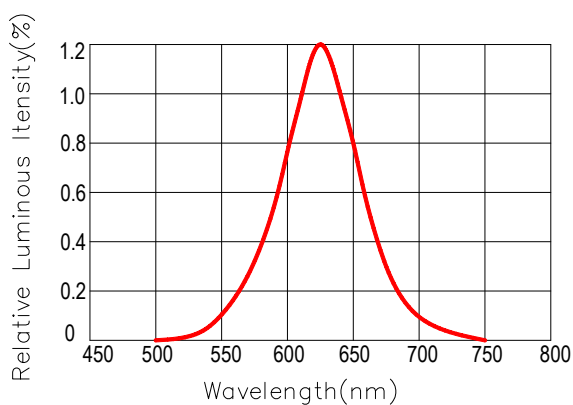
**Relative Flux VS Ambient Temperature**



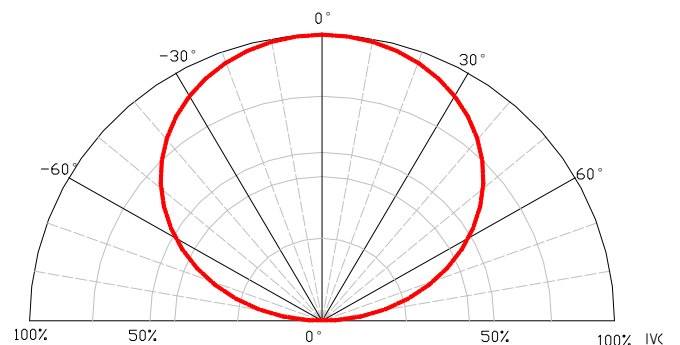
**Forward Current VS Ambient Temperature**



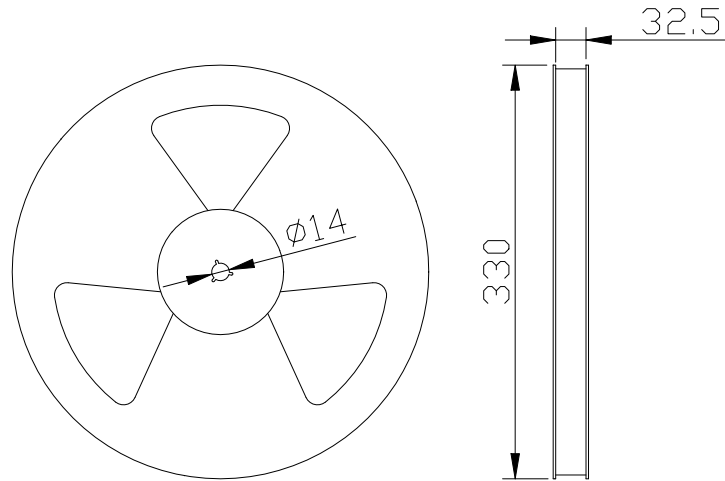
**Relative Spectral Distribution**



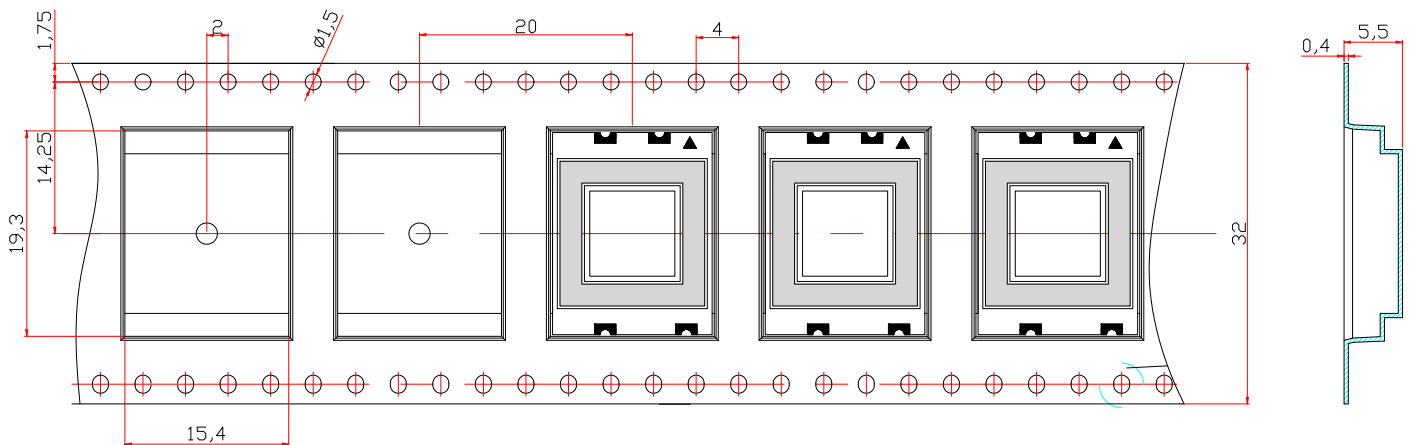
**Typical Spectral Distribution**



### ■ Packing Reel Dimensions(mm):



### ■ Dimensions of Tape (Unit: mm)

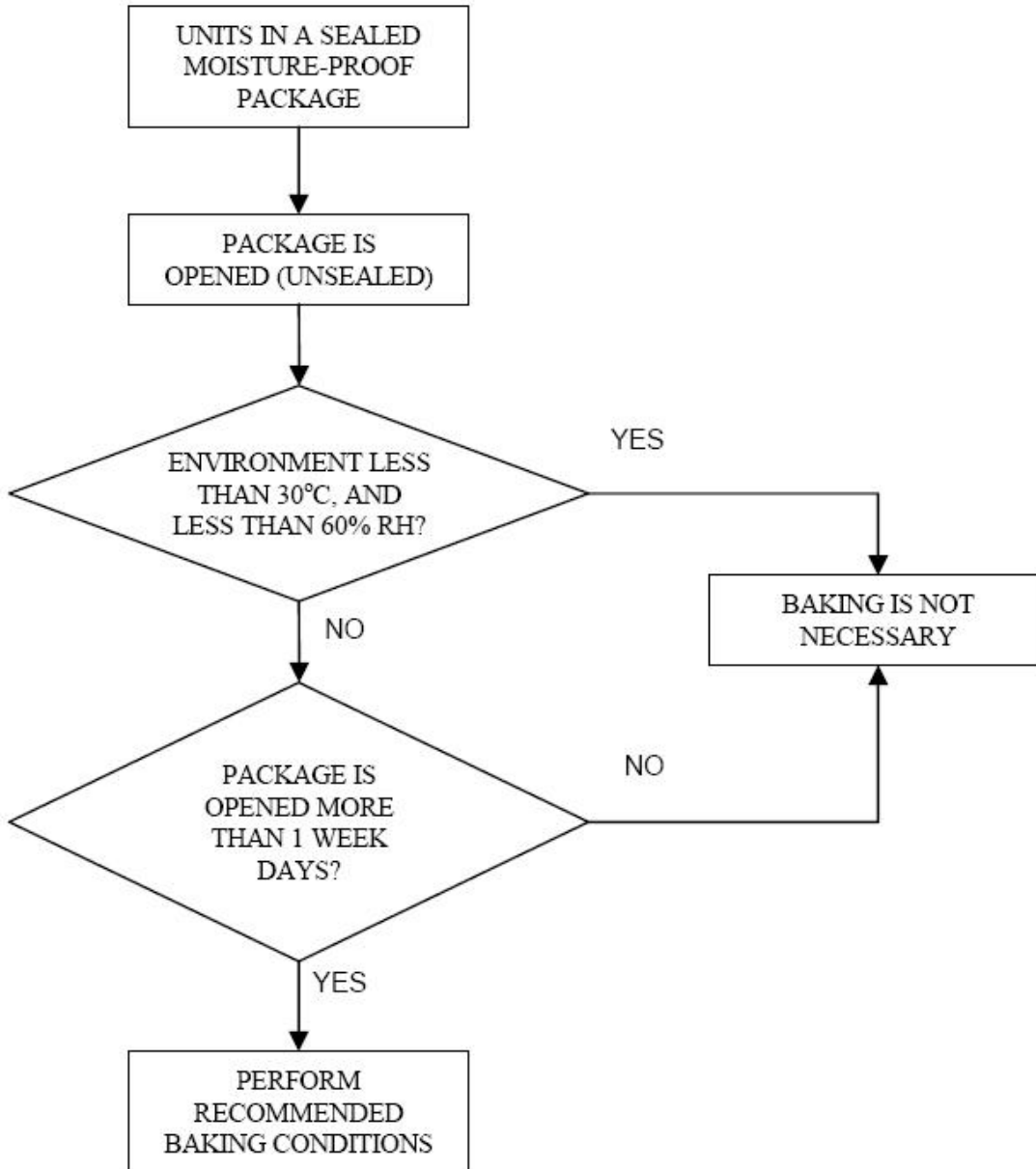


### ■ One Reel contained 700 PCS products:



### 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.