

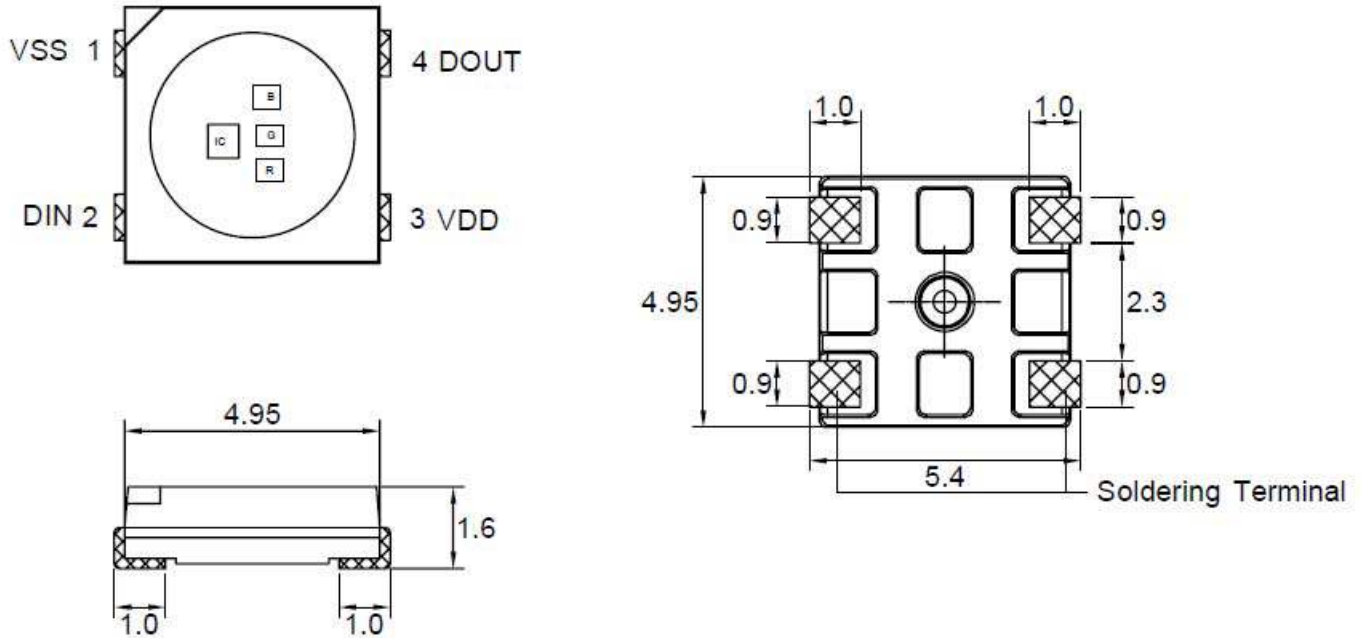


American Opto Plus LED Corp.

L381L-LEPGBC3DI

5.4 x 4.95 x 1.6mm RGB SMD LED with IC

PACKAGE DIMENSION



Notes:

1. All dimensions are in millimeters; tolerance is $\pm 0.2\text{mm}$ unless otherwise noted.
2. Specifications are subject to change without notice.

NO.	Symbol	Function Description
1	VSS	Ground
2	DIN	Control Data Signal Input
3	VDD	DC Power Input
4	DOUT	Control Data Signal Output

Material	Color	
	Emitted	Lens
AlGaInP	Red	Water Clear
InGaN	Blue	
InGaN	Green	

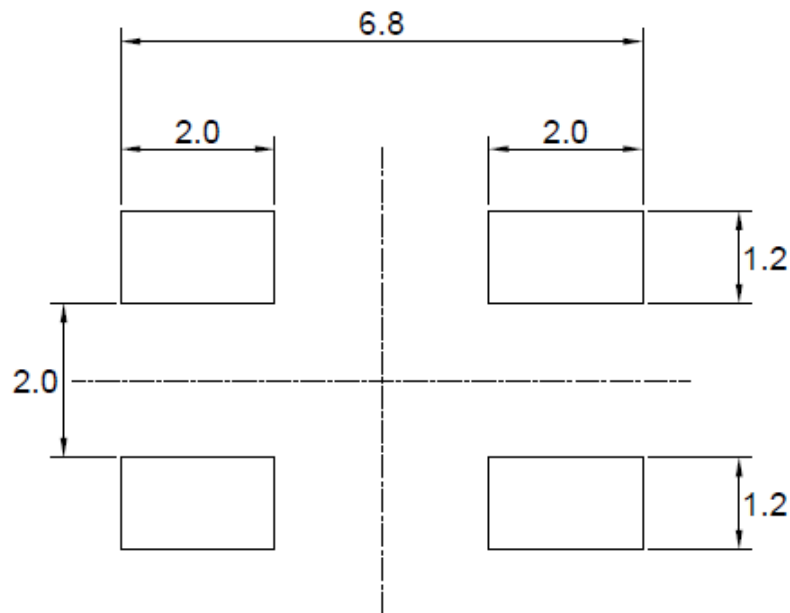


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RECOMMENDED SOLDERING PAD



Note:

1. The tolerance unless mentioned is $\pm 0.1\text{mm}$, Angle $\pm 0.5^\circ$. Unit=mm.



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ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

Parameter	Symbol	Rating	Unit
Supply Voltage	VDD	-0~+6.0	V
LED Output Current	I _{OUT}	20	mA
Operating Temperature	T _{OPR}	-40~+85	°C
Storage Temperature	T _{STG}	-40~+100	°C

TYPICAL-ELECTRICAL CHARACTERISTICS

(Ta=25°C)

Parameter	Symbol	Test Condition	Rating			Unit
			Min.	Typ.	Max.	
Supply Voltage	VDD	--	3.3	5	5.5	V
Each RGB Current	IOL	VDD=5V	--	12	--	mA
Input High Voltage	VIH	DI	2.7	--	VDD	V
Input Low Voltage	VIL	DI	0	--	1.0	V
Output High Voltage	VOH	DO,@VDD=5V	4.5	--	--	--
Output Low Voltage	VOL	DO,@VDD=5V	--	--	0.4VDD	V

ELECTRICAL OPTICAL CHARACTERISTICS AT

(Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition	
Luminous Intensity	I _v	R	--	500	--	mcd	VDD=5.0V
		G	--	650	--		
		B	--	190	--		
Dominant Wavelength	λ _d	R	--	622	--	nm	
		G	--	525	--		
		B	--	470	--		
Viewing Angle	2θ1/2	--	--	--	--		

Note:

1. The luminous intensity data did not including ±15% testing tolerance.
2. The dominant wavelength data did not including ±1nm testing tolerance.

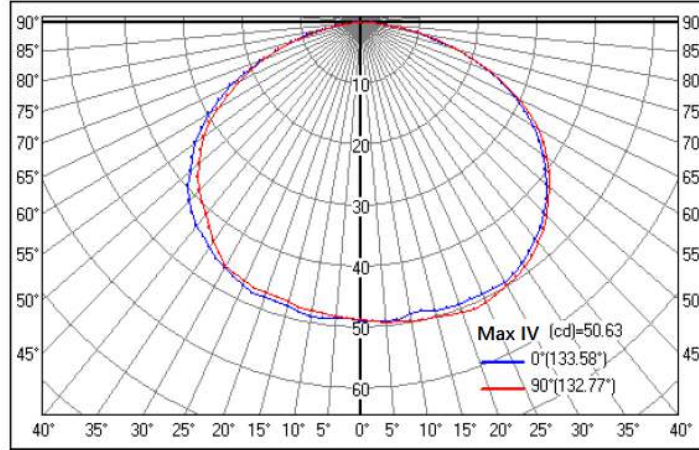


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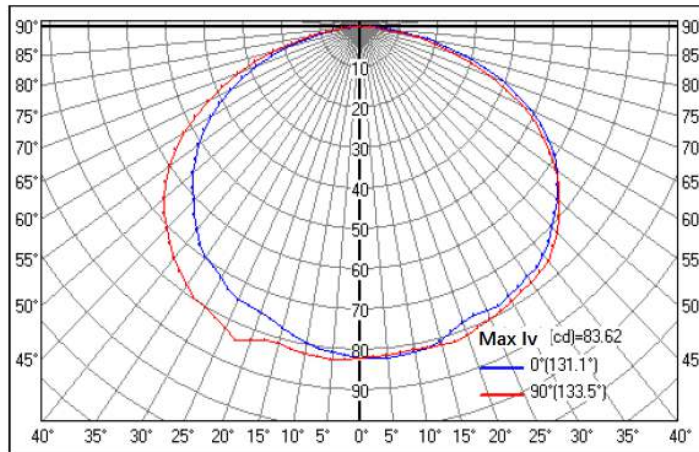
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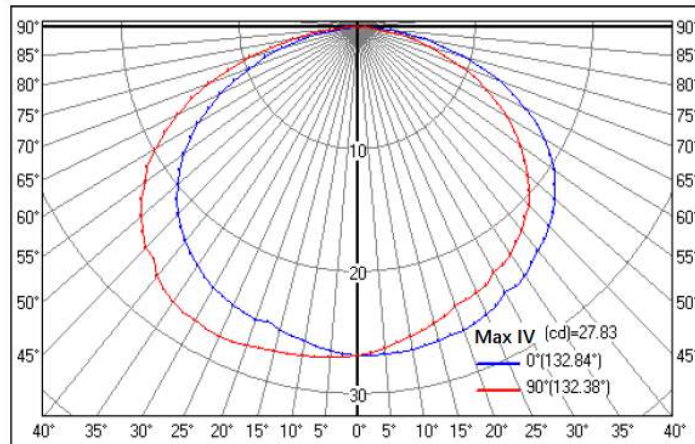
SPATIAL DISTRIBUTION GRAPH (RED)



SPATIAL DISTRIBUTION GRAPH (GREEN)



SPATIAL DISTRIBUTION GRAPH (BLUE)



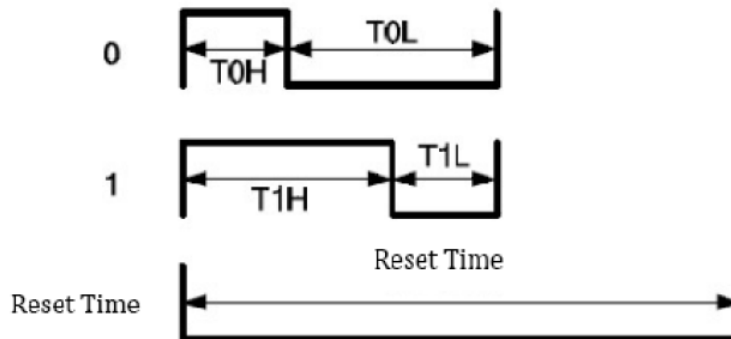


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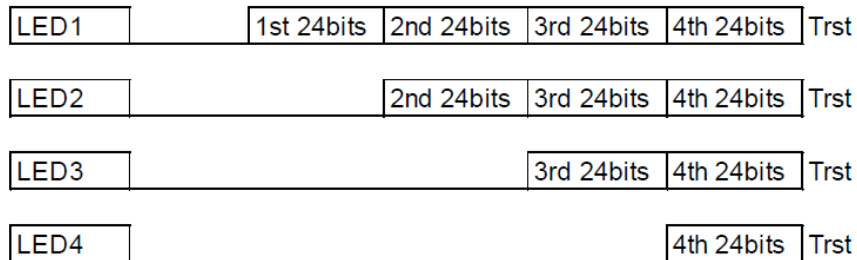
TRIMMING WAVE FORM



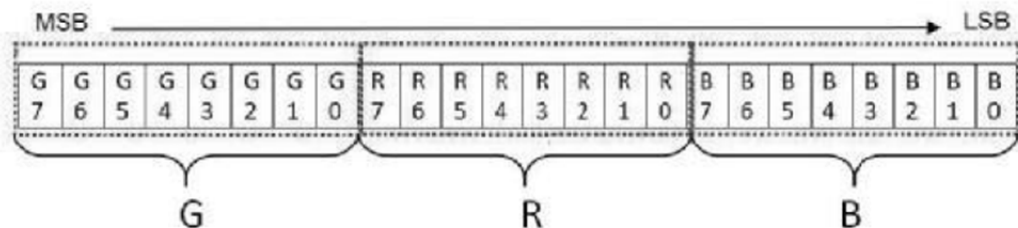
HIGH SPEED MODE

Item	Description	Min.	Typical	Allowance	Unit
T0H	0 code, High- level time	--	0.3	±0.15	us
T0L	0 code, Low- level time	--	0.9	±0.15	us
T1H	1 code, High- level time	--	0.9	±0.15	us
T1L	1 code, Low- level time	--	0.3	±0.15	us
Trst	Rest code, Low- level time	250	--	--	us

DATA COMMUNICATION



SINGAL DATA IN 24BIT FOR RGB



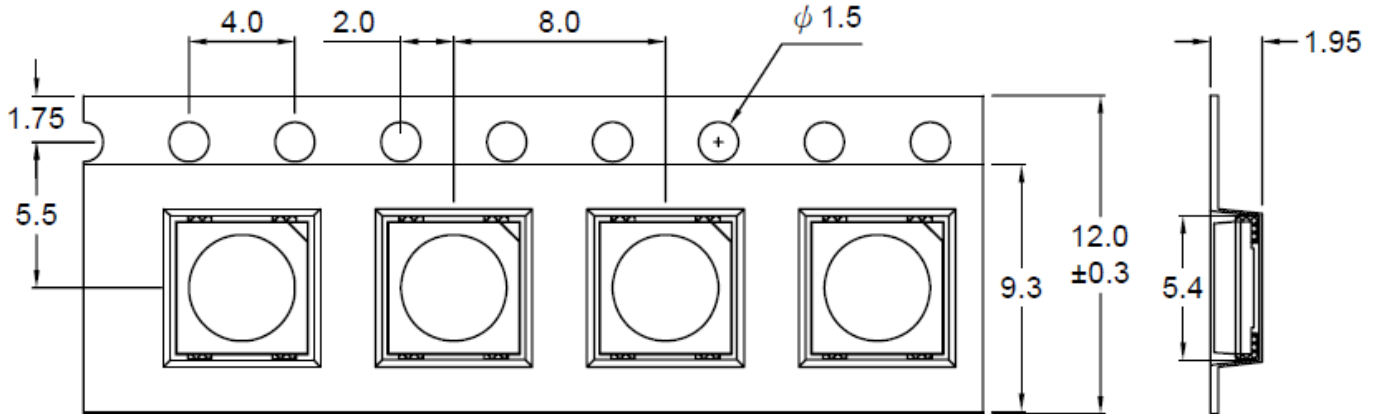


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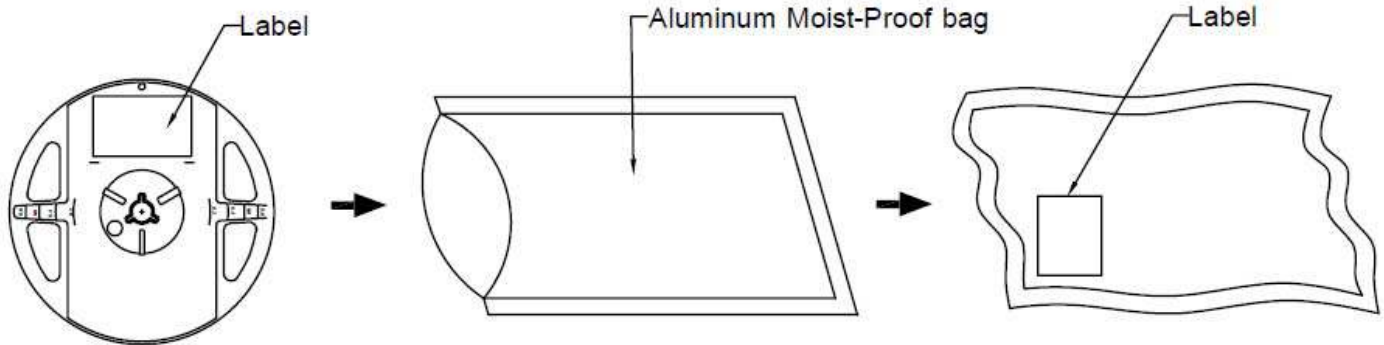
CARRIER TAPE DIMENSION



Notes:

1. The tolerances unless mentioned is ± 0.1 mm, Angle ± 0.5 . Unit=mm.

PACKING SPECIFICATIONS



Notes:

1. 12.0 mm tape, 7" reel.
2. 1000 pcs/ reel.

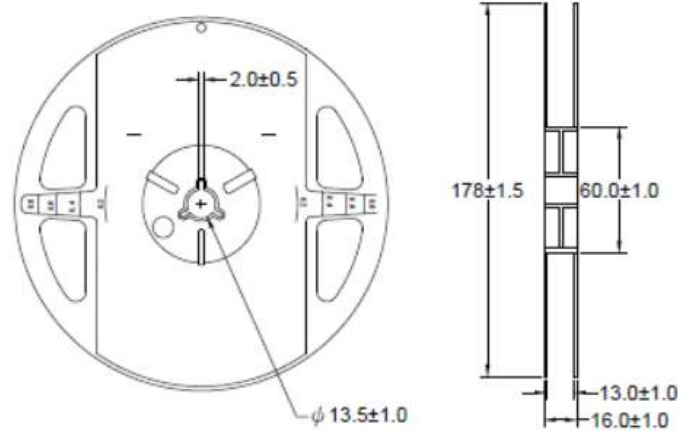


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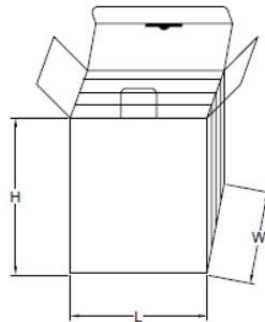
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REEL DIMENSIONS

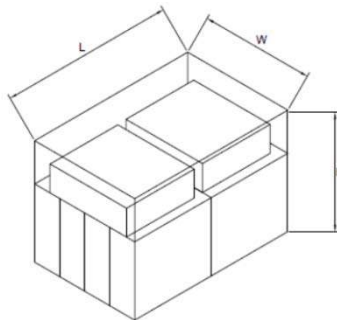


BOX EXPLANATION



NOTES:

1. 5 BAG / INNER BOX.
2. Inner box size : L X W X H 23cm X 8.5cm x 26cm.



NOTES:

1. 10 INNER BOXES / CARTON.
2. Carton size : L X W X H 58cm X 34cm x 35cm.



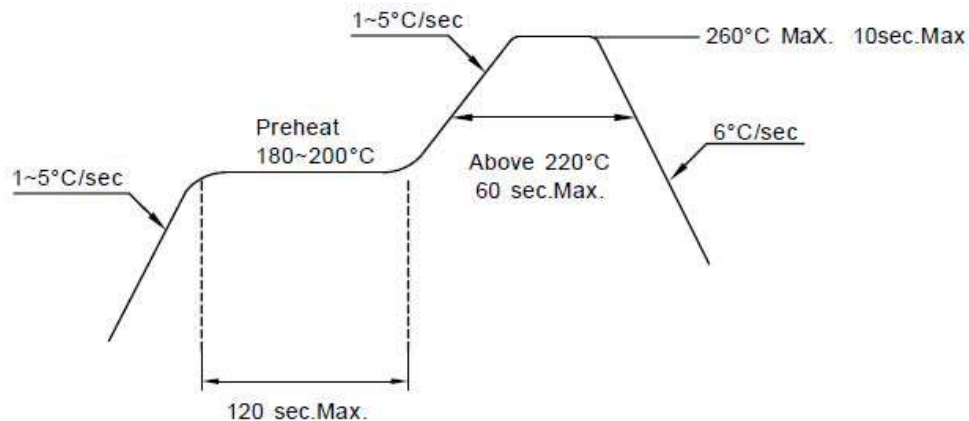
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RECOMMENDED SOLDERING CONDITION

1. Hand Solder
Basic spec is $\leq 280^{\circ}\text{C}$ for 3 seconds one time only.
2. PB-Free Reflow Solder



Notes:

1. Reflow soldering should not be done more than 2 times.
2. When soldering, do not put stress on the LEDs during heating.
3. After soldering, do not warp the circuit board.



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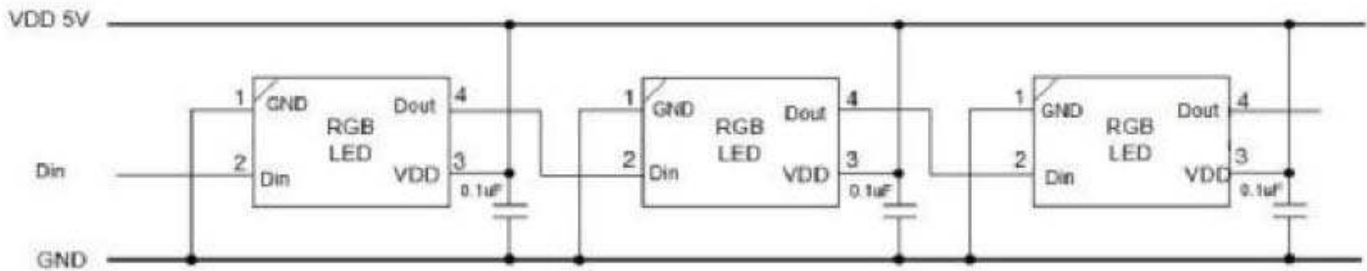
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PRECAUTION FOR USE

Storage Time:

1. Calculated shelf life before opening is 12 months at $<30^{\circ}\text{C}$ and $< 90\%$ relative humidity(RH).
2. After bag is opened, devices which will be subjected to reflow soldering or other high temperature processes must be
 - a. Assembled within 72 hours in an environment of $\leq 30^{\circ}\text{C}/60\%$ RH or
 - b. Stored at ambient of 10% RH or less.
3. Devices are required baking before assembly if:
 - a. Humidity indicator card reads $>10\%$ (for level 2a-5a) or $>60\%$ (for level 2) at ambient temperature $23\pm 5^{\circ}\text{C}$.
 - b. 2.a) or 2.b) doesn't meet.
4. If baking is required, devices should be baked for >24 hours at $60\pm 5^{\circ}\text{C}/5\%$ RH. Performing baking only once and using baked devices within 8 hours.

RECOMMENDED ROUTE



CLEANING

Use alcohol based cleaning solvents such as isopropyl alcohol to clean the LED.

ELECTROSTATIC DISCHARGE(ESD)

Static electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrostatic glove is recommended when handling these LED. All devices, equipment and machinery must be properly grounded.