NMOP-10118-E

SURFACE MOUNT LED TAPE AND REEL

Features:

1. Top view LED.
2. white SMT package.
3. Leadframe package with individual 2 pin.
4. Wide viewing angle.
5. Soldering methods:IR reflow soldering.
6. Feature of the device:more light due to higher optical efficiency;extremely wide viewing angle; ideal for backlighting and coupling in light guide.

Desription

The NMOP-10118-E SMD has wide viewing angle and optimized light coupling by inter reflector,The low current requirement makes this device ideal for portable equipment or any other application where power is at a premium.

Applications

1. Telecommunication: indicator and backlighting in telephone and fax.
2. Indicators.
3. Switch lights.

Device Selection Guide

Part No	Material	Color	
		Emitted	Lens
NMOP-10118-E	GaAsP/GaP	Orange	Water Clear

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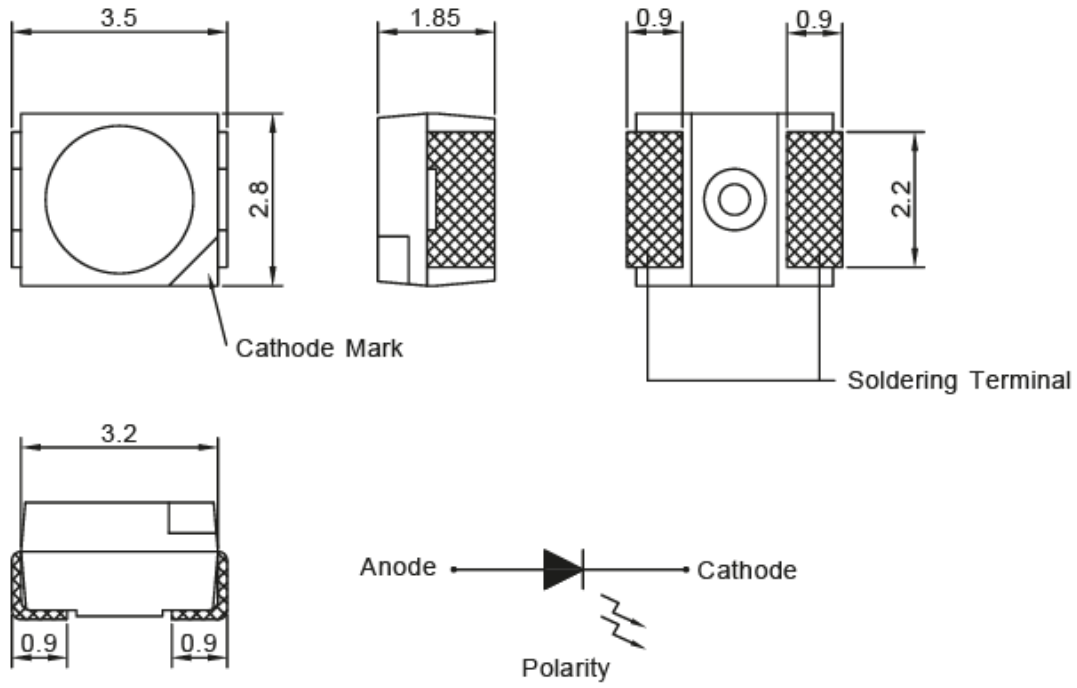
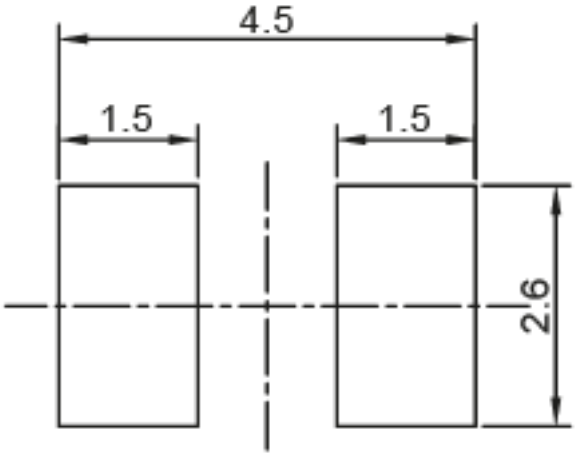
Package Outline Dimensions



Note : 1. All dimension are in millimeter tolerance is ±0.2mm unless otherwise noted.
2. Specifications are subject to change without notice.

Recommended Soldering Pad Dimensions



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

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Absolute Maximum Ratings at Ta=25° C

Parameter	Symbol	Ratings	UNIT
Forward Current	IF	25	mA
Peak forward current Duty 1/11@10KHz	I_{FP}	120	mA
Power Dissipation	PD	65	mW
Reverse Current @5V	Ir	10	μA
Electrostatic Discharge	ESD	2000	V
Operating Temperature	T_{opr}	-40 ~ +85	°C
Storage Temperature	T_{stg}	-40 ~ +100	°C

Typical Electrical & Optical Characteristics (Ta=25° C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	Iv	8	20	---	mcd	IF=20mA
Dominant Wavelength	λD	---	622	---	nm	
Spectrum Line Half-Width	Δλ	---	45	---	nm	
Forward Voltage	VF	1.7	---	2.6	V	
Viewing Angle	2θ1/2	120			deg	

Note :
1. The forward voltage data did not including ±0.1V testing tolerance.
2. The luminous intensity data did not including ±15% testing tolerance.
3. The dominant wavelength data did not including ±1nm testing tolerance

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Luminous Intensity Classification

BIN CODE	Iv(mcd) at 20mA	
	Min.	Max.
K	8	12.5
L	12.5	20
M	20	32
N	32	50

Dominant Wavelenght Classification

BIN CODE	λD (nm)at 20mA	
	Min.	Max.
26	615	618
27	518	521
28	621	624
29	624	627

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Typical Electro-Optical Characteristics Curve

Fig.1 Forward current vs. Forward Voltage

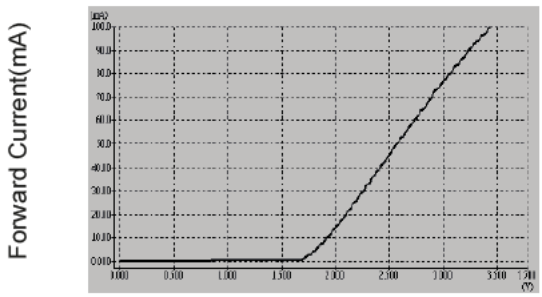


Fig.2 Relative Intensity vs. Forward Current

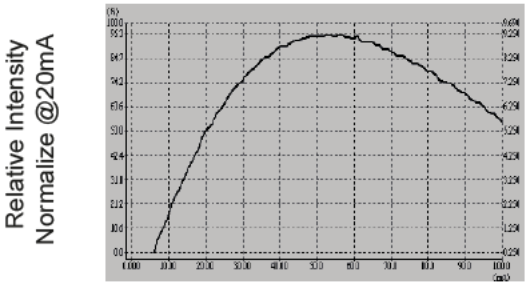


Fig.3 Forward Voltage vs. Temperature

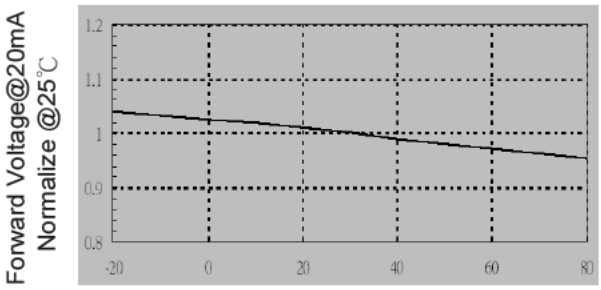


Fig.4 Relative Intensity vs. Temperature

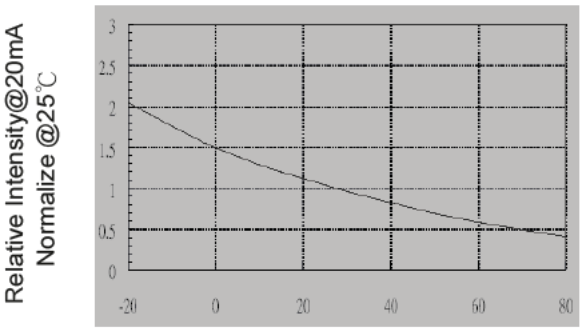


Fig.5 Relative Intensity vs. Wavelength

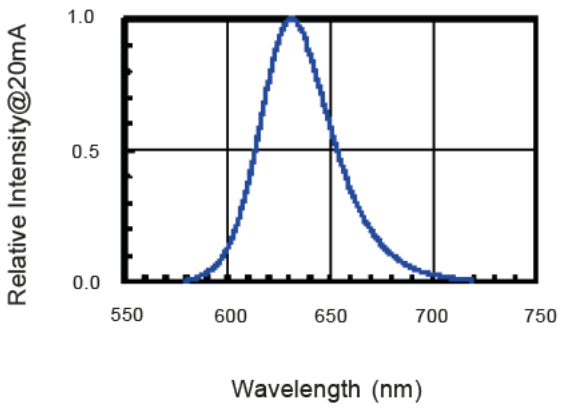
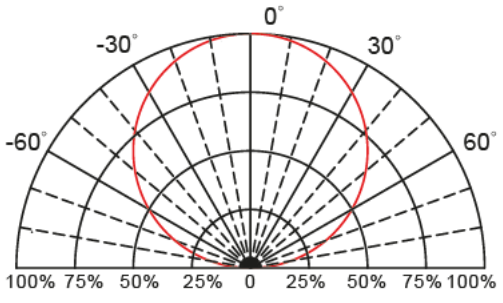


Fig.6 Directive Radiation



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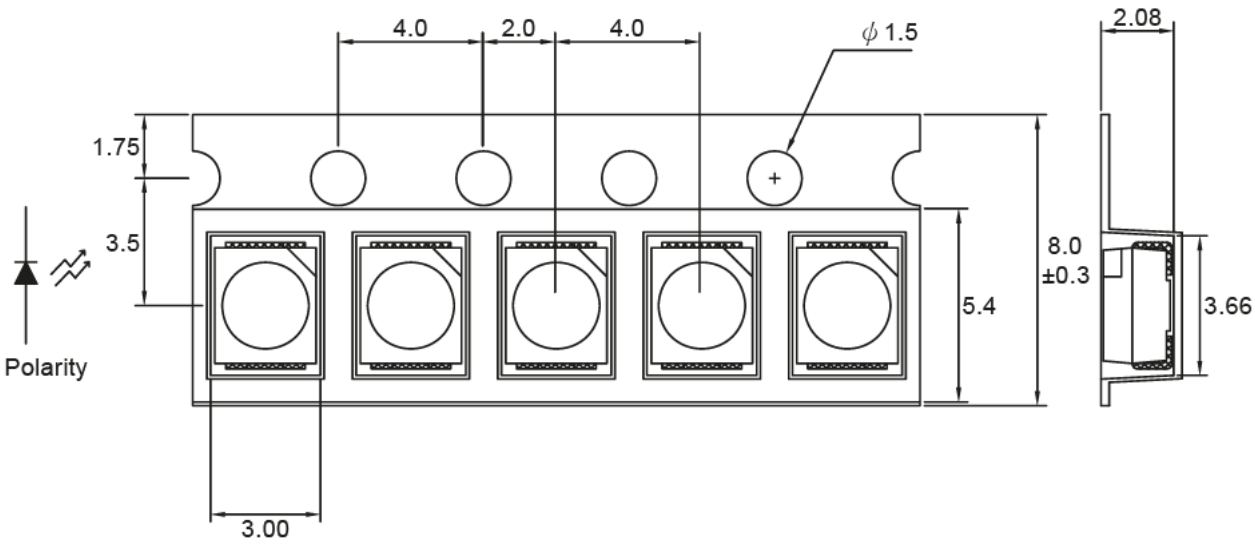
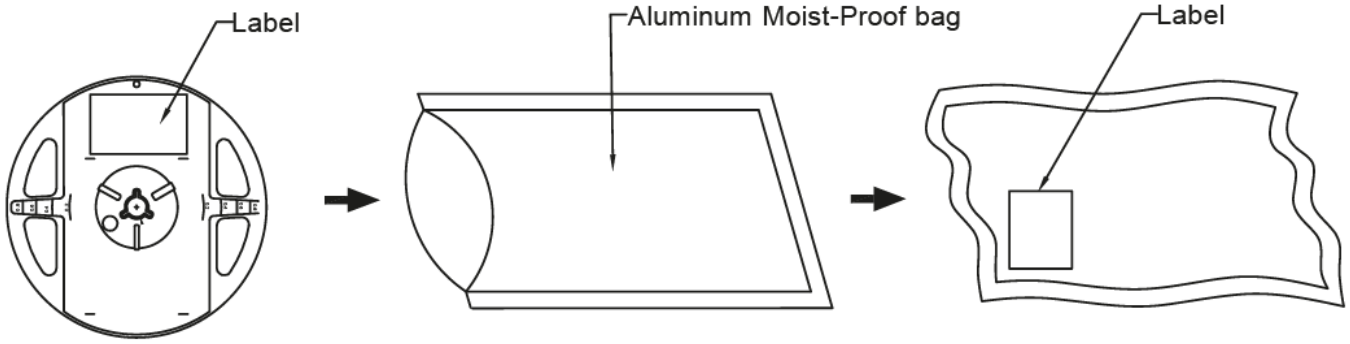
Carrier Type Dimensions



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

Packing Specifications



Part No.	Description	Quantity/Reel
NMOP-10118-E	8.0mm tape, 7" reel	2000 PCS

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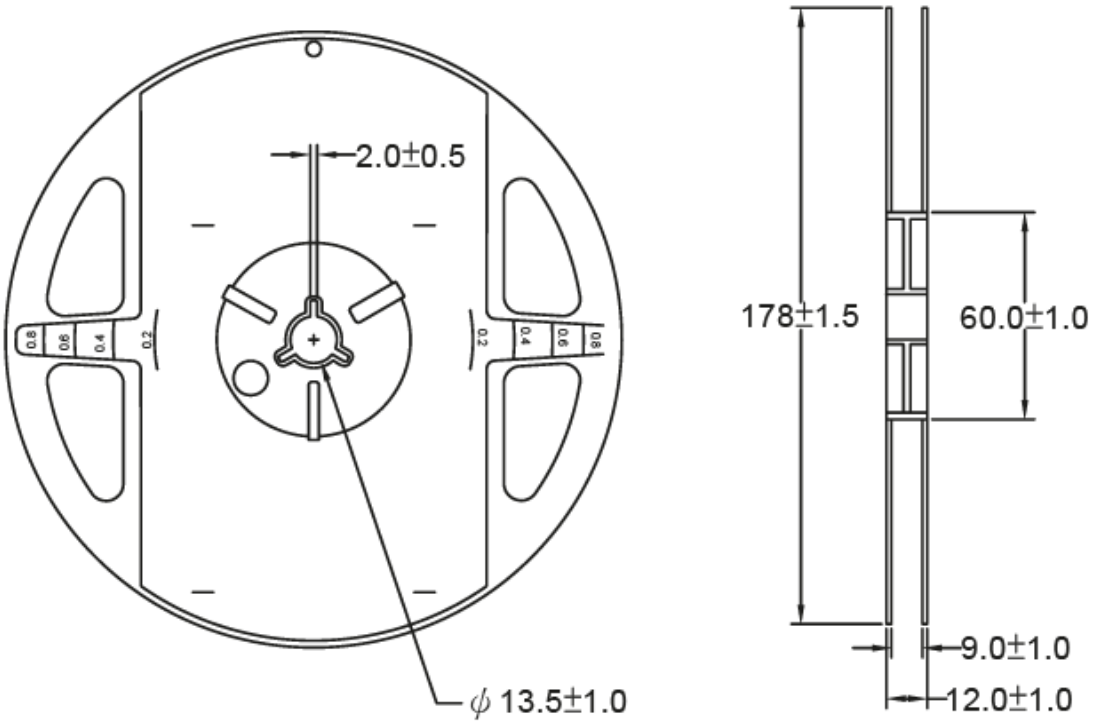
Label Explanation

BIN : Luminous Intensity

HUE : Dominant Wavelength

VF: Forward Voltage

Reel Dimensions



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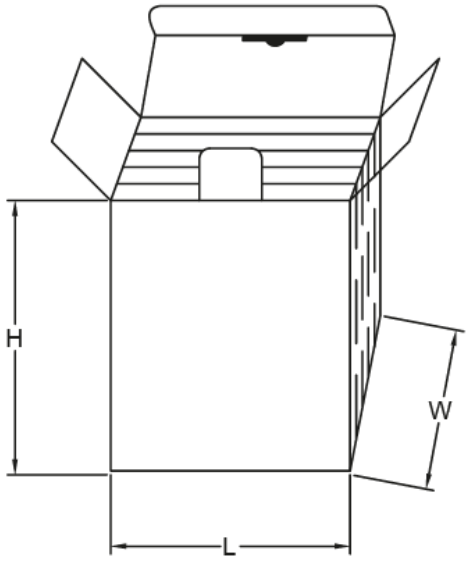
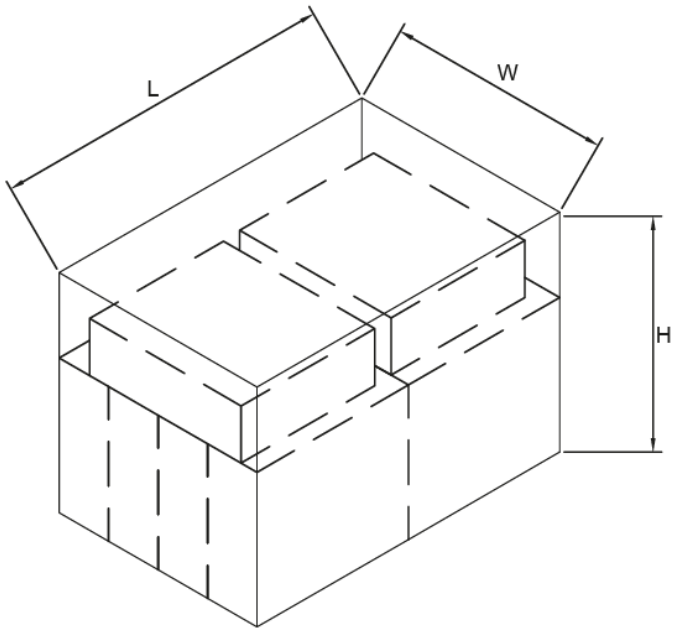
Box Explanation

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



3. 10 INNER BOXES / CARTON
4. CARTON SIZE : L X W X H 58cm X 34cm x 35cm



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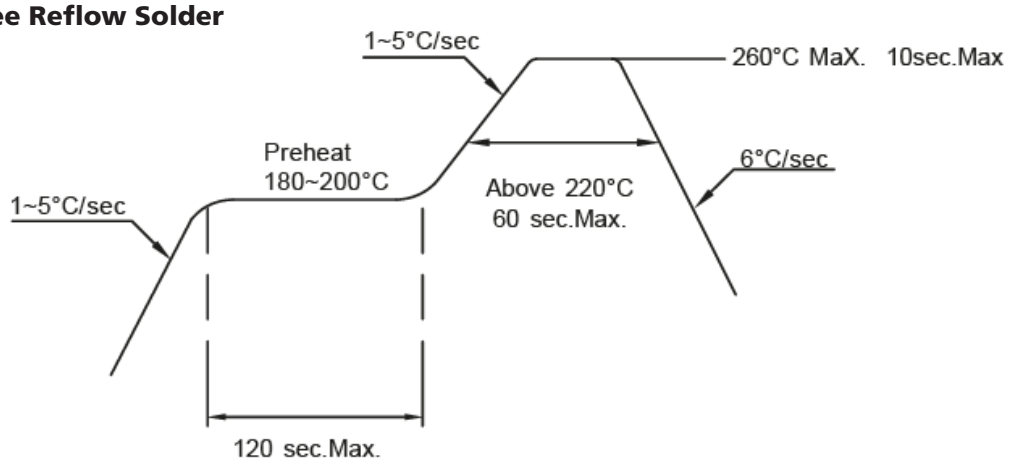
Recommended Soldering Conditions

1. Hand Solder

Basic spec is ≤320°C 3 sec one time only.

2. PB-Free Reflow Solder



Note:
1. Reflow soldering should not be done more than two 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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Precautions For Use:

Storage time:

1. Calculated shelf life before opening is 12 months at < 30°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) Assemblied within 168 hours in an environment of 30°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±5°C
   b) 2.a) or 2.b) doesn't meet
4. If baking is required, devices should be baked for >72 hours at 60±5°C / 5% RH.Performing baking only once, and using the baked devices within 72 hours.

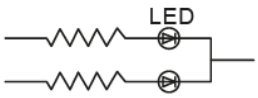
MSL LEVEL 3

Drive Method:

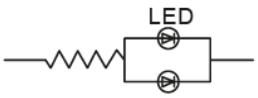
LED is a current operated device, and therefore, requirer some kind of current limiting incorporated into the driver circuit. This current limiting typically takes the form of a current limiting resistor placed in series with the LED.

Consider worst case voltage variations than could occur across the current limiting resistor. The forwrd current should not be allowed to change by more than 40% of its desired value.

Circuit model A



Circuit model B



(A) Recommended circuit.
(B) The difference of brightness between LED could be found due to the VF-IF characteristics of LED.

Cleaning:

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

ESD(Electrostatic Discharge):

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

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Reliability Test:

Classification	Test Item	Test Condition	Sample Size
Endurance Test	Operating Life Test	1.Ta=25°C 2.If=20mA 3.t=1000 hrs (-24hrs,+72hrs)	22
	High Temperature Storage Test	1.Ta=100°C±5°C 2.t=1000 hrs (-24hrs,+72hrs)	22
	Low Temperature Storage Test	1.Ta=-40°C±5°C 2.t=1000 hrs (-24hrs,+72hrs)	22
	High Temperature High Humidity Storage Test	1.Ta=85°C 2.RH=85% 3.t=1000hrs(-24hrs,+72hrs)	22
Environmental Test	Thermal Shock Test	1.Ta=100°C±5°C ~ -40°C±5°C 20min/ 10sec / 20min 2.total 100 cycles	22
	Temperature Cycling	1.100°C±5°C ~ -40°C±5°C 30mins / 5mins / 30mins 2.100 Cyeles	22
	IR Reflow	1.T=260°C Max. 10sec.Max. 2. 6 Min	22

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