

NMOP-10105-1

SMD LED

Features:

1. Package in 8mm carrier tape on 7" diameter reel.
2. Compatible with automatic placement equipment.
3. Compatible with infrared and vapor phase reflow solder process.
4. Mono color type.
5. Pb free.
6. The product itself will remain within RoHS compliant version.

Description:

1. The NMOP-10105-1 SMD Taping is much smaller than lead frame type components, thus enable smaller board size, higher packing density, reduced storage space and finally smaller equipment to be obtained.
2. Besides, lightweight makes them ideal for miniature applications. etc.

Applications

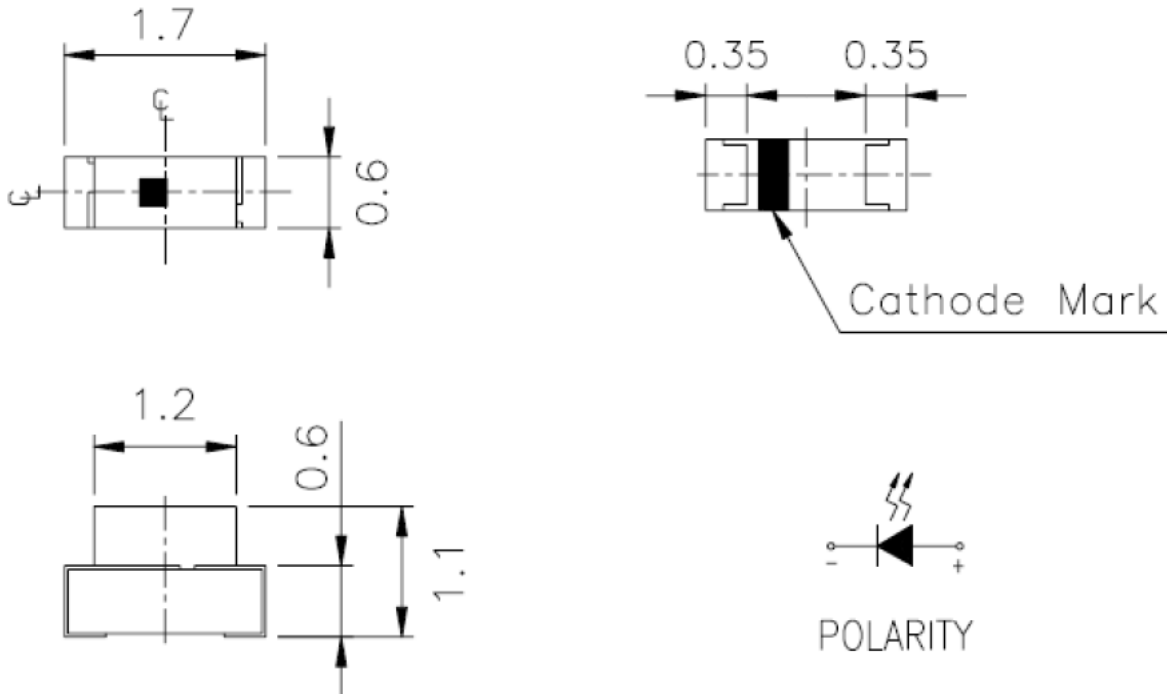
1. Automotive : backlighting in dashboard and switch.
2. Telecommunication : indicator and backlighting in telephone and fax.
3. Flat backlight for LCD, switch and symbol
4. General use.

Device Selection Guide

Part No	Material	Color	
		Emitted	Lens
NMOP-10105-1	AlGaInP	Red	Water Clear

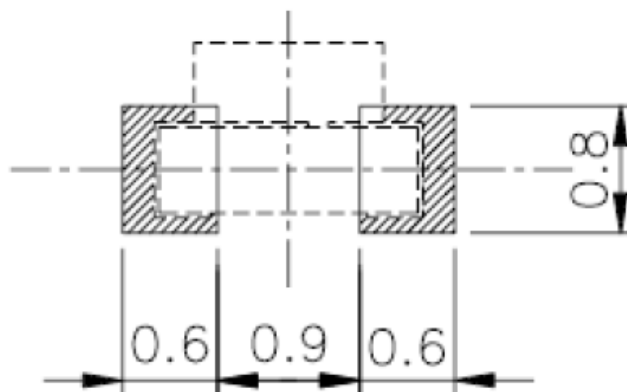
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Package Outline Dimensions



Note : 1. All dimension are in millimeter tolerance is ± 0.1 mm unless otherwise noted.
2. Specifications are subject to change without notice.

Recommended Soldering Pad Dimensions



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

Absolute Maximum Ratings at Ta=25° C

Parameter	Symbol	Ratings	UNIT
Power Dissipation	PD	60	mW
Peak pulse current Duty 1/10@10KHz IFP 60 mA	I _{FP}	60	mA
Forward Current Per Chip	I _F	25	μA
Reverse Current @5V	I _r	5	V
Electrostatic Discharge	ESD	2000	V
Operating Temperature	T _{opr}	-40 ~ +85	°C
Storage Temperature	T _{stg}	-40 ~ +90	°C
Soldering Temperature	T _{sol}	Reflow Soldering : 260° C for 10 sec Hand Soldering : 350° C for 3 sec.	

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I _v	90	---	180	mcd	IF=20mA
Peak Wavelength	λ _p	---	632	---	nm	
Dominant Wavelength	λ _d	617.5	---	633.5	nm	
Spectrum Radiation Bandwidth	Δλ	---	20	---	nm	
Forward Voltage	V _F	1.7	---	2.35	V	
Viewing Angle	2θ _{1/2}	---	130	---	deg	
Reverse Current	I _r	---	---	10	μA	VR=5V

Note : 1. The forward voltage data did not including ±0.1V testing tolerance.
 2. The luminous intensity data did not including ±11% testing tolerance.
 3. The Dominant Wavelength data did not including ±1nm

Luminous Intensity Classification

BIN Code	IV(mcd)at 20mA	
	Min.	Max.
Q2	90	112
R1	112	140
R2	140	180

Dominant Wavelength Classification

BIN Code	λ_d (nm) at 20mA	
	Min.	Max.
E4	617.5	621.5
E5	621.5	625.5
E6	625.5	629.5
E7	629.5	633.5

Forward Voltage Classification

BIN Code	VF(V) at 20mA	
	Min.	Max.
0	1.75	1.95
1	1.95	2.15
2	2.15	2.35

Note:

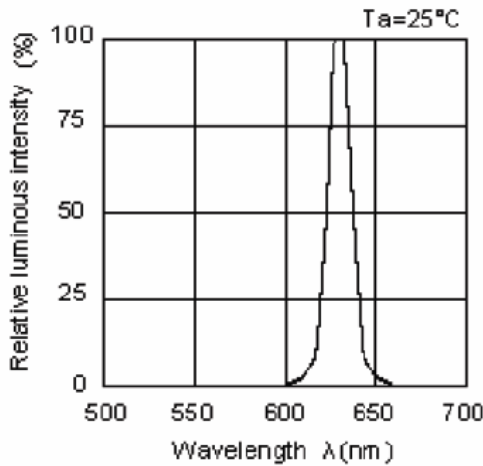
1:Tolerance of Luminous Intensity $\pm 11\%$

2:Tolerance of Forward Voltage $\pm 0.1V$

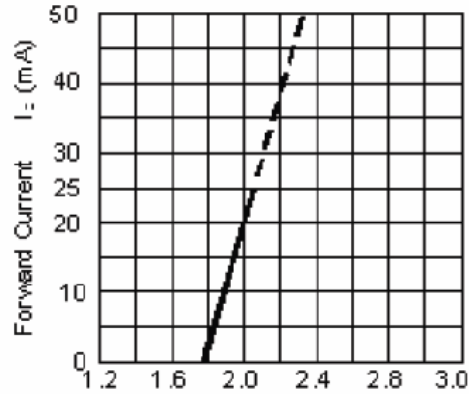
3. Tolerance of The Dominant Wavelength $\pm 1nm$

Typical Electro-Optical Characteristics Curve

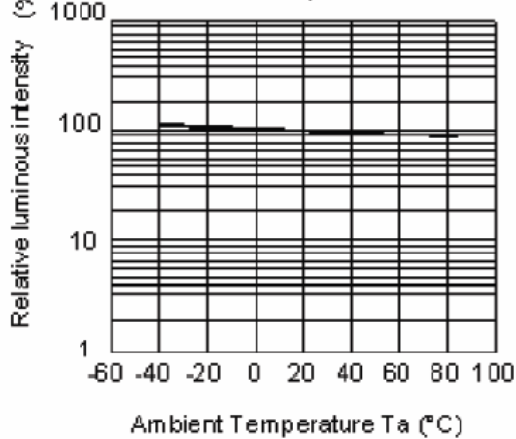
Spectrum Distribution



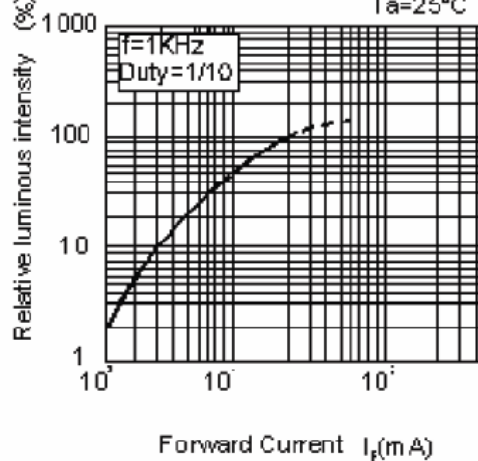
Forward Current vs. Forward Voltage



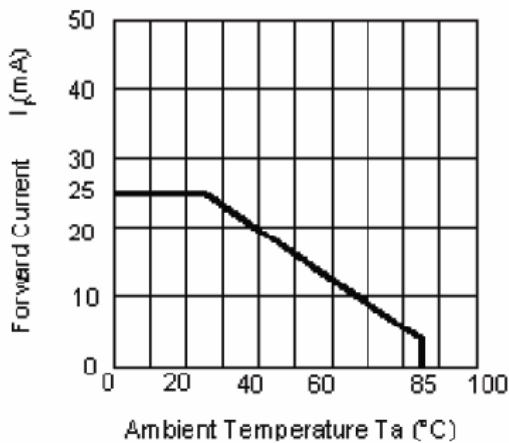
Luminous Intensity vs. Ambient Temperature



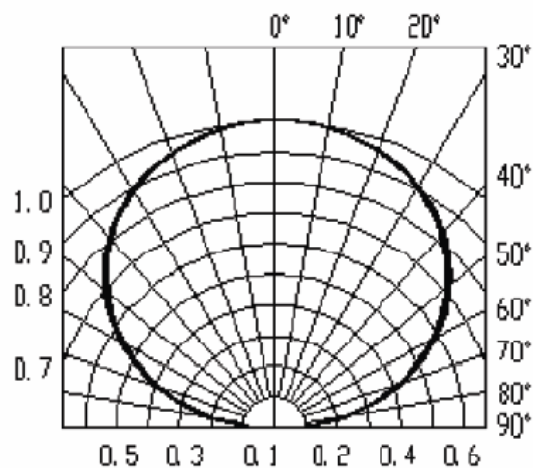
Luminous Intensity vs Forward Current



Forward Current Derating Curve

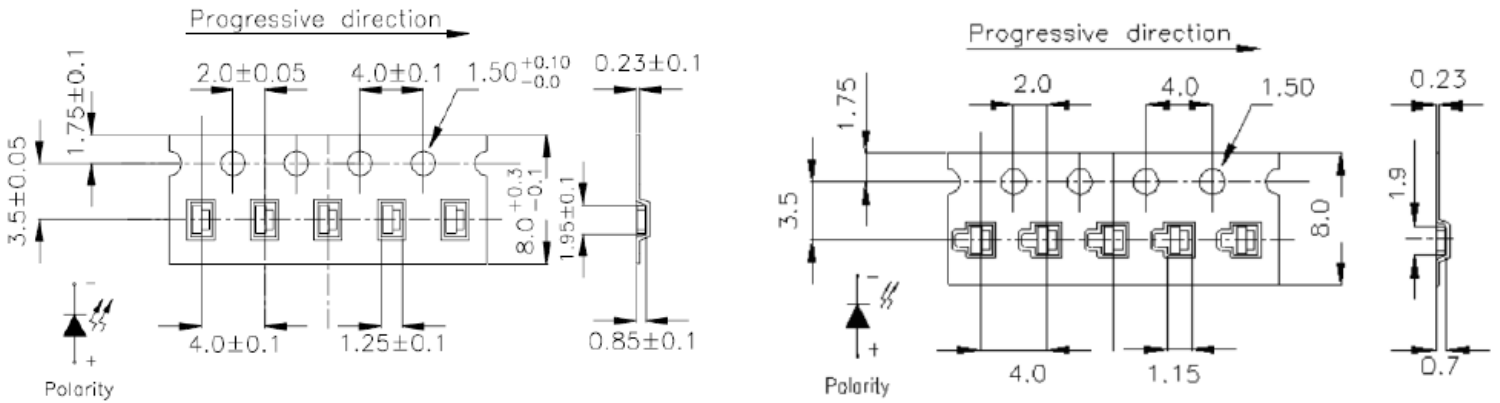


Radiation Diagram



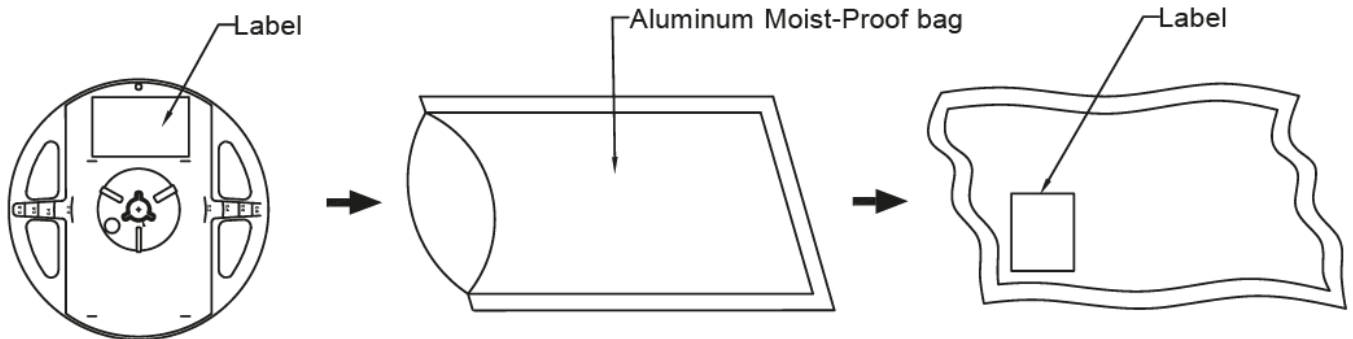
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Carrier Type Dimensions



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

Packing Specifications



Part No.	Description	Quantity/Reel
NMOP-10105-1	8.0mm tape, 7" reel	3000 devices

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Label Explanation



N Neumüller
Elektronik GmbH
www.neumueller.com

Typ / Part No. _____

Date Code / Rank _____

Menge / Quantity _____

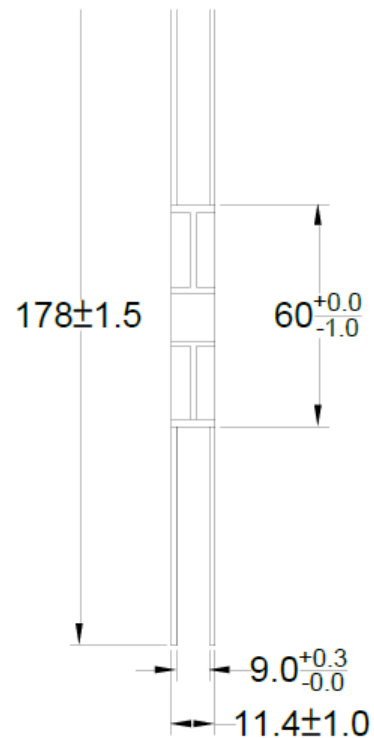
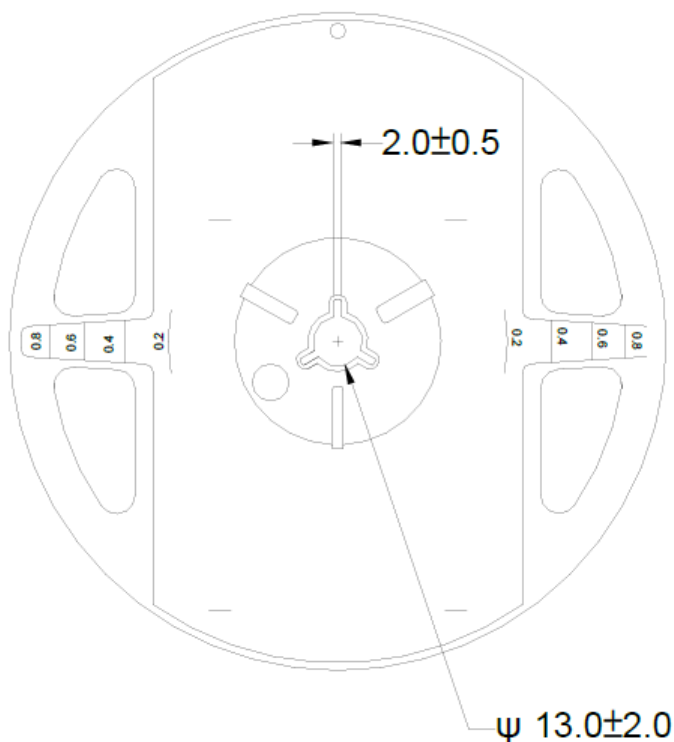
Kunde / Customer _____

BIN : Luminous Intensity

HUE : Dominant Wavelength

VF: Forward Voltage

Reel Dimensions



Precautions For Use:

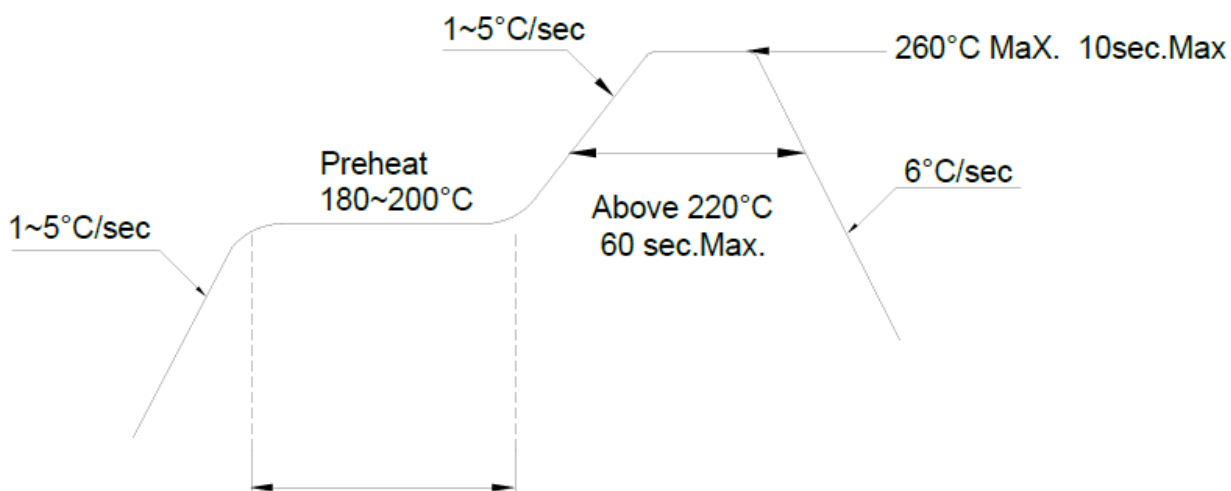
Storage time:

1. Don't open the moisture-resistant bag before the LED products are ready to use.
2. Before used: The LEDs should be kept at 30°C or less and 90 % RH or less.
3. After used: The LEDs floor life is 1 year under 30°C or less and 60 % RH or less. If unused LEDs remain, it should be stored in the moisture-resistant packages.
4. If the LEDs have exceeded the storage time or the moisture absorbent material (Silica gel) has faded away; the baking treatment should be performed by the following conditions. Baking Treatment: 60±5°C for 24 hrs

Over current- protection

The LEDs is sensitive parts, slight voltage shift will cause big change and will cause burn out. Customer must apply resistors for protection. LED soldering

LED Soldering

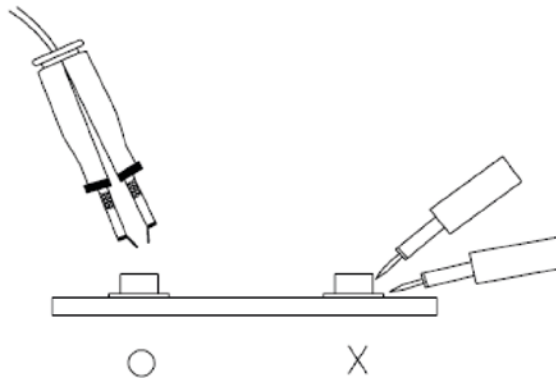


Note:

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.

Repairing

In principle repair should not be done after the LEDs have been soldered. When repairing is unavoidable, it should be confirmed before hand not to be damaged whether the characteristics of the LEDs by repairing and a double-head soldering iron should be used (as below description figure).



Reliability Test:

The reliability of products shall be satisfied with items listed below.

Confidence level 90% | LTPD 10%

No.	Items	Test Condition	Test Hours/Cycles	Sample Size	Ac/Re
1	Temperature Cycle	"H : +100°C 15min ┆ 5 min L : -40°C 15min"	300 Cycles	22 PCS	0/1
2	Thermal Shock	"H : +100°C 5min ┆ 10sec L : -10°C 15min"	300 Cycles	22 PCS	0/1
3	High Temperature Storage	Temp. : 100°C	1000 Hrs.	22 PCS	0/1
4	"High Temperature /High Humidity"	85°C / 85%RH	1000 Hrs.	22 PCS	0/1
5	Low Temperature Storage	Temp. : -40°C	1000 Hrs.	22 PCS	0/1
6	Reflow Soldering	Temp. : 260°C ±5°C Min. 5sec.	6 Min.	22pcs	0/1
7	DC Operating Life	IF = 20 mA	1000 Hrs.	22 PCS	0/1