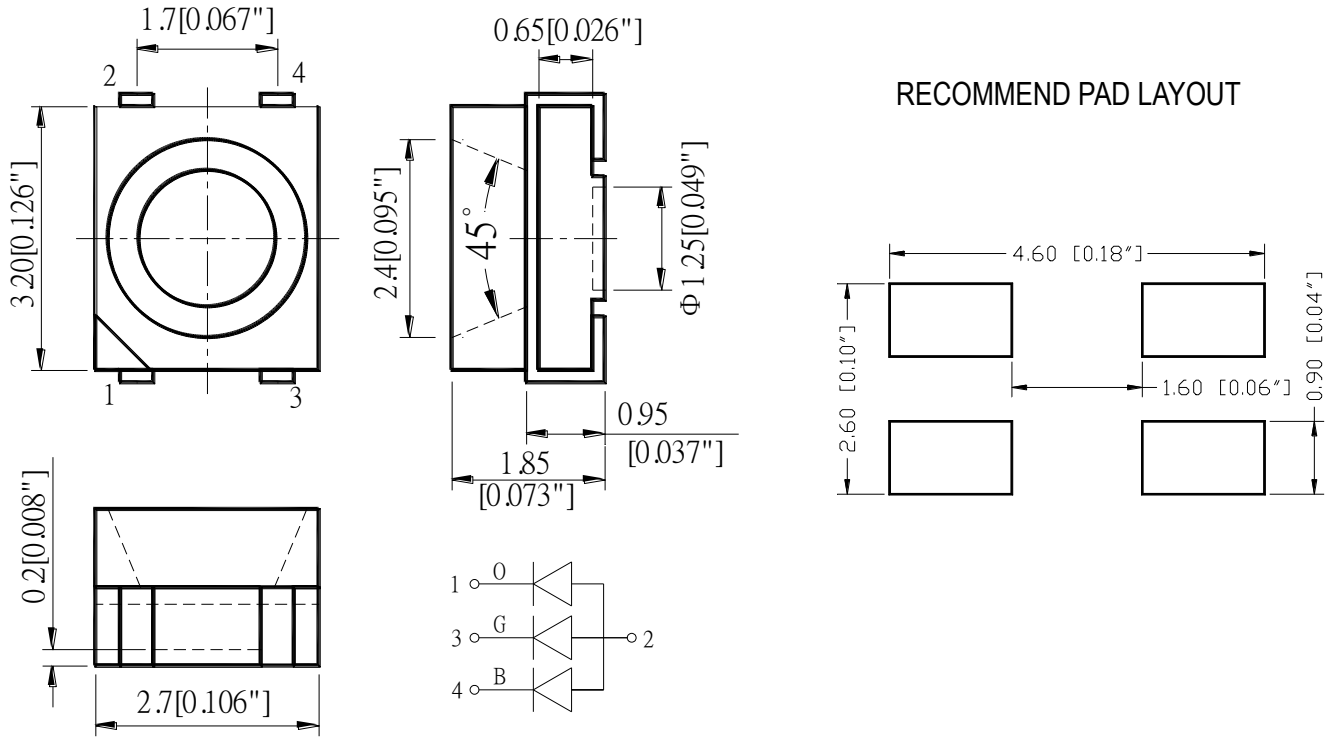


REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

High Performance SMD Full-Color Top LEDs

Part Number: N0M18S11

Package outlines





ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
SENSITIVE DEVICES

ITEM	MATERIALS	
Resin	Silicon	
Lens color	Water transparent	
Dice	Orange	AlGaInP/GaAs
	Green	InGaN
	Blue	InGaN

NOTES:

- All dimensions are in millimeters (inches);
- Tolerances are $\pm 0.2\text{mm}$ (0.008inch) unless otherwise noted.

Rev :	Date	Drawn by :	Checked by :	Approved by :
B	2014/05/27	唐云	許媚鳳	黃靜文

REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

Part Number: N0M18S11

Absolute maximum ratings

($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Value			Unit
		O	G	B	
Power dissipation	Pd	75	111	111	mW
Forward current	If	30			mA
Reverse voltage	Vr	5			V
Operating temperature range	Top	-40 ~+80			$^{\circ}\text{C}$
Storage temperature range	Tstg	-40 ~+85			$^{\circ}\text{C}$
Peak pulsing current (1/8 duty f=1kHz)	Ifp	125			mA

Electro-optical characteristics

($T_A=25^{\circ}\text{C}$)

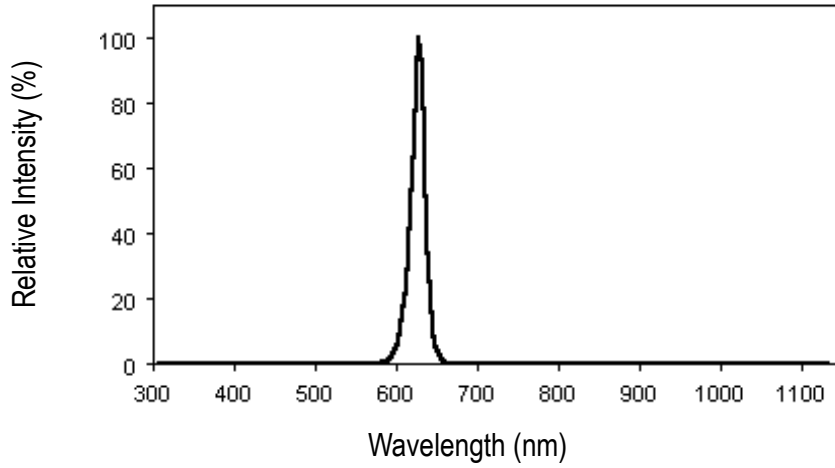
Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
Wavelength at peak emission	If=20mA	λ_{peak} O	--	630	--	nm
		G	--	520	--	
		B	--	465	--	
Spectral half bandwidth	If=20mA	$\Delta\lambda$ O	--	18	--	nm
		G	--	33	--	
		B	--	30	--	
Dominant wavelength	If=20mA	λ_{dom} O	615	620	630	nm
		G	520	525	530	
		B	465	470	475	
Forward voltage	If=20mA	Vf O	1.7	2.0	2.5	V
		G	2.8	3.1	3.7	
		B	2.8	3.1	3.7	
Luminous intensity	If=20mA	Iv O	125	230	320	mcd
		G	500	970	1600	
		B	80	150	250	
Viewing angle at 50% Iv	If=10mA	$2\theta_{1/2}$	--	120	--	Deg
Reverse current	Vr=5V	Ir	--	--	10	μA

REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

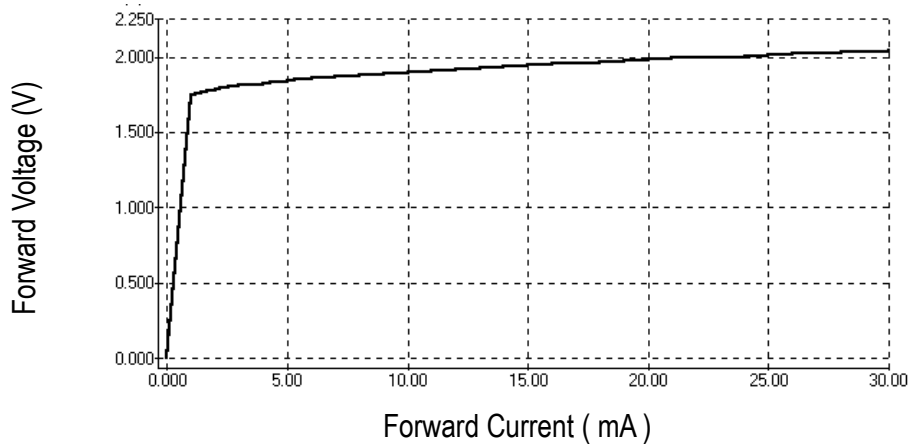
Part Number: N0M18S11

OPTICAL CHARACTERISTIC CURVES (Orange)

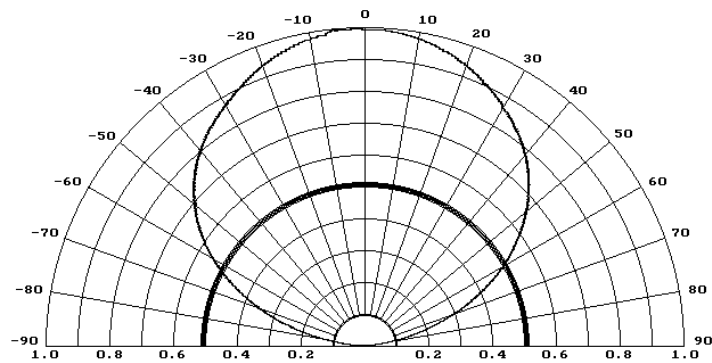
Relative Intensity vs. Wavelength



Forward Current vs. Forward Voltage



Directive Characteristics

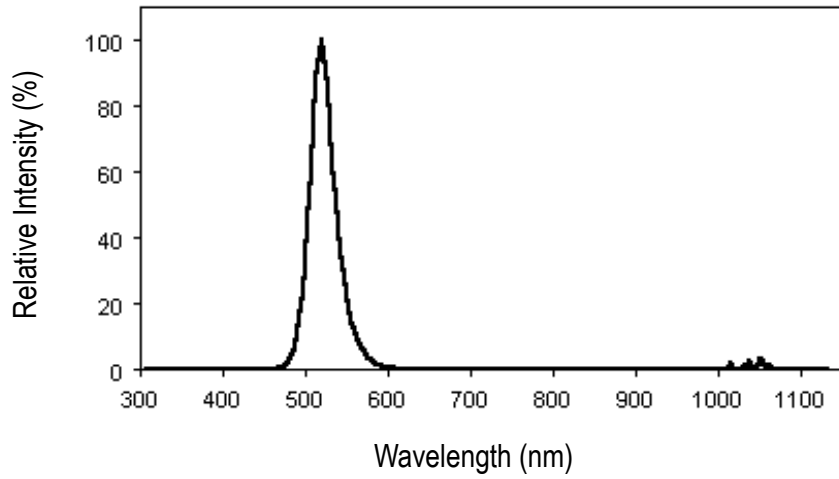


REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

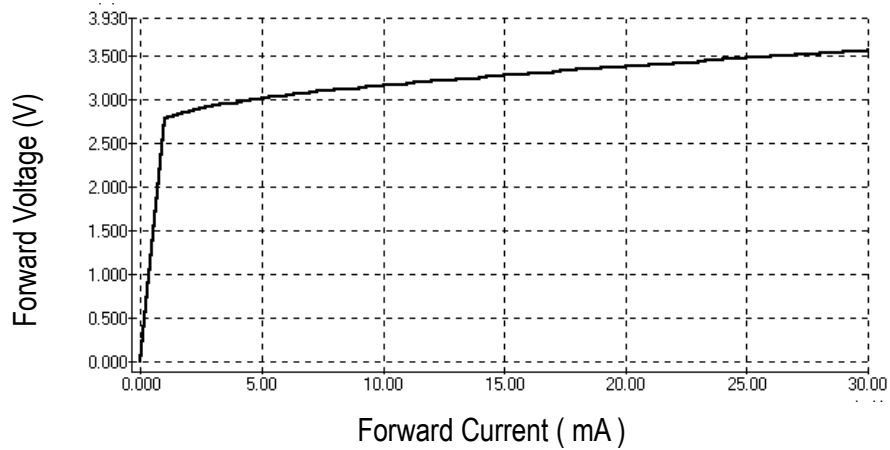
Part Number: N0M18S11

OPTICAL CHARACTERISTIC CURVES (Green)

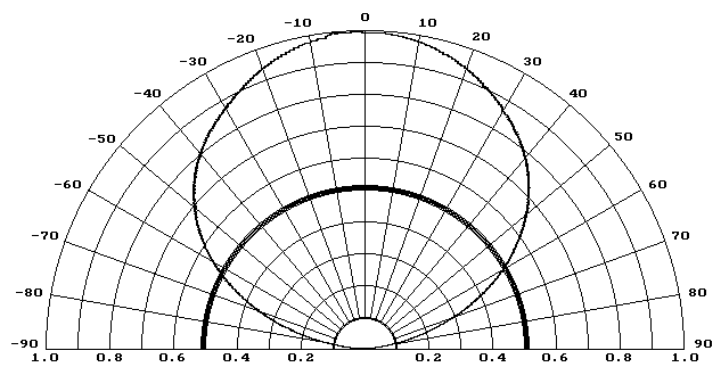
Relative Intensity vs. Wavelength



Forward Current vs. Forward Voltage



Directive Characteristics

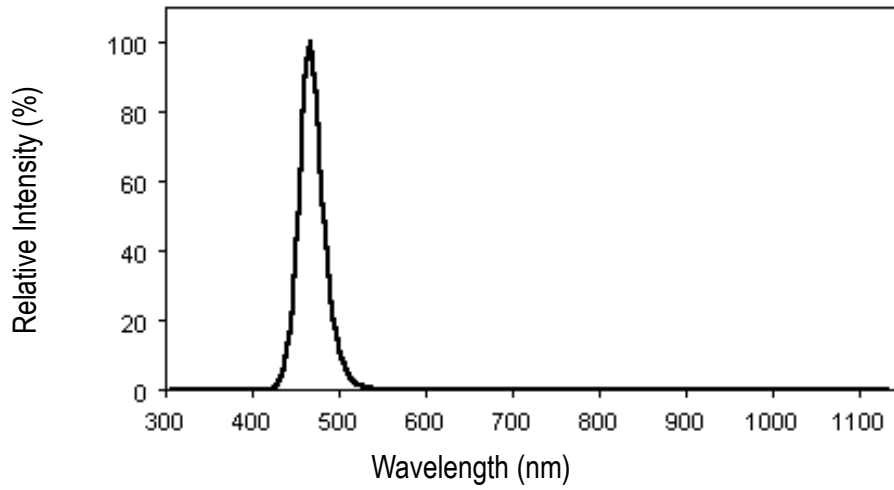


REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

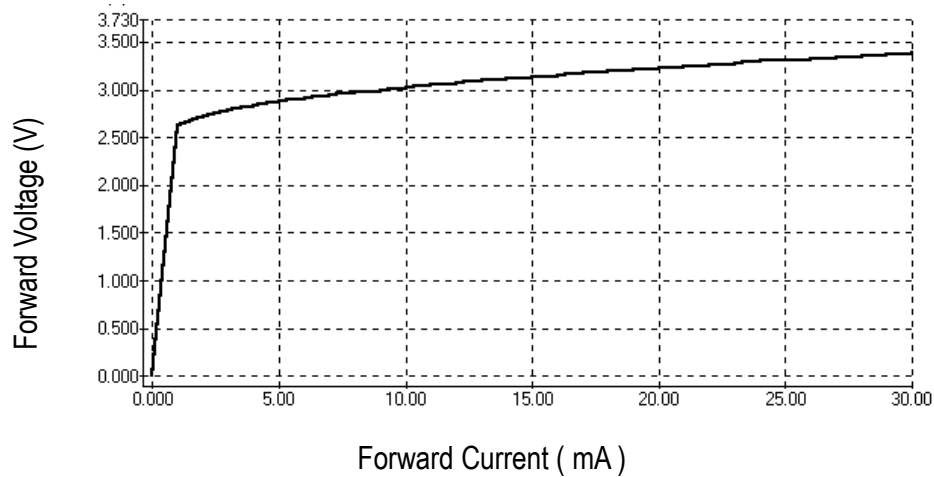
Part Number: N0M18S11

OPTICAL CHARACTERISTIC CURVES (Blue)

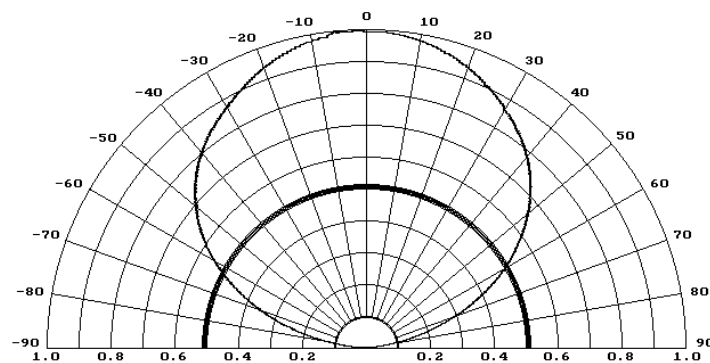
Relative Intensity vs. Wavelength



Forward Current vs. Forward Voltage



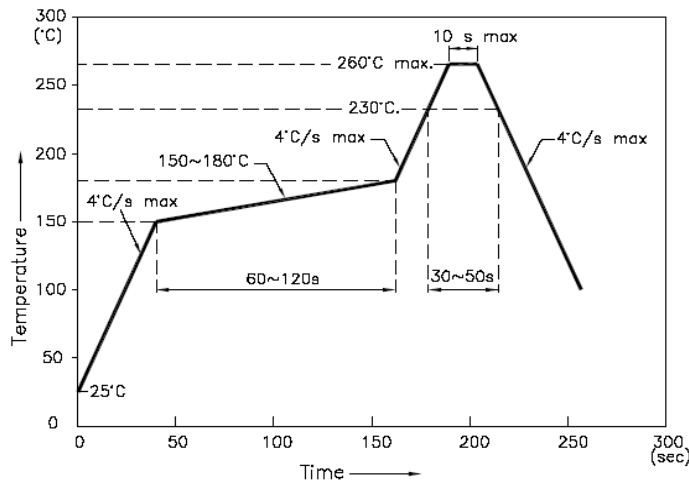
Directive Characteristics



REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

Reflow Profile

■ Reflow Temp/Time



NOTES:

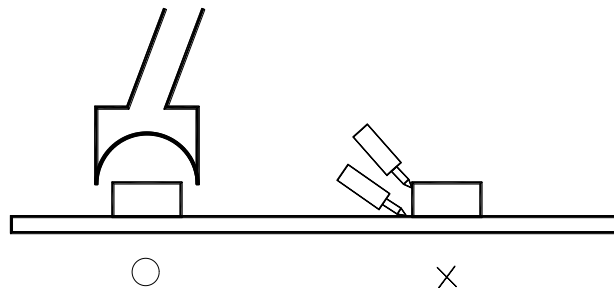
1. We recommend the reflow temperature 245°C (±5°C). the maximum soldering temperature should be limited to 260°C.
2. dont cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

■ Soldering iron

Basic spec is ≤ 5sec when 260°C. If temperature is higher, time should be shorter (+10°C → -1sec). Power dissipation of iron should be smaller than 20W, and temperatures should be controllable. Surface temperature of the device should be under 230°C.

■ Rework

1. Customer must finish rework within 5 sec under 260°C.
2. The head of iron can not touch copper foil
3. Twin-head type is preferred.

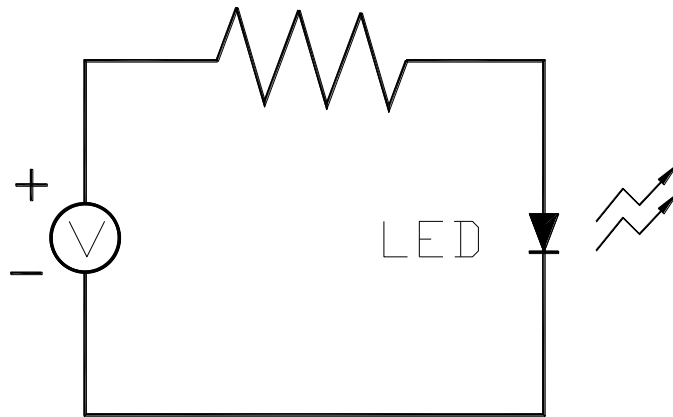


- Avoid rubbing or scraping the resin by any object, during high temperature, for example reflow 、 solder etc.

REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

Test circuit and handling precautions

■ Test circuit



■ Handling precautions

1. Over-current-proof

Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Shelf life in sealed bag: 12 month at 5°C~30°C and < 60% R.H;

3. After the package is Opened:

3.1. It is recommended to baking before the first use:

Baking condition:

a. $60 \pm 3^\circ\text{C}$ x (36~48hrs) and < 5%RH, taped reel type ;

b. $110 \pm 3^\circ\text{C}$ x (8~16hr), bulk type ;

3.2 The products should be used within a week or they should be keeping to stored at ≤ 20 R.H. with zip-lock sealed:

a. It is recommended to baking before soldering when the pack is unsealed after 72hrs ;

b. Baking condition as 3.1 baking condition.

REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

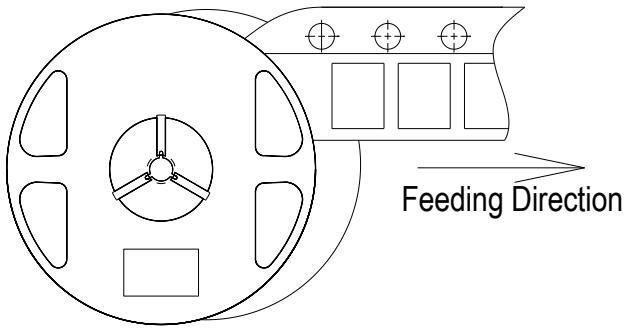
Test items and results of reliability

Type	Test Item	Test Conditions	Note	Number of Damaged
Environmental Sequence	Temperature Cycle	-20°C 30min ↑ ↓ 80°C 30min	100 cycle	0/22
	Thermal Shock	-20°C 15min ↑ ↓ 80°C 15min	100 cycle	0/22
	High Humidity Heat Cycle	30°C ↔ 65°C 90%RH 24hrs/1cycle	10 cycle	0/22
	High Temperature Storage	T _a =80°C	1000 hrs	0/22
	Humidity Heat Storage	T _a =60°C RH=90%	1000 hrs	0/22
	Low Temperature Storage	T _a =-30°C	1000 hrs	0/22
Operation Sequence	Life Test	T _a =25°C I _F =20mA	1000 hrs	0/22
	High Humidity Heat Life Test	60°C RH=90% I _F =10mA	500 hrs	0/22
	Low Temperature Life Test	T _a =-20°C I _F =20mA	1000 hrs	0/22

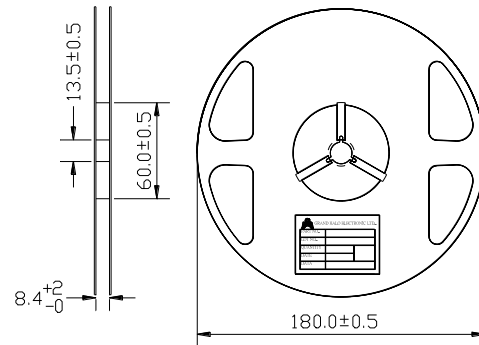
PACKAGING SPECIFICATIONS

2030 Full-Color High Performance SMD Top LEDs Packaging Specifications

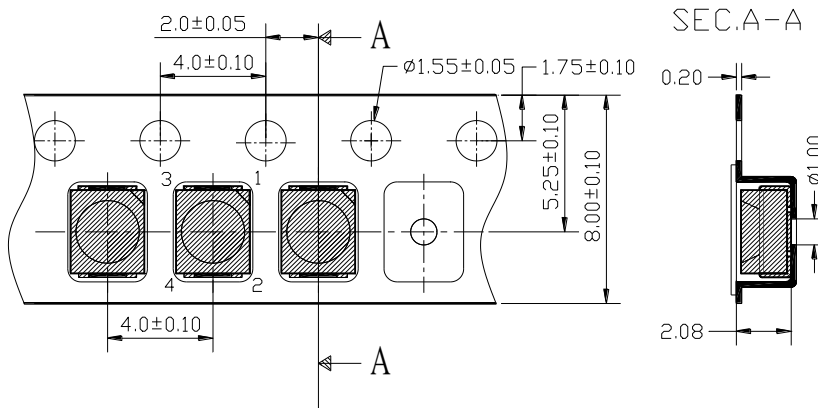
● Feeding Direction



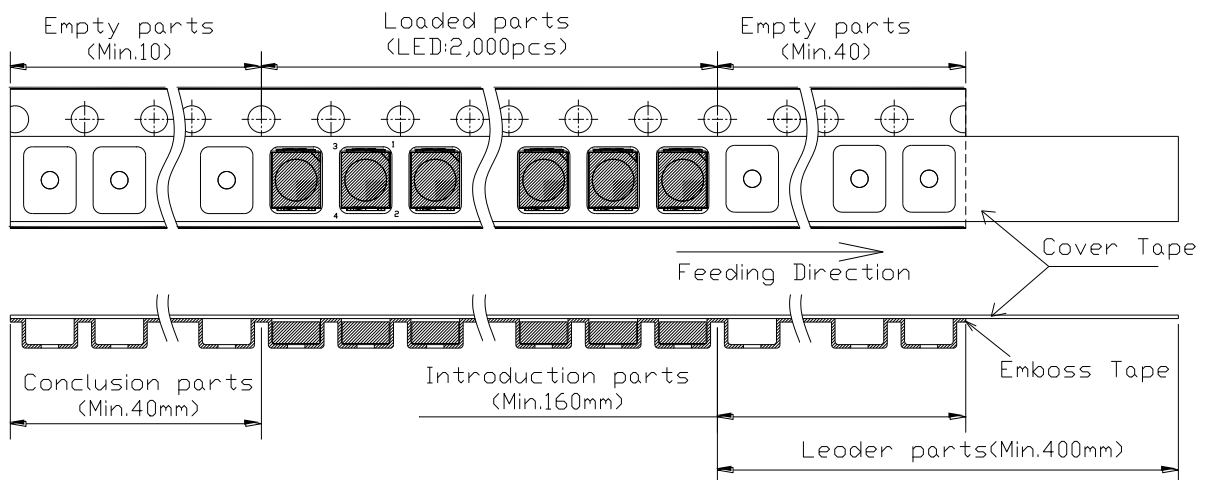
● Dimensions of Reel (Unit: mm)



● Dimensions of Tape (Unit: mm)



● Arrangement of Tape



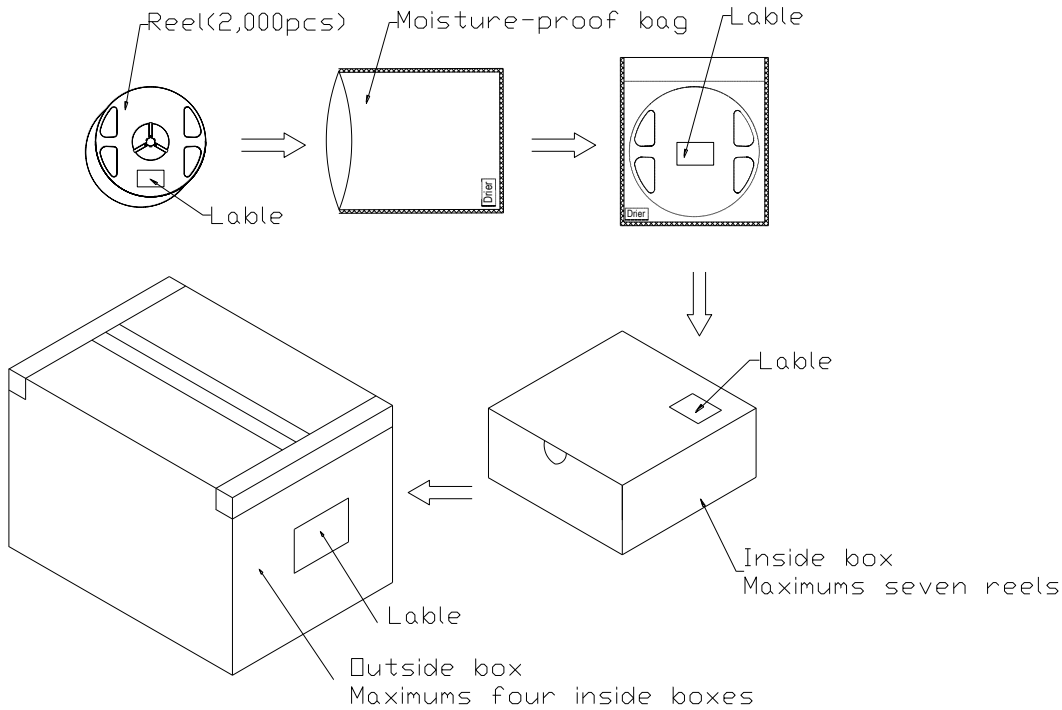
NOTES

1. Empty component pockets are sealed with top cover tape;
2. The maximum number of missing lamps is two.
3. 2,000pcs/Reel

PACKAGING SPECIFICATIONS

2030 Full-Color High Performance SMD Top LEDs Packaging Specifications

- Packaging specifications



NOTES:

Reeled products (numbers of products are 2,000 pcs) packed in a seal off moisture-proof bag along with a desiccant one by one, Seven moisture-proof bag of maximums (total maximum number of products are 14,000 pcs) packed in an inside box (size: about 238mm x about 194mm x about 102mm) and four inside boxes of maximums are put in the outside box (size: about 410mm x about 254mm x about 229mm) Together with buffer material, and it is packed. (Part No., Lot No., quantity should appear on the label on the moisture-proof bag, part No. And quantity should appear on the label on the cardboard box.) The number of the loading steps of outside box (cardboard box) has it to three steps.

REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs**反射蓋灌注型高效率發光二極體****Part Number: N0M18S11****Forward Voltage Rank Combination (IF=20mA)**

Rank Code		Min.	Max.	Unit
Orange	□	1.7	2.5	V
Green	f	2.8	3.1	
	g	3.1	3.4	
	h	3.4	3.7	
Blue	f	2.8	3.1	
	g	3.1	3.4	
	h	3.4	3.7	

Luminous Intensity Rank Combination (IF=20mA)

Rank Code		Min.	Max.	Unit
Orange	K	125	160	mcd
	L	160	200	
	M	200	250	
	N	250	320	
Green	Q	500	630	
	R	630	800	
	S	800	1000	
	T	1000	1250	
	U	1250	1600	
Blue	I	80	100	
	J	100	125	
	K	125	160	
	L	160	200	
	M	200	250	

REFLECTOR COATING TYPE HIGH-PERFORMANCE LEDs

反射蓋灌注型高效率發光二極體

Part Number: N0M18S11

Dominant wavelength Rank Combination (IF=20mA)

Rank Code		Min.	Max.	Unit
Orange	s	615	620	nm
	t	620	625	
	u	625	630	
Green	U	520	522.5	
	V	522.5	525	
	W	525	527.5	
	X	527.5	530	
Blue	G	465	467.5	
	H	467.5	470	
	I	470	472.5	
	J	472.5	475	

Group Name on Label (Example DATA: □Mt hSW gKI 20)

DATA: □Mt Orange	hSW Green	gKI 20 Blue	Vf(V)	Iv (mcd)	λd (nm)	Test Condition
Orange	□→M→t→20		1.7~2.5	200~250	620~625	IF=20mA
Green	h→S→W→20		3.4~3.7	800~1000	525~527.5	
Blue	g→K→I→20		3.1~3.4	125~160	470~472.5	

NOTE:

1. The tolerance of luminous intensity (Iv) is $\pm 15\%$.
2. The tolerance of dominant wavelength is $\pm 1\text{nm}$.
3. This specification is preliminary.