

MP-3030-11F2

Mid Power LED



Features

- High efficacy
- CRI Options: Minimum 70,80 and 90
- Low thermal resistance
- Compatible with automatic placement equipment
- Compatible with infrared reflow solder process
- Sulfur resistant
- RoHs and REACH compliant



Applications

- Replacement lamps
- Panel lighting
- Down lights
- Horticulture

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PRODUCT ORDERING AND SHIPPING PART NUMBER NOMENCLATURE

All mid power products are packaged and labeled with part numbers as outlined in below. When shipped, each reel will contain only a single flux and voltage bin. The part number designation is as follows:

3030 Mid Power LED

Mid Power	Package Type	Package Configurator	Nominal CCT	Minimum CRI
MP	3030	11F2	##	##

Example :

The part number MP-3030-11F2-30-80 refers to a 3030 emitter with nominal color temperature of 3,000k and minimum CRI of 80. Please refer to page for a description of available CCT and CRI combinations.

PRODUCT SELECTION TABLE

Test condition = 65 mA ($T_c=25^{\circ}\text{C}$)

Nominal CCT	Minimum CRI	Ordering Part Number	Minimum Flux @ 65mA (Lumens)	Typical Flux @65mA (Lumens)	Typical PPF (umol/s)	Typical PPF/W (umol/J)
2700K	70	MP-3030-11F2-27-70	36.0	38.0		
	80	MP-3030-11F2-27-80	33.5	35.5	0.53	3.01
	90	MP-3030-11F2-27-90	29.0	31.0		
3000K	70	MP-3030-11F2-30-70	36.0	39.0		
	80	MP-3030-11F2-30-80	35.0	37.0	0.56	3.18
	90	MP-3030-11F2-30-90	30.0	32.0		
3500K	70	MP-3030-11F2-35-70	38.0	41.0		
	80	MP-3030-11F2-35-80	36.5	38.5	0.58	3.36
	90	MP-3030-11F2-35-90	31.5	33.5		
4000K	70	MP-3030-11F2-40-70	38.0	41.0		
	80	MP-3030-11F2-40-80	38.0	40.0	0.60	3.40
	90	MP-3030-11F2-40-90	33.0	35.0		
5000K	70	MP-3030-11F2-50-70	38.0	41.0		
	80	MP-3030-11F2-50-80	38.0	40.0	0.58	3.31
	90	MP-3030-11F2-50-90	33.0	35.0		
5700K	70	MP-3030-11F2-57-70	38.0	41.0		
	80	MP-3030-11F2-57-80	37.5	39.5	0.57	3.26
	90	MP-3030-11F2-57-90	32.5	34.5		
6500K	70	MP-3030-11F2-65-70	38.0	41.0		
	80	MP-3030-11F2-65-80	37.5	39.5	0.55	3.18
	90	MP-3030-11F2-65-90	32.5	34.5		



BINNING STRUCTURE

All MP-3030-11F2 monochromatic LEDs are tested for luminous flux/ dominant wavelength and placed into one of the following flux/ wavelength bins. The binning structure is universally applied across each monochromatic color of the MP-3030-11F2 product line.

Flux Bins

Bin Code	Minimum Flux (Lumens)	Maximum Flux (Lumens)
D7	28.0	30.0
D8	30.0	32.0
D9	32.0	34.0
E1	34.0	36.0
E2	36.0	38.0
E3	38.0	42.0
E4	42.0	46.0

Forward Voltage Bins

Bin Code	Minimum Voltage (Volts)	Maximum Voltage (Volts)
Y1	2.5	2.6
Z1	2.6	2.7
A1	2.7	2.8

* Tolerance of measurements of the Forward Voltage is $\pm 0.1V$

MP-3030 MID POWER OPERATING CHARACTERISTICS

Optical and Electrical Characteristics(Tc= 25°C)

Parameter	Symbol	Minimum	Typical	Maximum	Unit	Condition
Forward Voltage	V_f	2.55	2.65	2.75	V	$I_f=65\text{mA}$
Reverse Current	I_r			10	μA	$V_r=5\text{V}$
View Angle	$2\theta^{1/2}$		120		°	$I_f=65\text{mA}$
Thermal Resistance	$R_{th_{j-sp}}$		10		°C/W	$I_f=65\text{mA}$
Electrostatic Discharge	ESD	8000			V	

Note 1: To prevent damage refer to operating conditions and derating curves for appropriate maximum operating conditions

Note 2: Maximum operating case temperature combined with maximum drive current defines the total maximum operating condition for the device. To prevent damage, please follow derating curves for all operating conditions.

Note 3: Mid power LEDs are designed for operation up to an absolute maximum forward drive current as specified below. Product lifetime data is specified at typical forward drive currents. Sustained operation at absolute maximum currents will result in a reduction of device lifetime compared to typical forward drive currents. Actual device lifetimes will also depend on case temperature. Refer to the current vs. case temperature derating curves for further information.

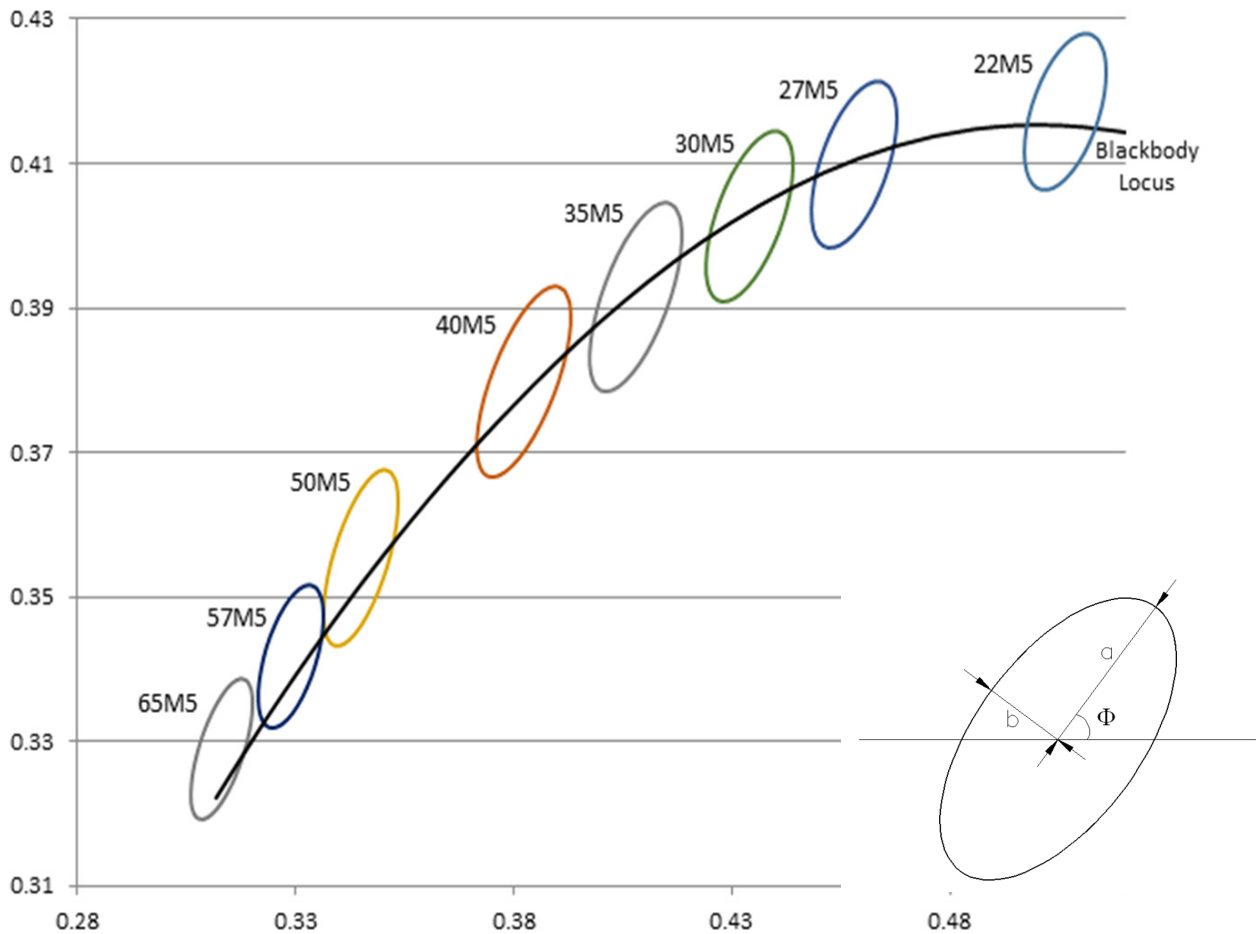
Note 4: Caution must be taken not to stare at the light emitted from these LEDs. Under special circumstances, the high intensity could damage the eye.

Absolute Maximum Ratings

Parameter	Symbol	Rating	Unit
Forward Current	I_f	400	mA
Pulse Forward Current	I_{fp}	600	mA
Power Dissipation	P_d	1160	mW
Reverse Voltage	V_r	5	V
Operating Temperature	T_{opr}	-40~+85	°C
Storage Temperature	T_{stg}	-40~+85	°C
Junction Temperature	T_j	125	°C



CHROMATICITY DIAGRAM



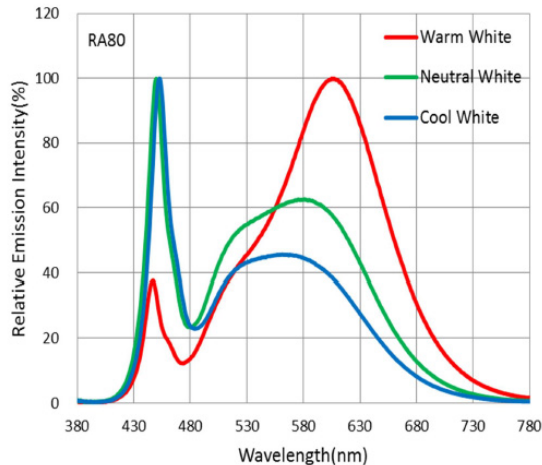
Color Bins

Color Code	Center		Radius		Angle(deg)
	x	y	a	b	Φ
22M5	0.5065	0.4171	0.012500	0.007000	53.00
27M5	0.4582	0.4099	0.013500	0.007000	53.42
30M5	0.4342	0.4028	0.013900	0.006800	53.13
35M5	0.4080	0.3916	0.015450	0.006900	54.00
40M5	0.3825	0.3798	0.015650	0.006700	53.43
50M5	0.3451	0.3554	0.013700	0.005900	59.37
57M5	0.3290	0.3417	0.011175	0.005500	58.35
65M5	0.3130	0.3290	0.011150	0.004750	58.34

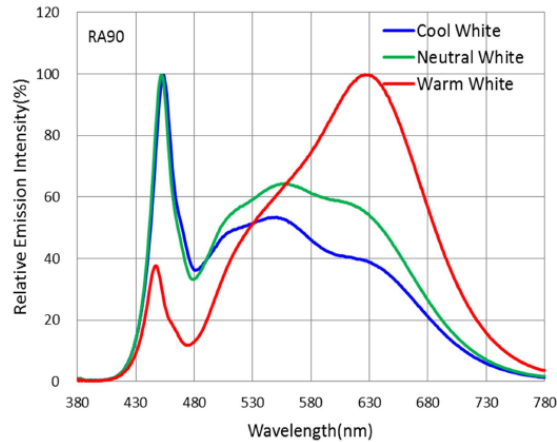


TYPICAL OPTICAL/ELECTRICAL CHARACTERISTICS GRAPHS

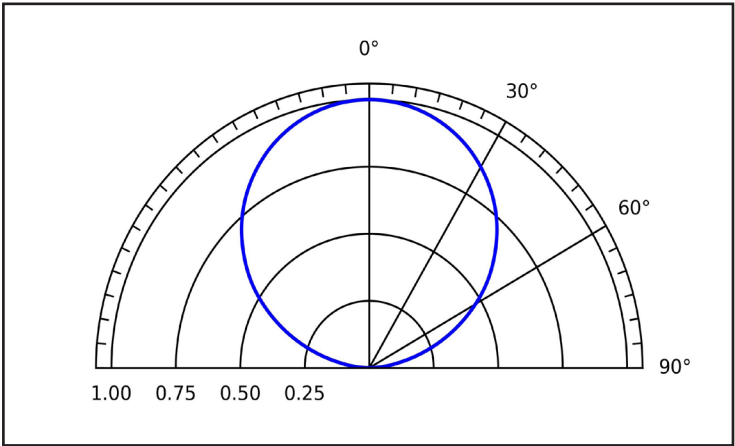
Color Spectrum (Ra≥80 Tc=25°C)



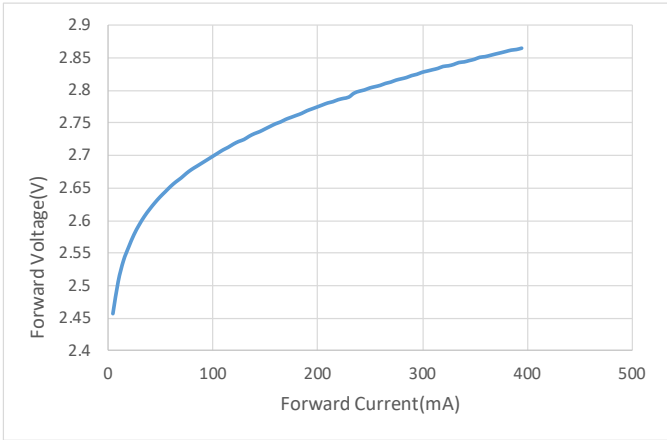
Color Spectrum (Ra≥90 Tc=25°C)



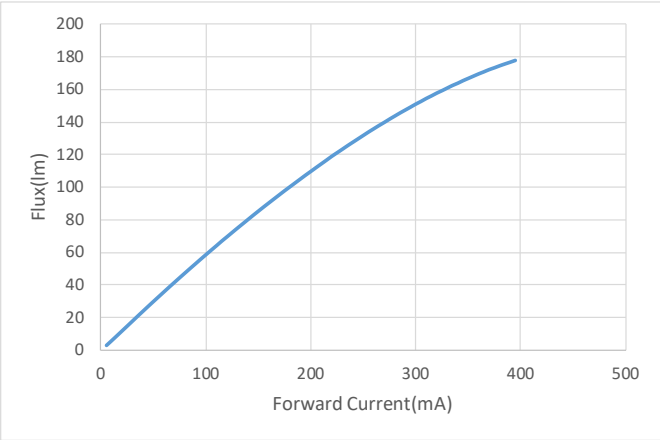
Viewing Angle Distribution (Tc = 25°C)



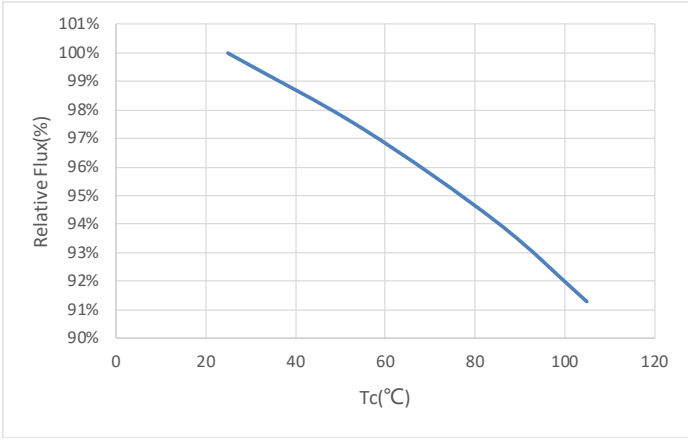
Forward Current vs. Forward Voltage (Tc = 25°C)



Forward Current vs. Relative Intensity (Tc = 25°C)



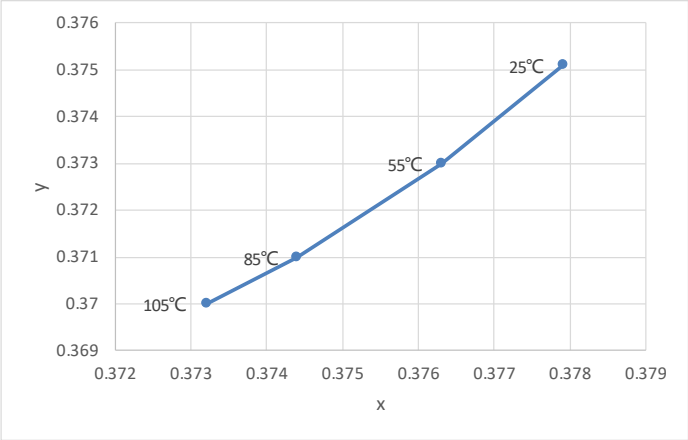
Case Temperature vs. Relative Luminous Flux



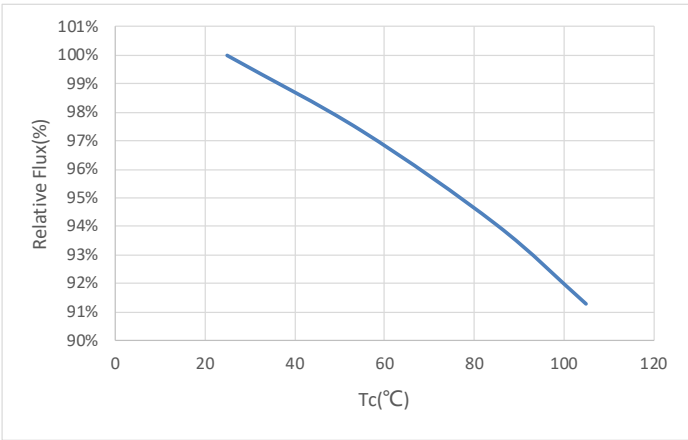


TYPICAL OPTICAL/ELECTRICAL CHARACTERISTICS GRAPHS

Case Temperature VS. CIE_x, Y SHIFT

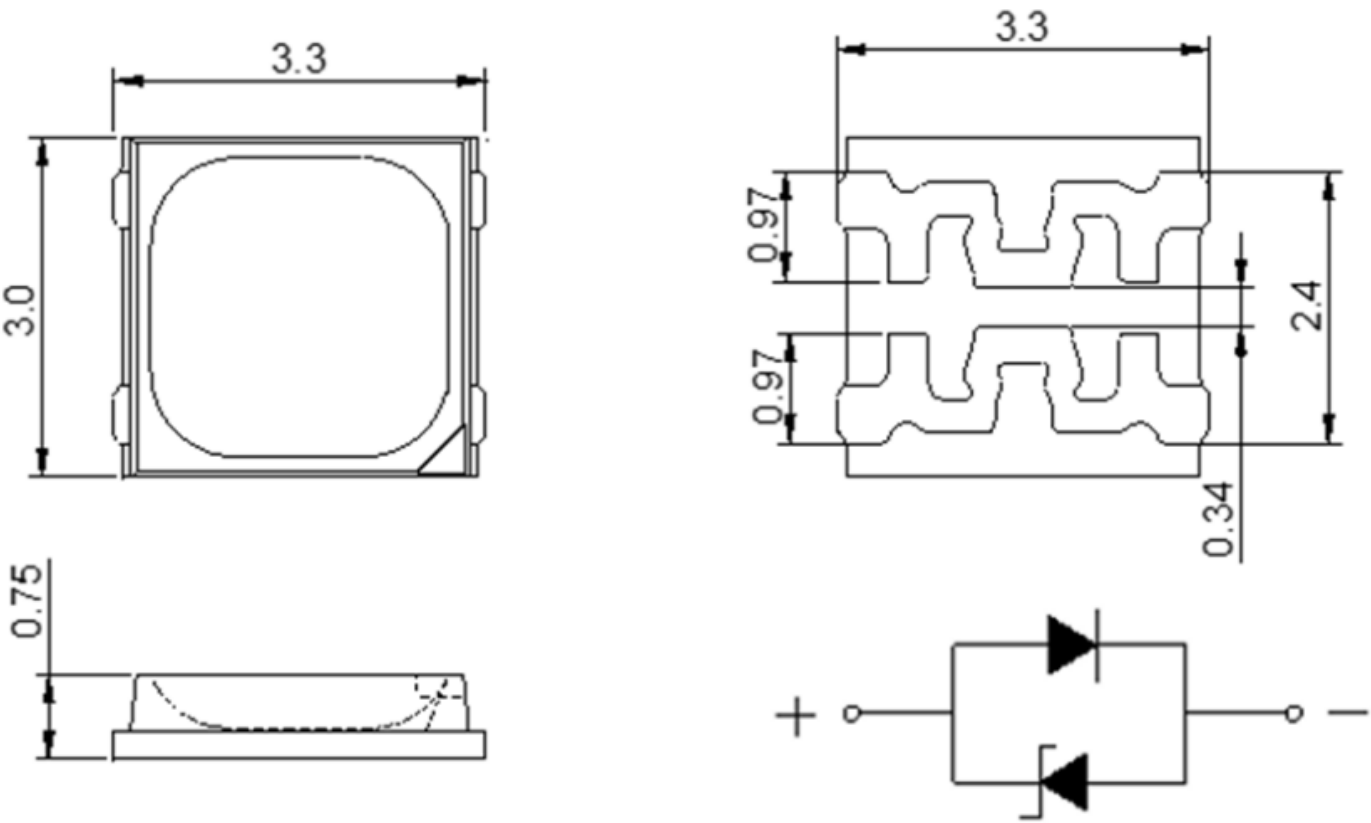


Case Temperature--Forward Voltage



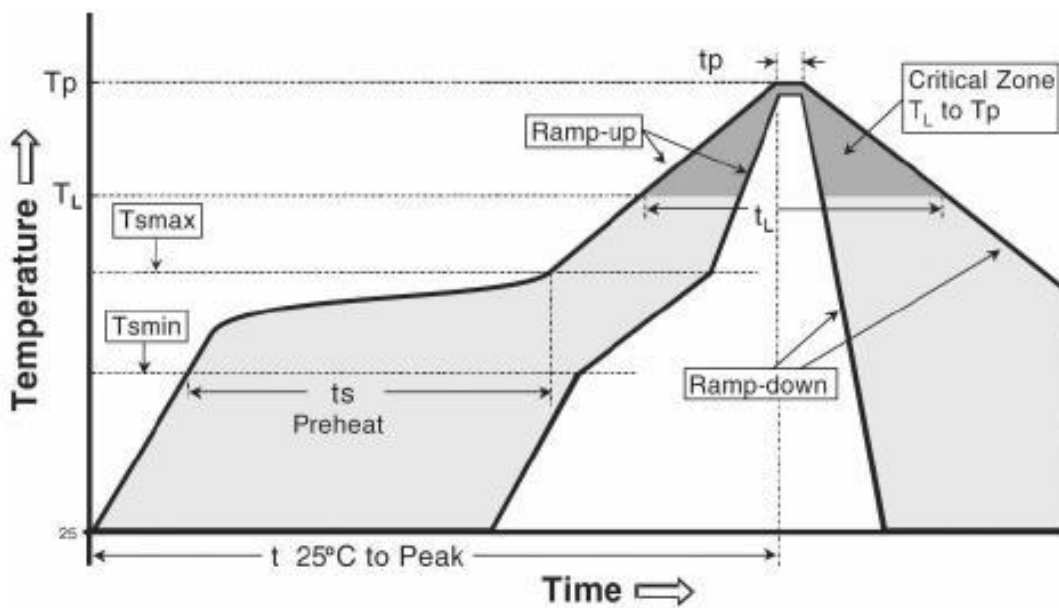


PACKAGE DIMENSION (MM) AND SOLDERING PAD PATTERN



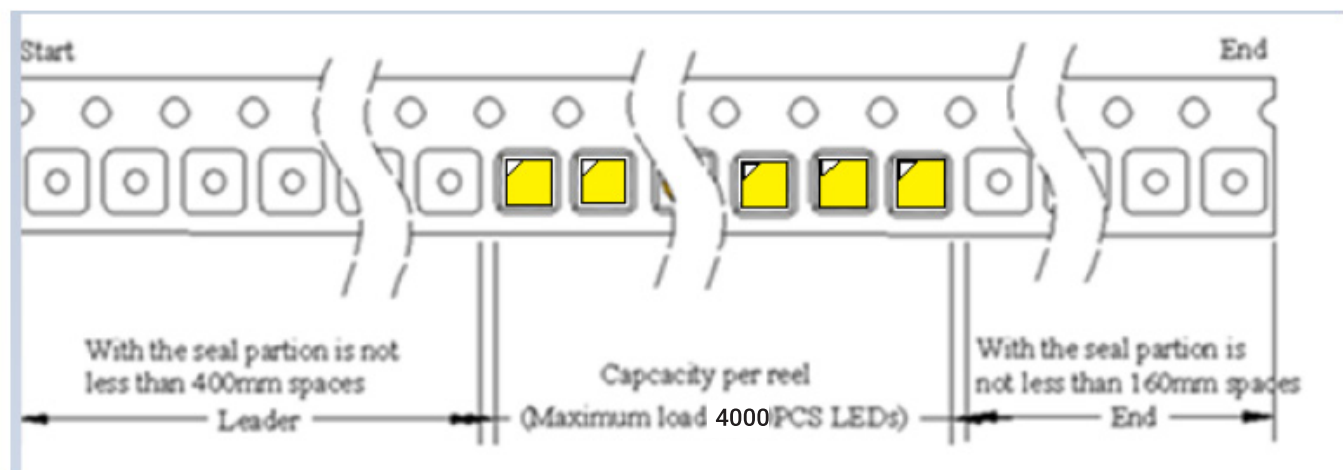
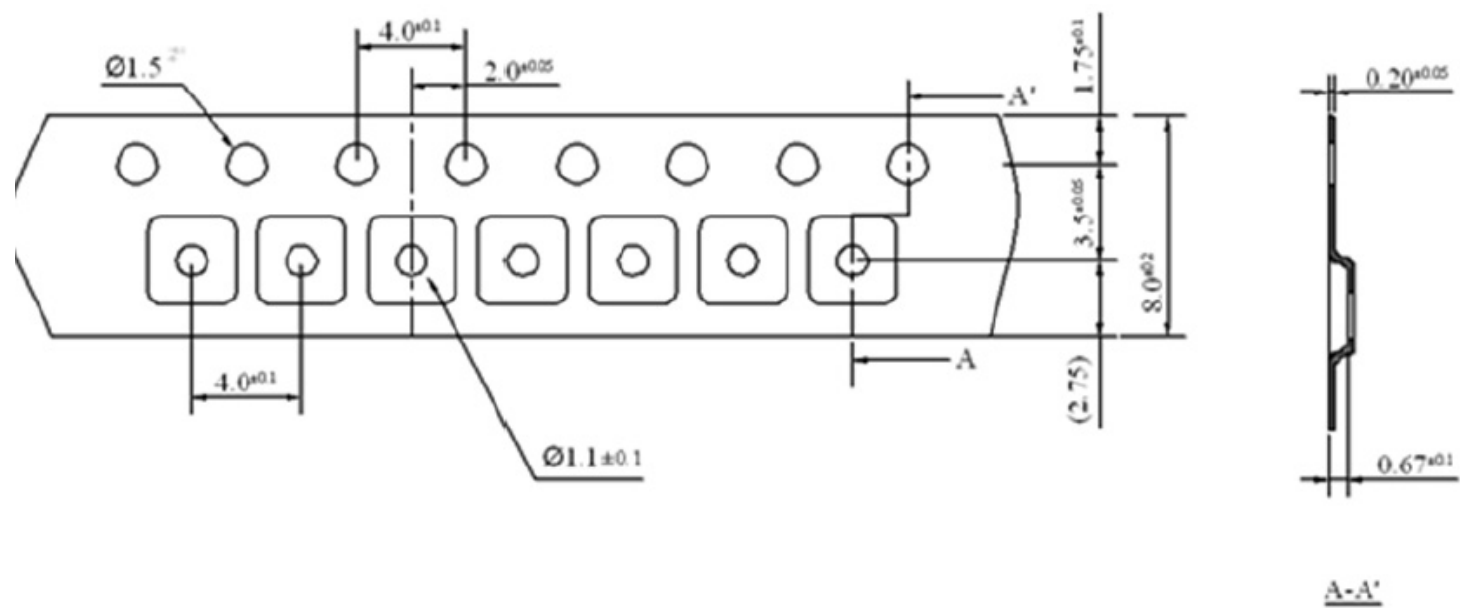
Note: tolerance : .X: ±0.10mm .XX: ±0.05mm

SOLDER PROFILE



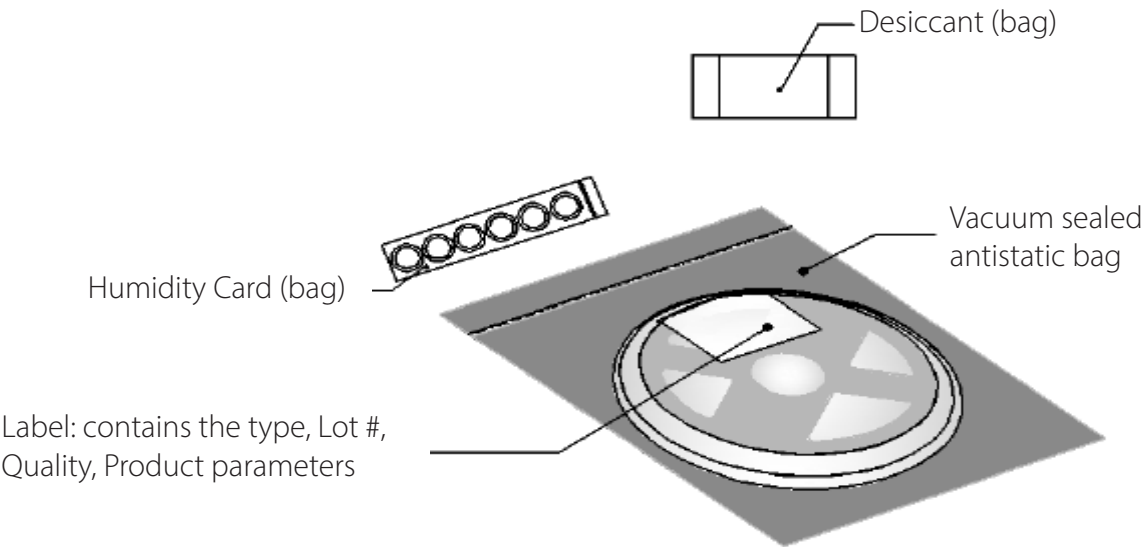
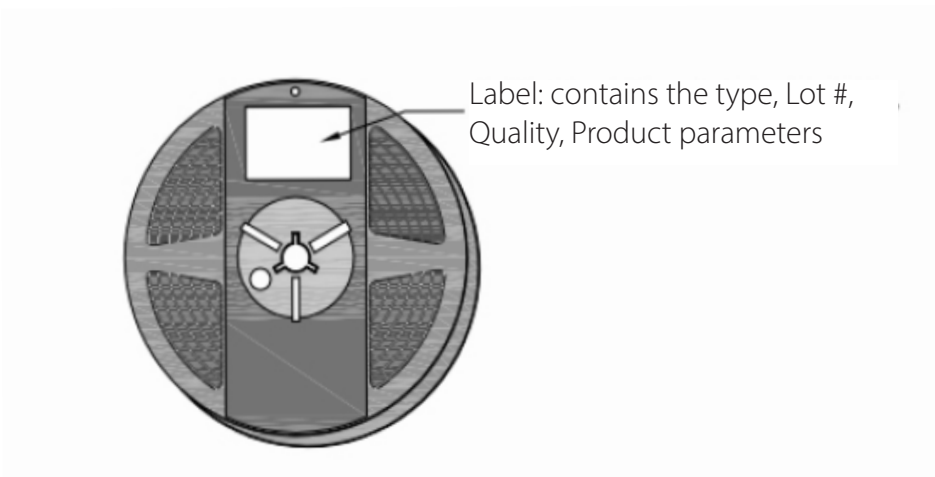
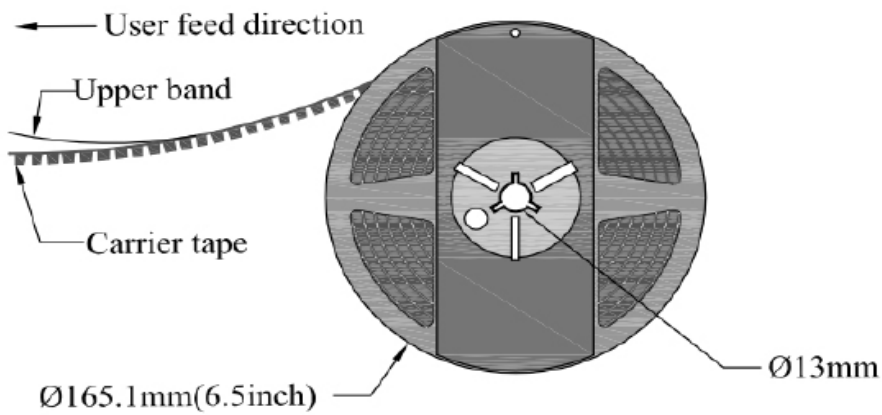
Reflow soldering	
Temperature Min (T _{smin})	138° C
Temperature Max (T _{smax})	187° C
Time(ts)from (T _{smin} to T _{smax})	60-120 seconds
Ramp-up rate (TL to T _p)	3° C/seconds max
Liquidous temperature(TL)	195° C
Time(t _L) maintained above TL	60-150 seconds
Peak package body temperature(T _p)	205°C max
Time (t _p) within 5° C of the specified classification temperature (T _c).	30 seconds max
Ramp-down rate (T _p to TL)	6°C/second max
Time 25 °C to peak temperature	8 min max

Package Dimensions of Type(mm)



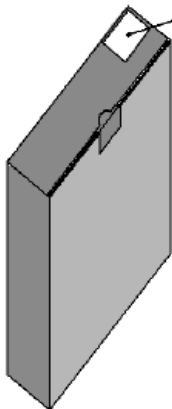
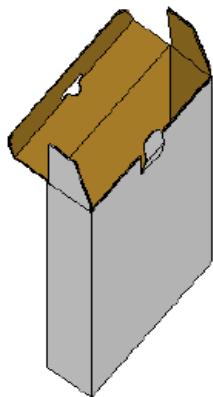


Package Dimensions of Reel(mm)



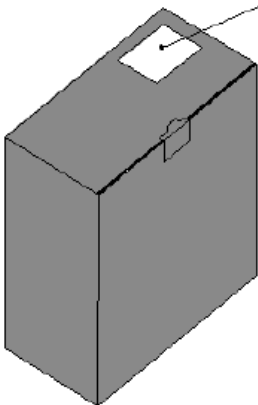
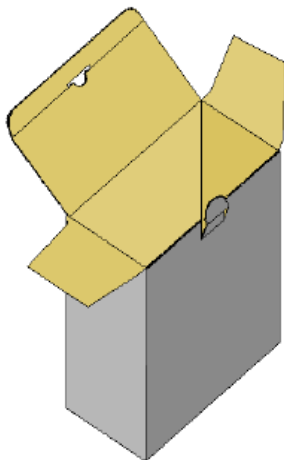


BOX PACKAGING



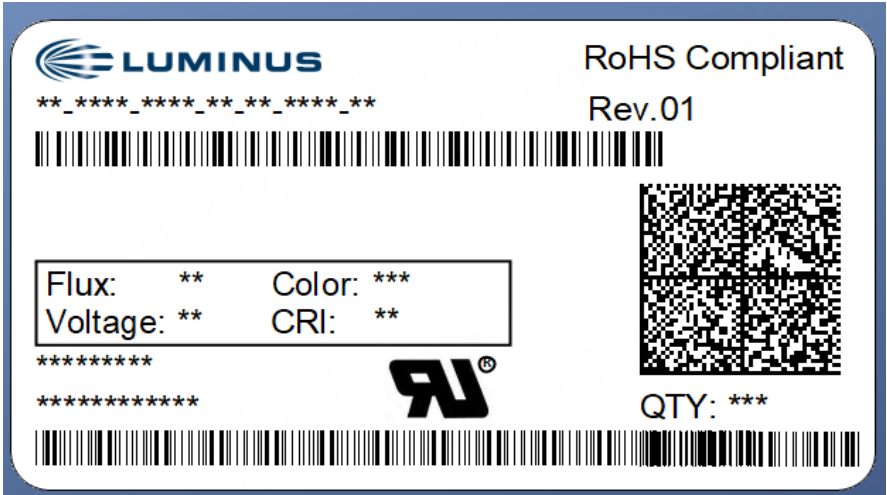
Label: contains the type,
Lot #, Quality, Product
parameters

*Capacity 5 reels per box



Label: contains the type,
Lot #, Quality, Product
parameters

*Capacity 10 reels per box



PRECAUTION FOR USE

STORAGE

1. This device is rated at MSL 3 per JEDEC J-STD-020 standard.
2. Recommended storage condition:
At 5 °C- 30 °C and relative humidity 60% RH in its original package
3. After this bag is opened, devices that will be applied to infrared reflow, vapor - phase reflow, or equivalent soldering process must be:
 - a) Completed within 168 hours
 - b) Stored at less than 60%RH
 - c) If not completely used within 168 hours, seal the remaining in the moisture barrier bag
4. Devices require baking before mounting, if 3 a) is not met.
5. If baking is required, devices must be baked under below conditions:
24 hours at 60C+/-5C

STATIC ELECTRICITY

1. The products are sensitive to static electricity, and care should be taken when handling them.
2. Static electricity or surge voltage will damage the LEDs. It is recommended to wear an anti-electrostatic wristband or anti-electrostatic gloves when handling the LEDs.
3. All devices, equipment and machinery must be properly grounded. It is recommended that measures be taken against surge voltage to the equipment that mounts the LEDs.