

M63 RGBW
High Power Multi-Color LED

The M63 RGBW LED from SemiLEDs brings industry leading technology to the solid state lighting market with its high reliability and performance. It is ideal for color changing applications where a high output intense light source is required, such as stage and entertainment lighting, and for general outdoor and indoor lighting.

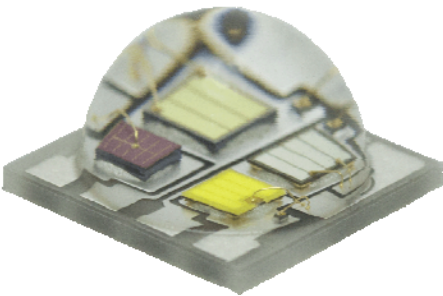


Table of Contents

Absolute Maximum Ratings	1
Flux Characteristics	1
Relative Spectral Characteristics	2
Relative Electrical Characteristics	2
Typical Relative Luminous Flux vs. Forward Current	4
Typical Spatial Distribution	6
Thermal Design Curve	7
Mechanical Dimensions and Pad Configuration	9
Shipping Package Information	10
Recommended Soldering Profile	12
LED Handling Information	13
Lens Handling	13
Lens Cleaning	13
Carrier Tape Handling	14

RoHS Compliant

Absolute Maximum Ratings (T_j = 25°C)

Parameters		Symbol	Rating	Unit
DC Forward current –Red		IF	700	mA
DC Forward current –Green		IF	700	mA
DC Forward current –Blue		IF	700	mA
DC Forward current –White		IF	700	mA
Reverse Voltage		VR	5	V
Operating temperature		Topr	-40 ~ 85	°C
LED Storage temperature		Tstg1	-40 ~ 110	°C
LED Junction temperature		Tj	115	°C
Soldering temperature at tp(JEDEC-020-D)		Tsol	20 ~ 40	Second
ESD classification	MIL-STD-883G	HBM	8000 (Class 3B)	V
	JESD22-A115-B	MM	400 (Class C)	V

Notes:

1. Proper current derating must be observed to maintain junction temperature below the maximum.

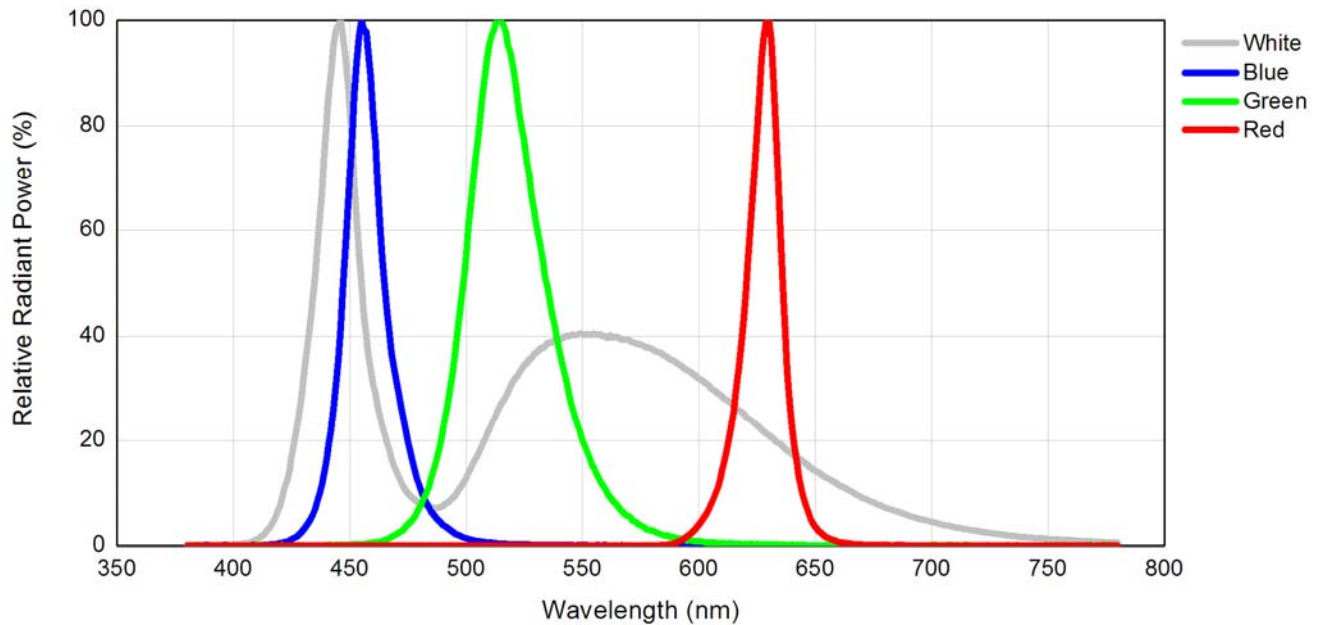
Flux Characteristics (T_j = 25°C)

Part number	Color	CCT / Dominant Wavelength Range		Minimum Luminous Flux @ 350mA (lm)	Minimum Luminous Flux @ 700mA (lm)	Forward Voltage @ 350mA (V)	
		Min.	Max.			Min.	Max.
M6363-005-0000-4X	Red	620nm	630nm	45	80	2.00	2.60
	Green	520nm	530nm	87	130	3.00	3.75
	Blue	460nm	470nm	18	30	3.00	3.75
	White	6300K	8000K	100	170	3.00	3.75

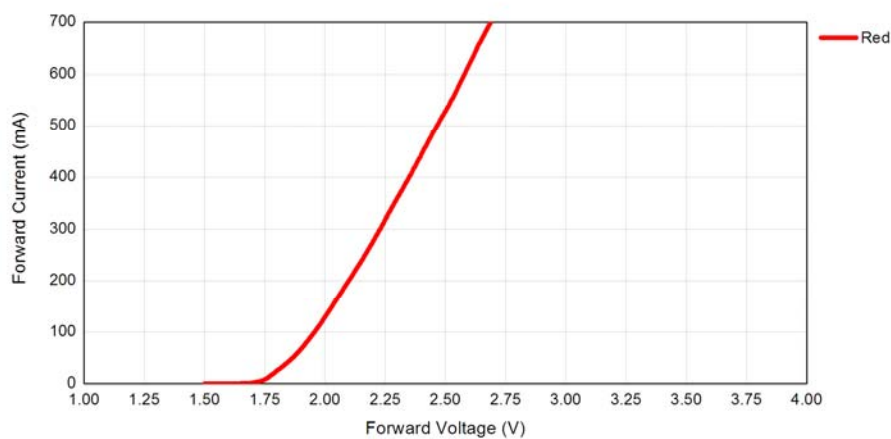
Notes:

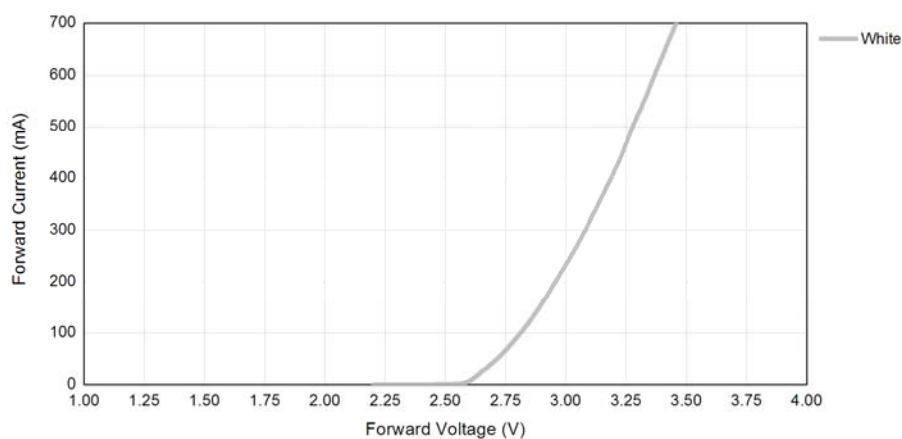
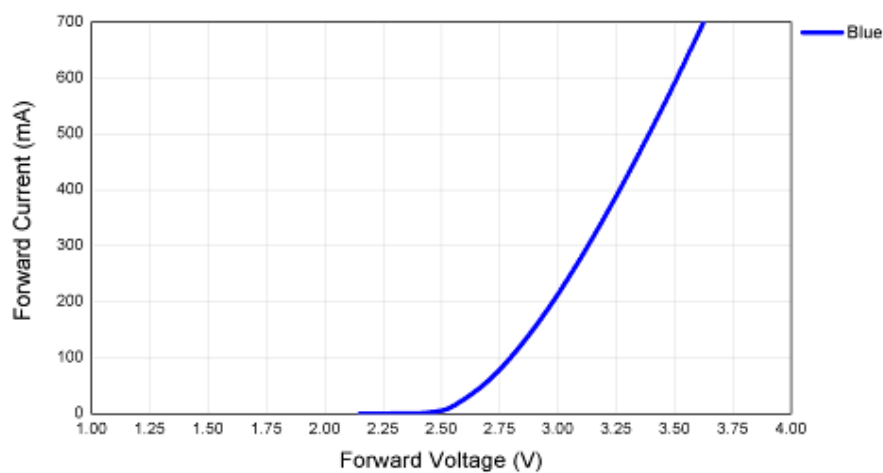
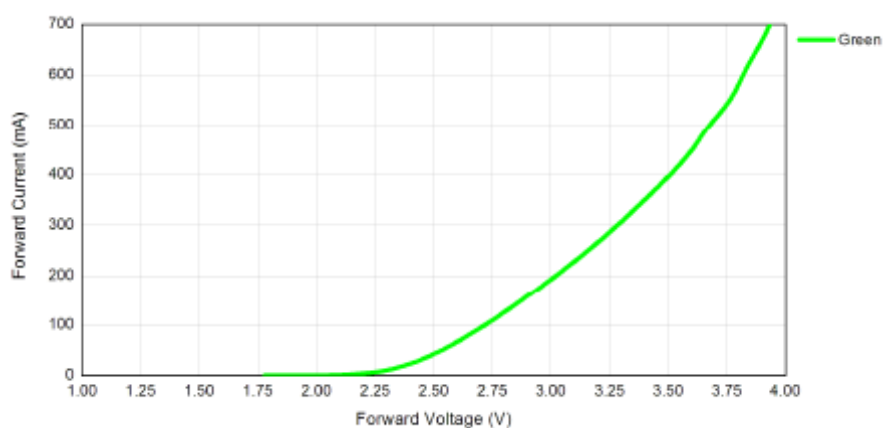
1. M63 RGBW product is tested and binned at 350mA
2. Dominant wavelength is measured with an accuracy of ± 1nm
3. Peak wavelength is measured with an accuracy of ± 1nm
4. Forward voltage is measured with an accuracy of ±0.1V
5. Flux is measured with an accuracy of ±10%

Relative Spectral Characteristics (@ 350mA, $T_j = 25^\circ\text{C}$)

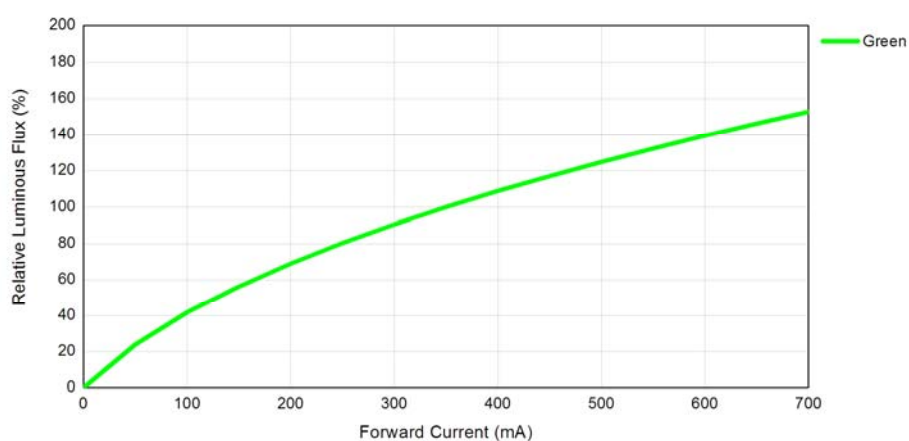
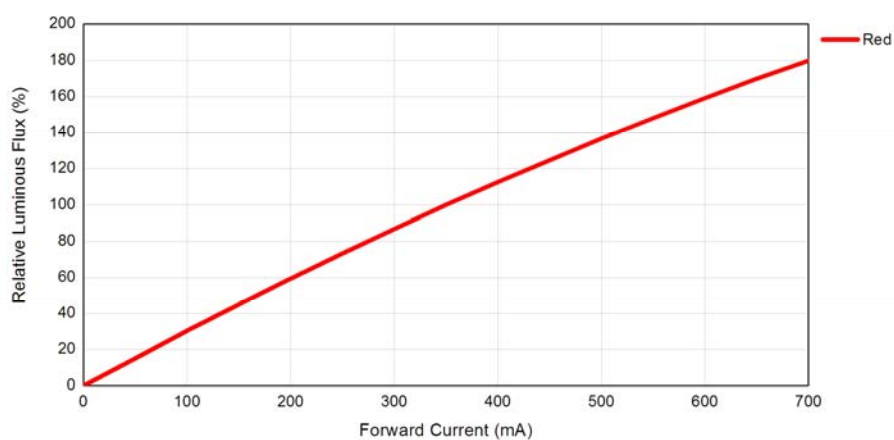


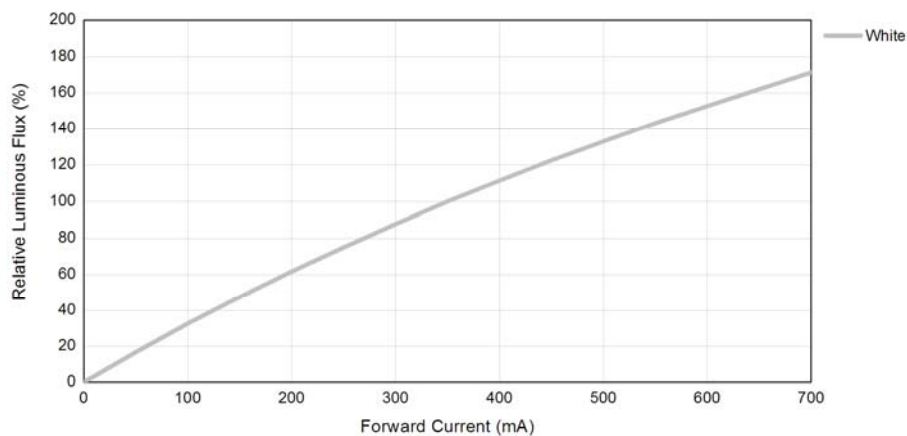
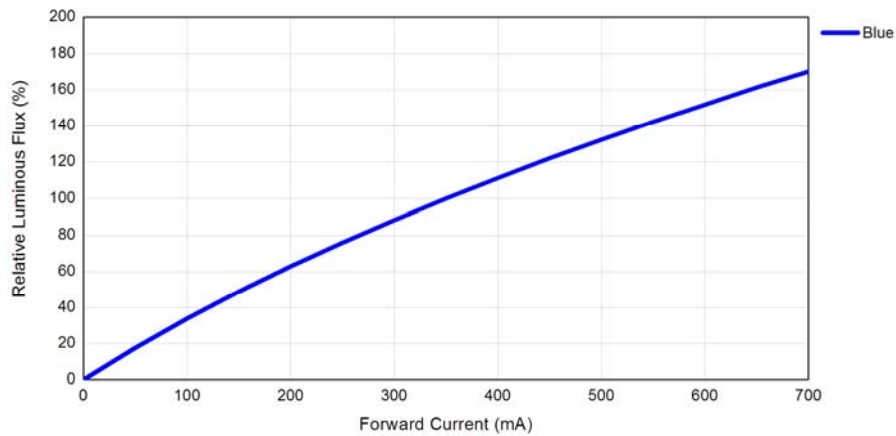
Relative Electrical Characteristics ($T_j = 25^\circ\text{C}$)



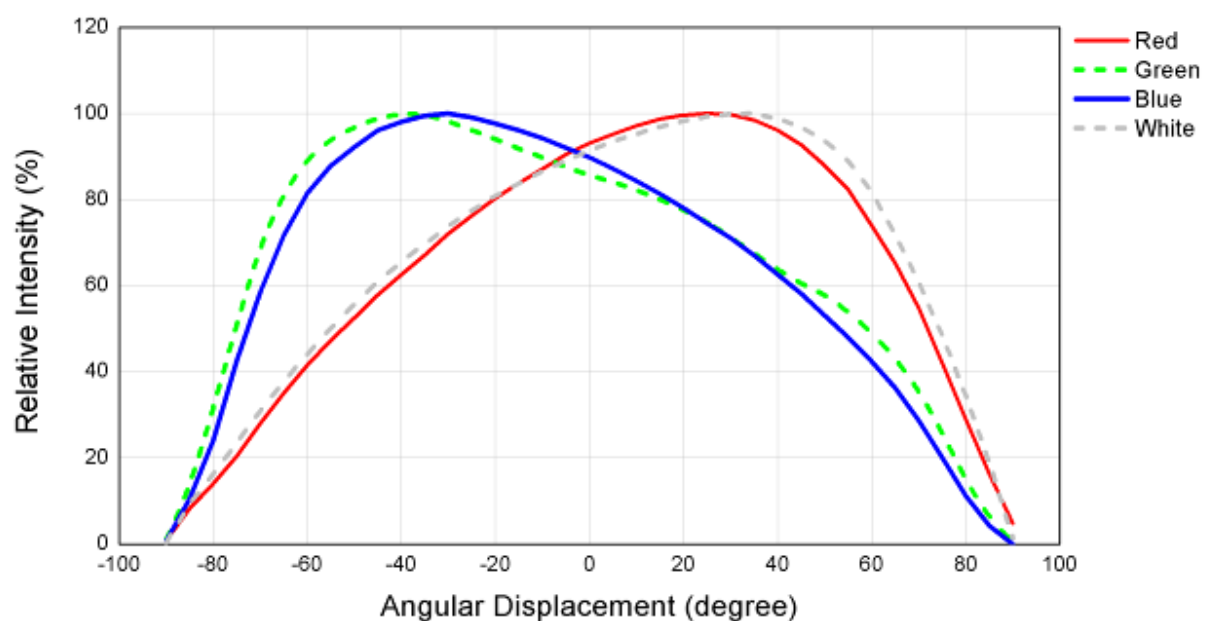
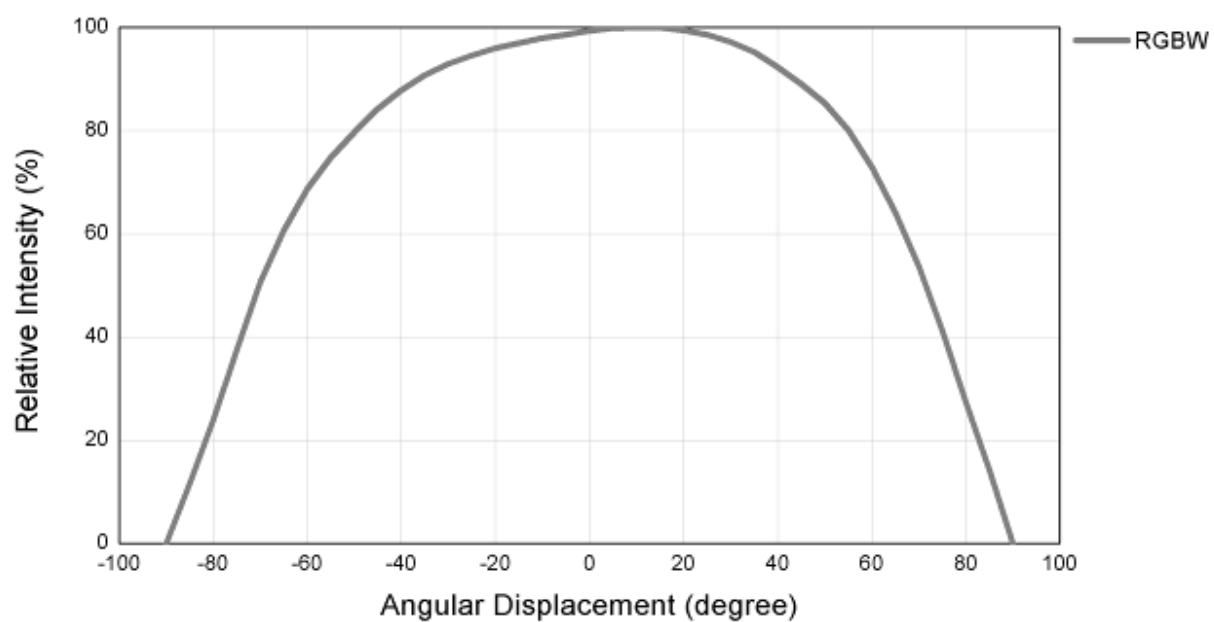


Typical Relative Luminous Flux vs. Forward Current ($T_j = 25^\circ\text{C}$)

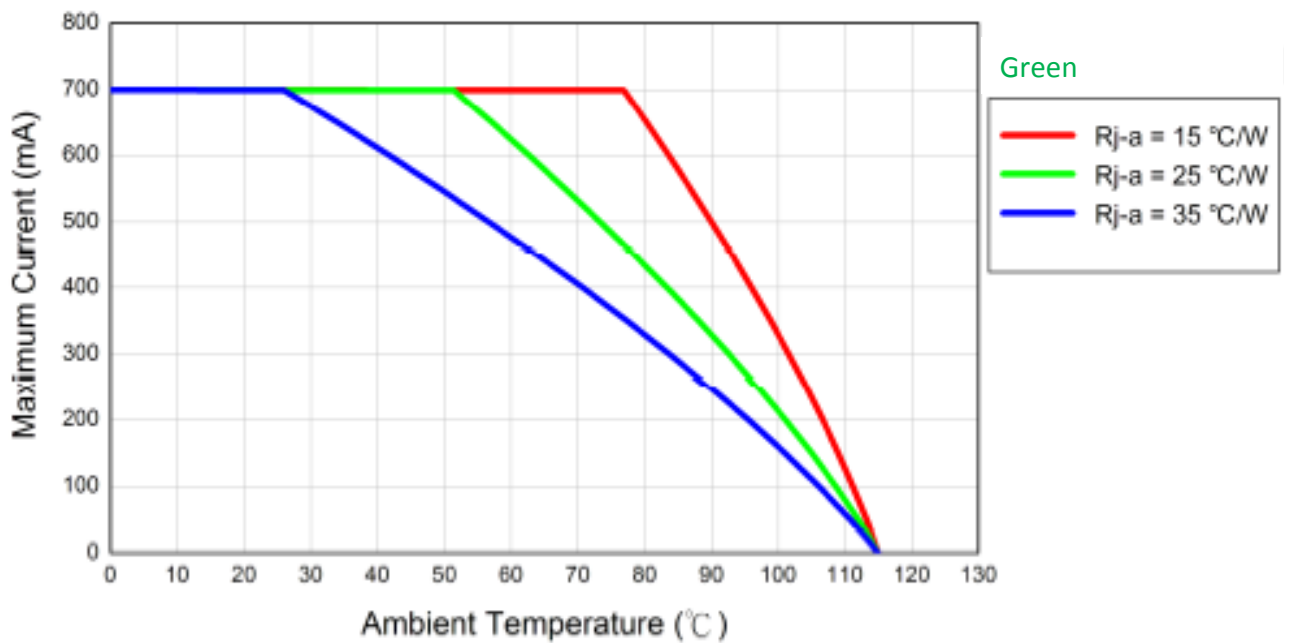
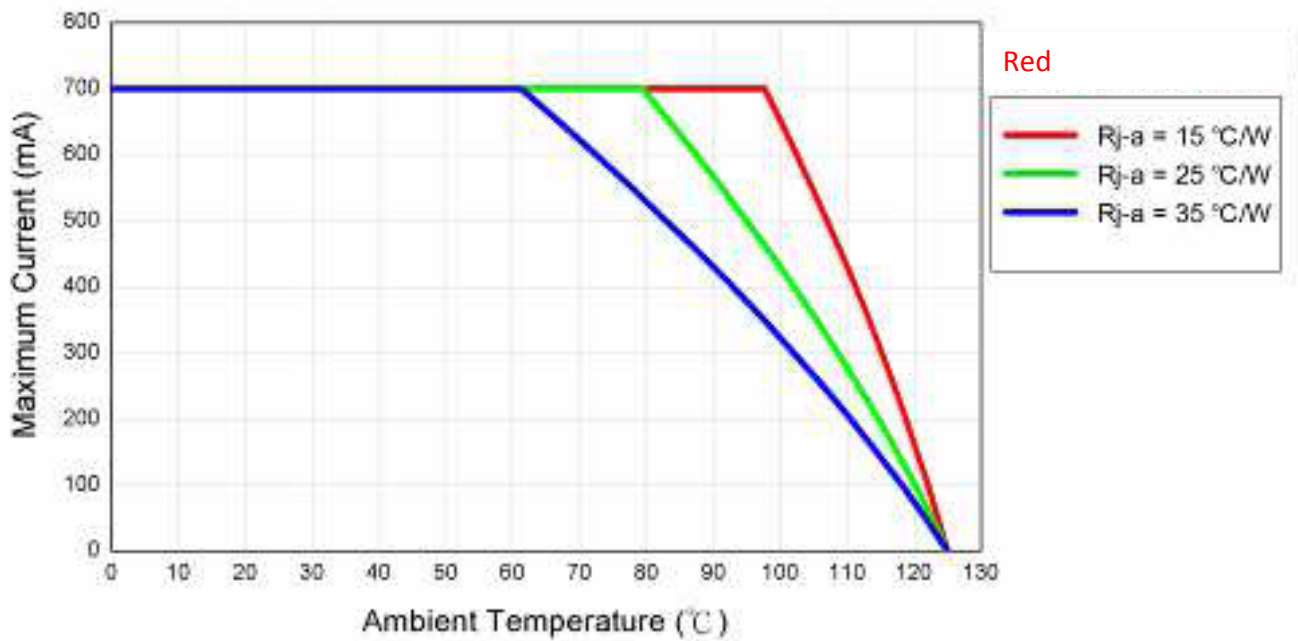


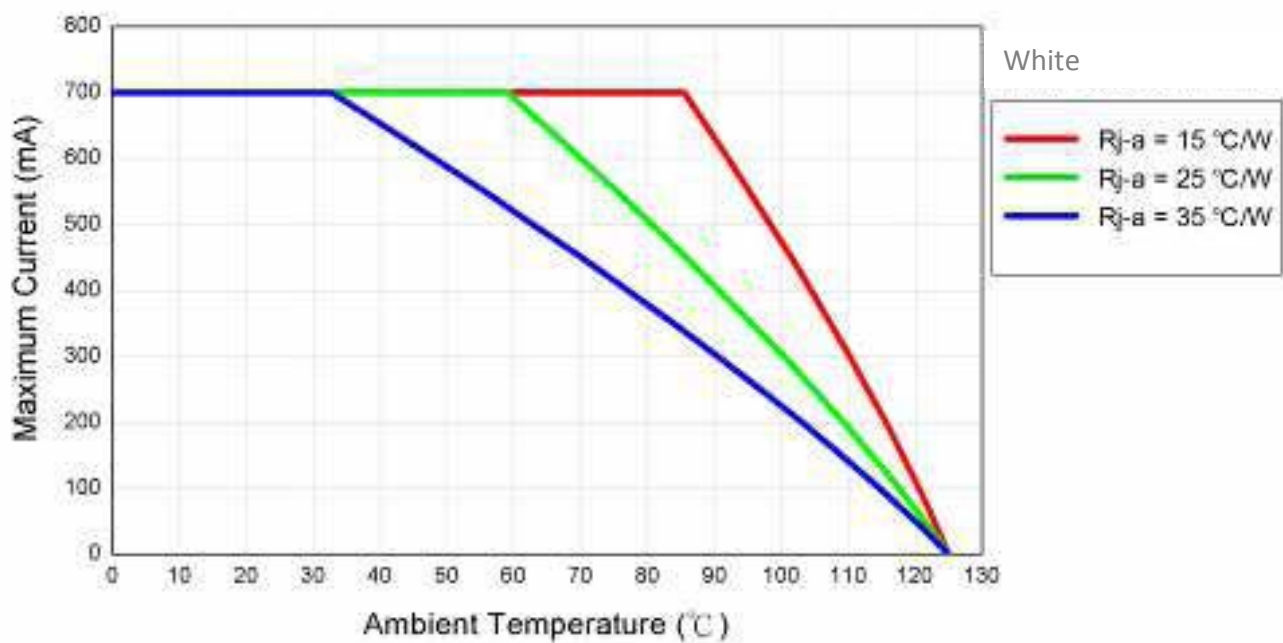
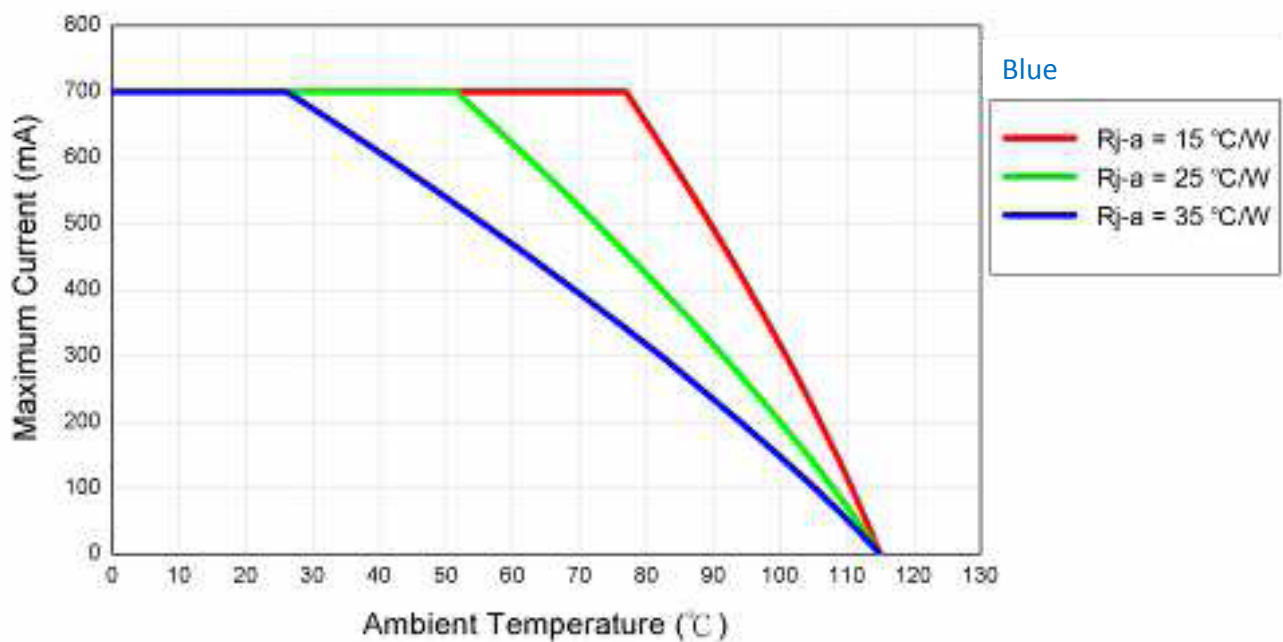


Typical Spatial Distribution

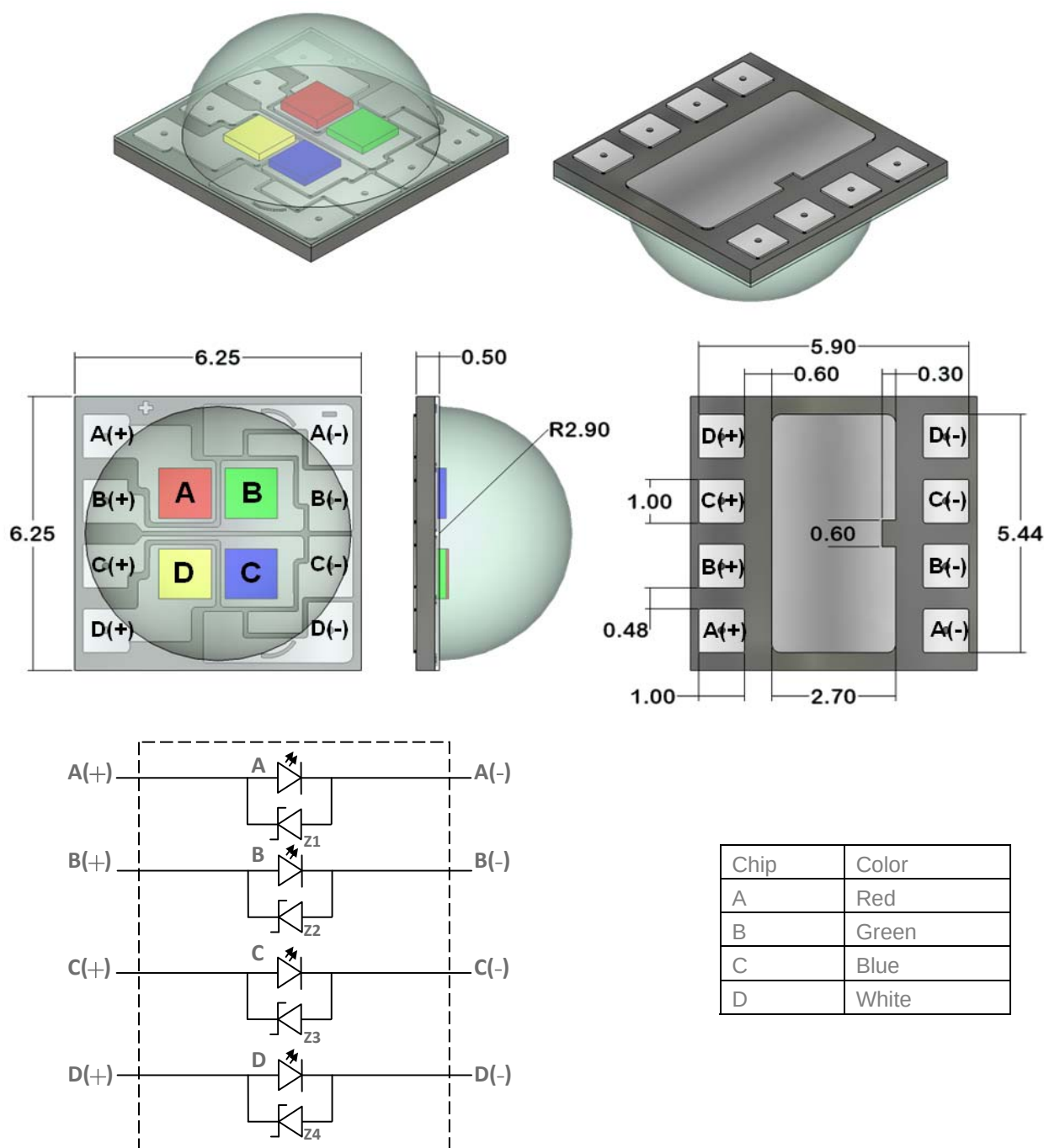


Thermal Design Curve





Mechanical Dimensions and Pad Configuration



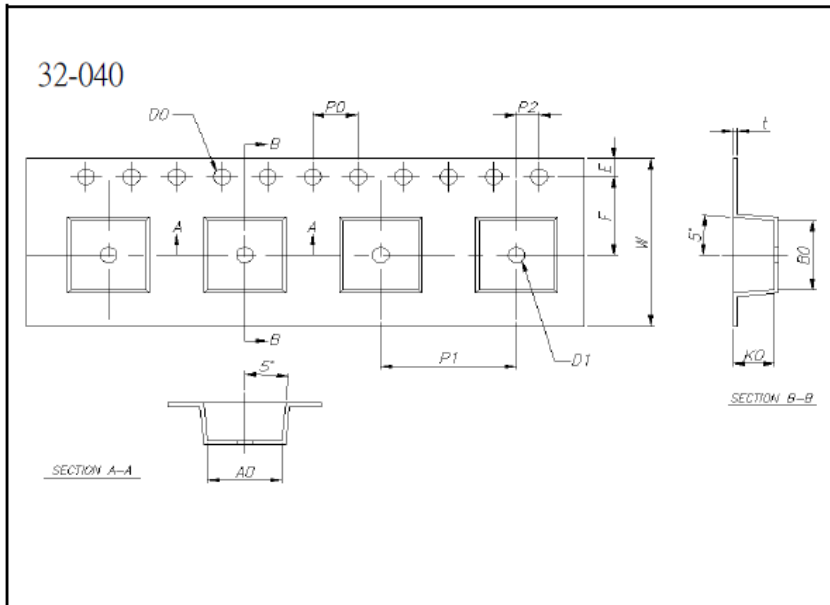
Notes:

1. Drawing is not to scale
2. All dimensions are in millimeter

Shipping Package Information

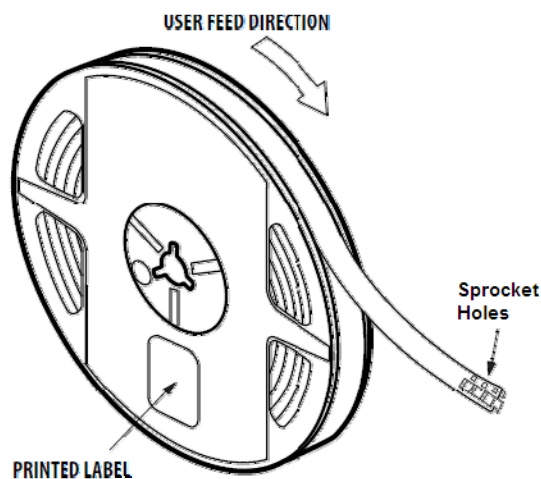
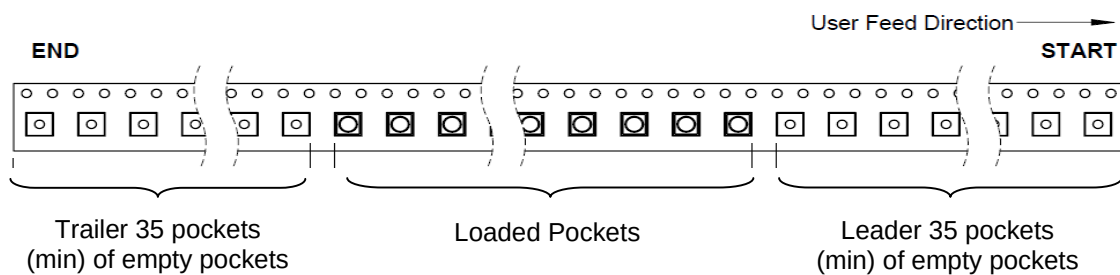
Tape and Reel

Dimensions. (Unit: mm)

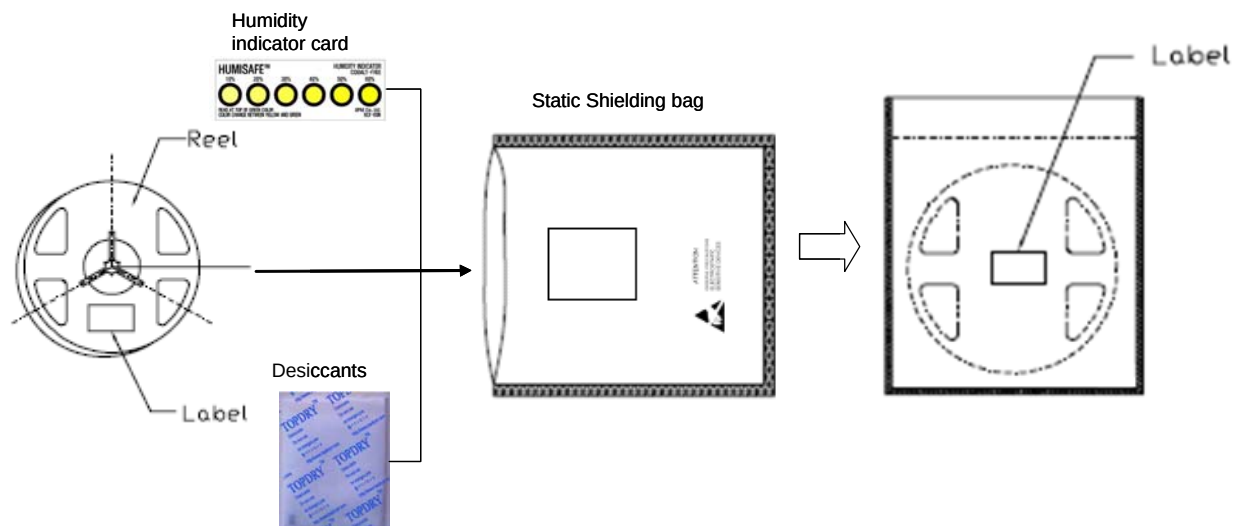


Item	Specification	Tol. (+/-)
W	16.00	± 0.20
E	1.75	± 0.10
F	7.50	± 0.10
D0	1.50	+0.10,-0
D1	1.50	± 0.10
P0	4.00	± 0.10
P1	12.00	± 0.10
P2	2.00	± 0.10
P0 x 10	40.00	± 0.20

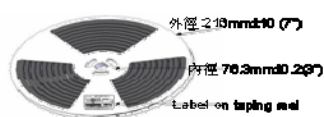
t	0.35	± 0.05
A0	6.75	± 0.10
B0	6.65	± 0.10
K0	3.65	± 0.10



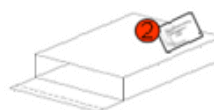
Packaging



MFG Packing



Ship out packing Step



1 bag in an inner box= 400pcs

FG In after OQC Packing

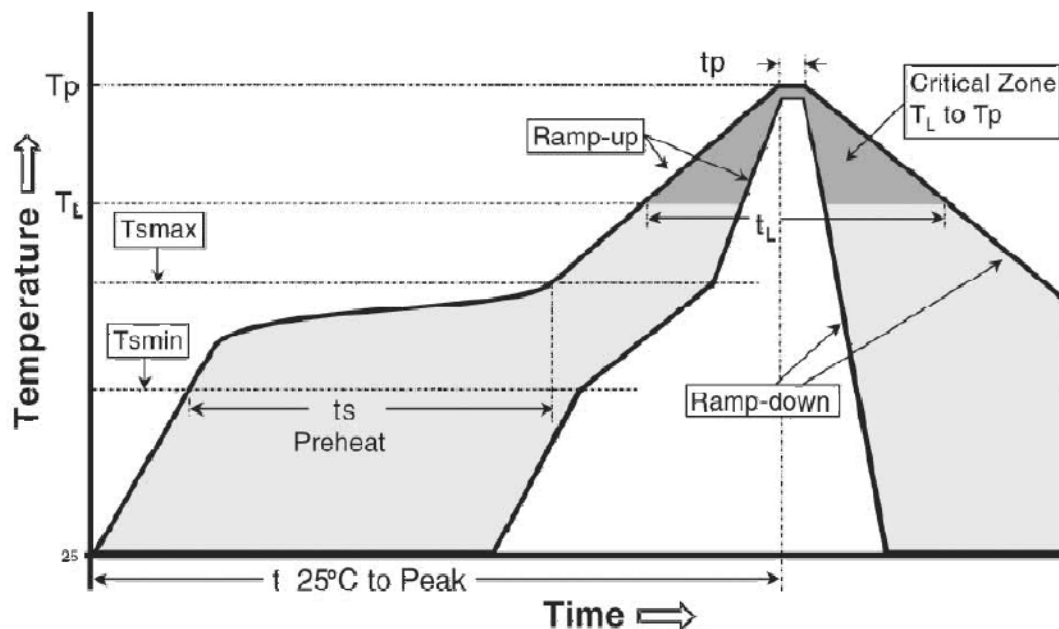


1 reel in a bag = 400pcs



Small size: 5 inner box in an outer box= 2000pcs
Large size: 10 inner box in an outer box= 4000pcs

Recommended Soldering Profile



Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average ramp-up rate (T_{smax} to T_p)	3° C/second max.	3° C/second max.
Preheat		
- Temperature Min (T_{smin})	100 °C	150 °C
- Temperature Max (T_{smax})	150 °C	200 °C
- Time (T_{smin} to T_{smax}) (t_s)	60-120 seconds	60-180 seconds
Time maintained above:		
- Temperature (T_l)	183 °C	217 °C
- Time (t_l)	60-150 seconds	60-150 seconds
Peak Temperature (T_p)	215 °C	260 °C
Time within 5°C of actual Peak Temperature (t_p) ²	10-30 seconds	20-40 seconds
Ramp-down Rate	6 °C/second max.	6 °C/second max.
Time 25°C to Peak Temperature	6 minutes max.	8 minutes max.

Note:

1. Please avoid solder ball or excessive solder around side wall during SMT process.

LED Handling Information

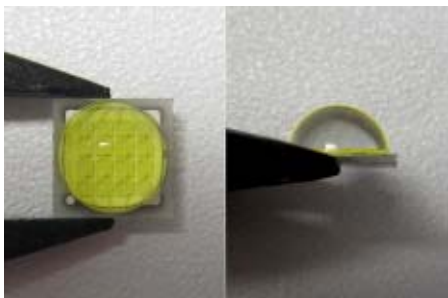
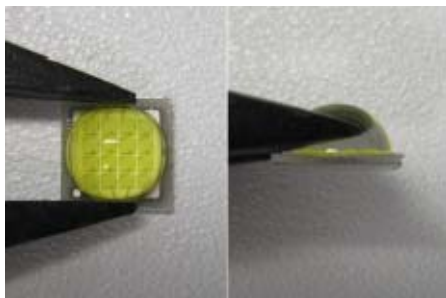
The following items are recommended when handling the LEDs:

1. The lens of the LEDs should not be exposed to dust and debris. Excessive dust and debris may cause a drastic decrease in light output.
2. Avoid mechanical stress on the LED lens.
3. Do not touch the LED lens surface. It would affect the optical performance of the LED due to the LED lens' damage.
4. Pick and place tool is recommended when removing the LEDs from the factory tape and reel packaging.

Lens Handling

Please follow the following guidelines when handling the LEDs:

1. Use tweezers to hold the LEDs.
2. Do not touch the lens with the tweezers or fingers.
3. Do not apply more than 4N (400g) of force directly onto the lens.

Correct (✓)	Wrong (X)
	

Lens Cleaning

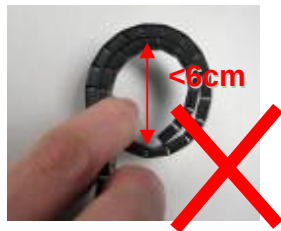
A suitable cleaning solution can be applied to the lens surface to remove dirt and dust particles:

1. Try gentle swabbing using a lint-free swab.
2. If needed, isopropyl alcohol can be used with a lint-free swab to gently remove dirt from the lens surface.
3. Do not use other solvents as they may directly react with the LED assembly.
4. Do not use ultrasonic cleaning which may damage the LED.

Carrier Tape Handling

The following items are recommended when handling the carrier tape of the LEDs:

1. Do not twist the carrier tape
2. The inward bending diameter should not be smaller than 6cm for carrier tape
3. Do not bend the tape outward
4. Storage temperature should not exceed 60°C
5. Ten reels per box
6. Box dimensions: 49 * 22 * 21 cm
7. Full box weight: 3±0.5 Kg.



About Us

SemiLEDs Corporation is a US based manufacturer of ultra-high brightness LED chips with state of the art fabrication facilities in Hsinchu Science Park, Taiwan. SemiLEDs specializes in the development and manufacturing of vertical LED chips in blue (white), green, and UV using a patented copper alloy base. This unique design allows for higher performance and longer lumen maintenance. In December 2008, The World Economic Forum recognized SemiLEDs innovations with the 2009 Technology Pioneer Award. SemiLEDs is fully ISO 9001:2008 Certified

SemiLEDs is a publicly traded company on NASDAQ Global Select Market (stock symbol "LEDS"). For investor information, please contact us at investors@semileds.com.

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