



T5050M-MCLx(RGBW) Series High Power Mixing Color LED

Introduction

The T5050M-MCLx LED from TSLC brings industry leading technology to the solid state lighting market with its high quality and performance. With a silicone lens, T5050M-MCLx LEDs from TSLC feature very high brightness and efficacy, as well as excellent lifetime.

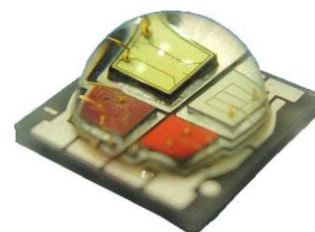


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RoHS Compliant

Characteristics

Product Nomenclature

T 5050 M – MC L x

1 2~5 6 7 8.9 10 11

Code 1: Substrate composition, T: Ceramic AlN

Code 2.3.4.5: Package size, 5050: 5.0*5.0mm

Code 6: Class Code, M:MCE

Code 8.9: Color/CCT type, MC:MCE

Code10: Lens type, L: 140 degree

Code 11: Internal code

T5050M-MCLx-RGBW (T_j=25°C , I_f = 700mA)

Color	CCT/Wd range		Group/Bin	Luminous Flux @ 700mA	Forward voltage(V)	
	Min	Max			Min	Max
Red	620nm	630nm	5nm	80-150	2.1	3.2
Green	519nm	530nm	5nm	150-240	3.2	3.8
Blue	459nm	470nm	5nm	25-80	3.2	3.8
Warm white	2700K	3200K	-	160-200	3.2	3.8
Neutral white	4000K	4750K	-			
Cool white	5000K	5300K	-	180-240		
	5300K	5700K				
	5700K	6000K				
	6000K	6500K				
	6500K	7000K				
	7000K	8300K	-			

Notes:

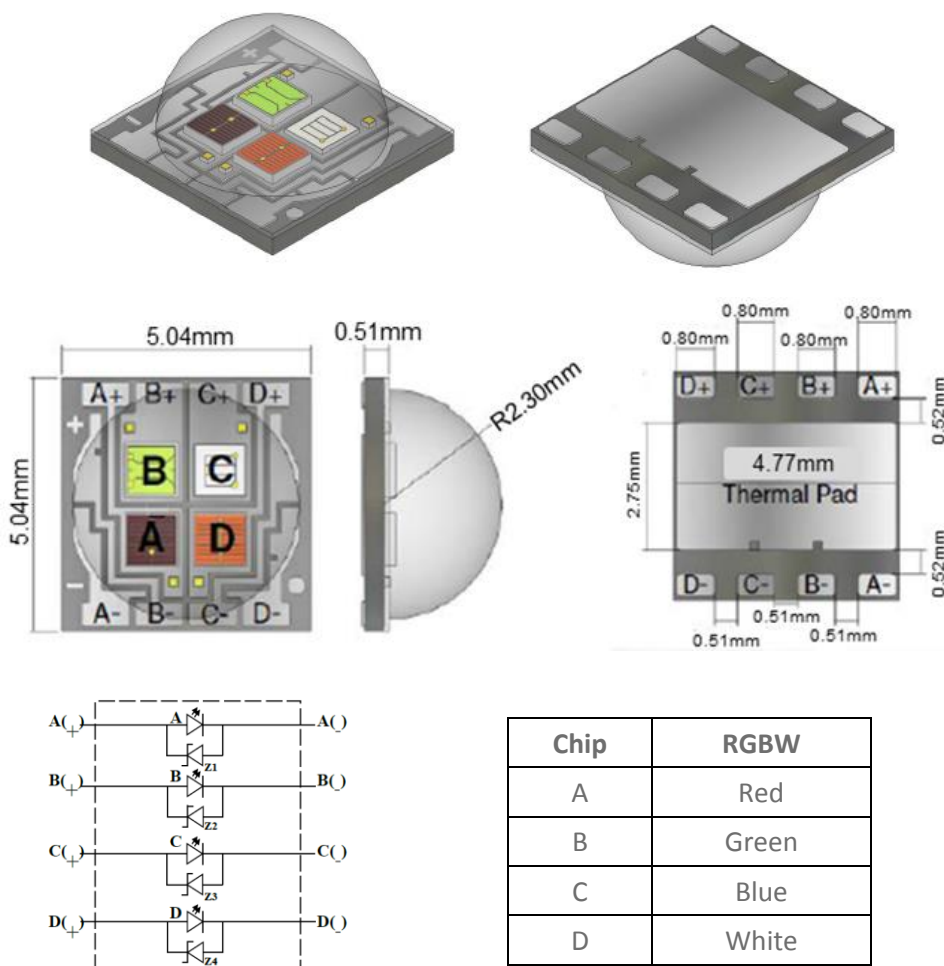
1. T5050M-MCLx product is tested and binned at 700mA.
2. Dominant wavelength is measured with an accuracy of ± 1 nm.
3. Forward voltage is measured with an accuracy of ± 0.2 V.
4. Flux is measured with an accuracy of $\pm 10\%$.



Absolute Maximum Ratings (Ta=25°C)

Parameters		Symbol	Rating	Unit
DC Forward current		If	≤ 700	mA
Peak pulsing current		Ipeak	≤ 1000	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

Mechanical Dimensions & Pad Configuration

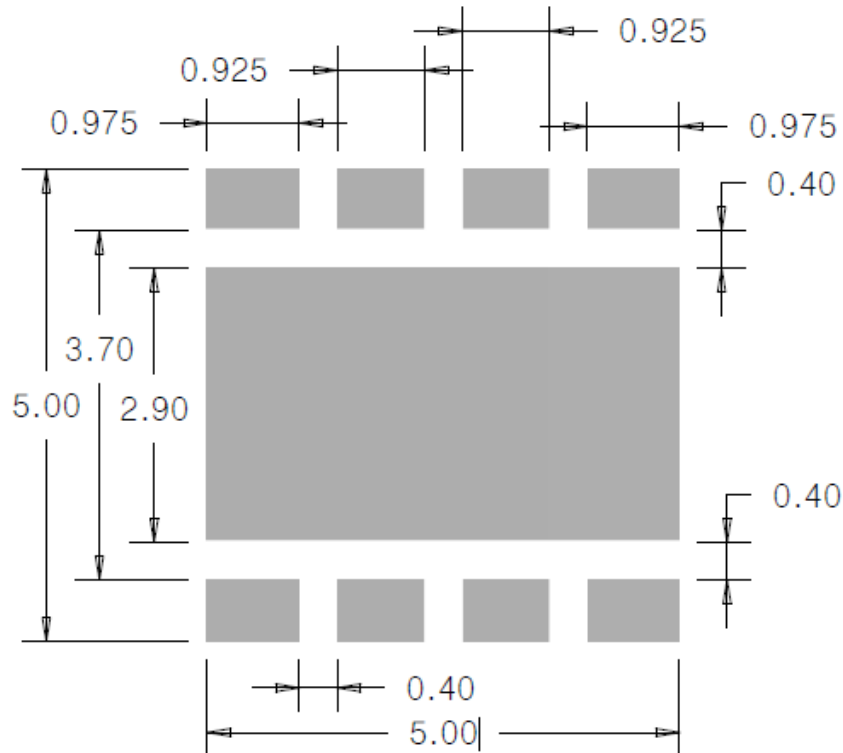


Notes:

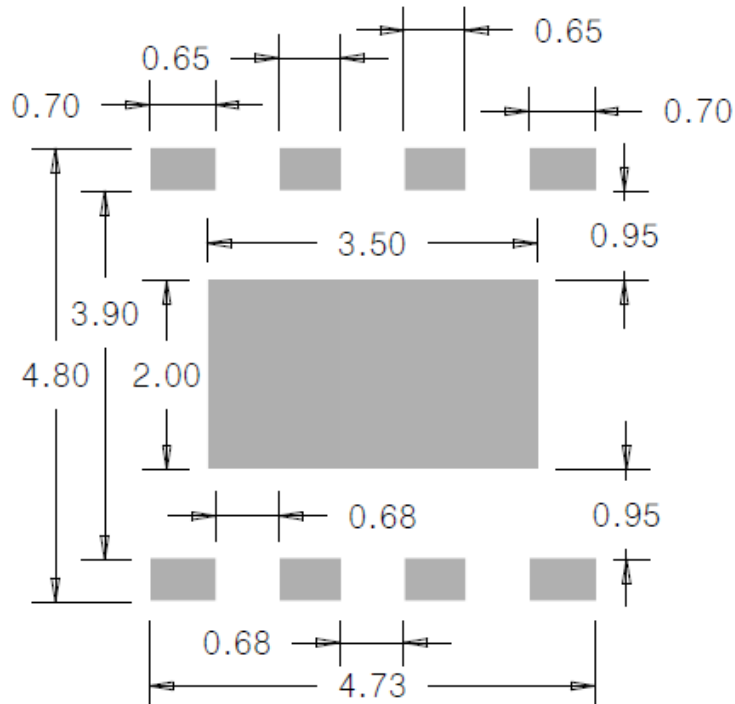
1. All dimensions are in millimeters.
2. Drawings not to scale.

Recommended Solder Pad Design

Recommended PCB Solder Pad

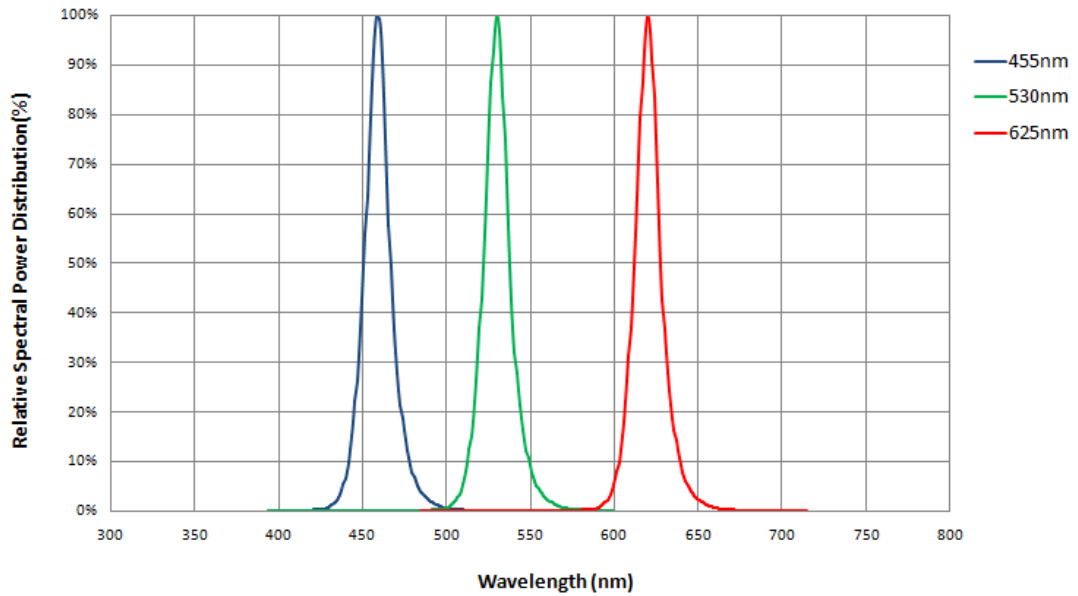


Recommended Stencil Pattern Design

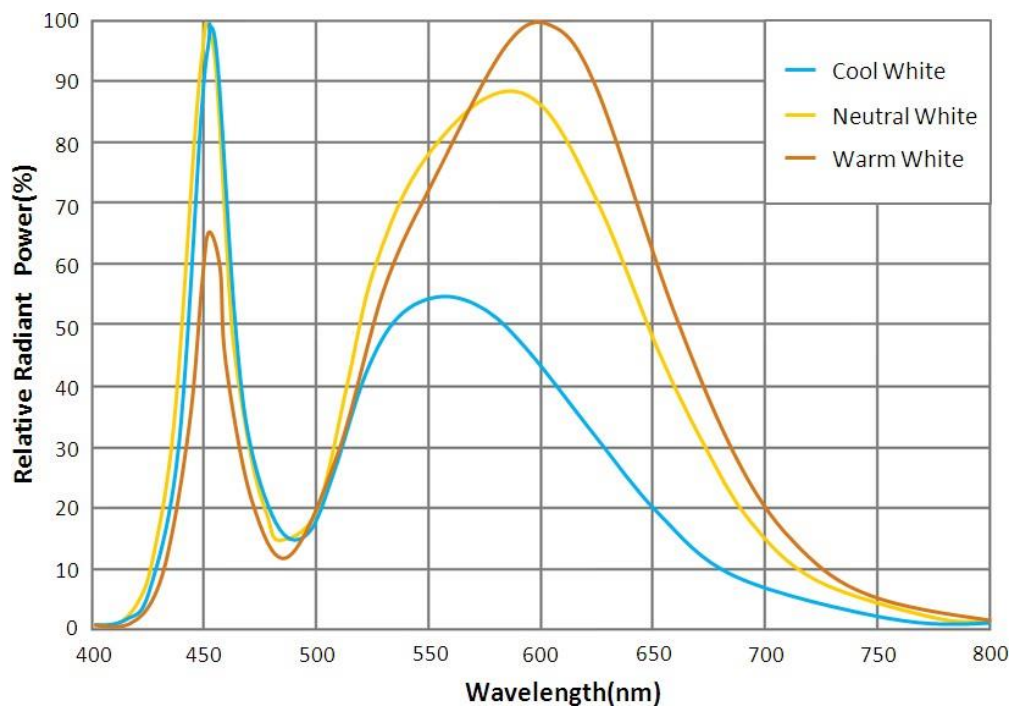


Relative Spectral Power Distribution, T_j=25°C

Bluc/Green/Red series

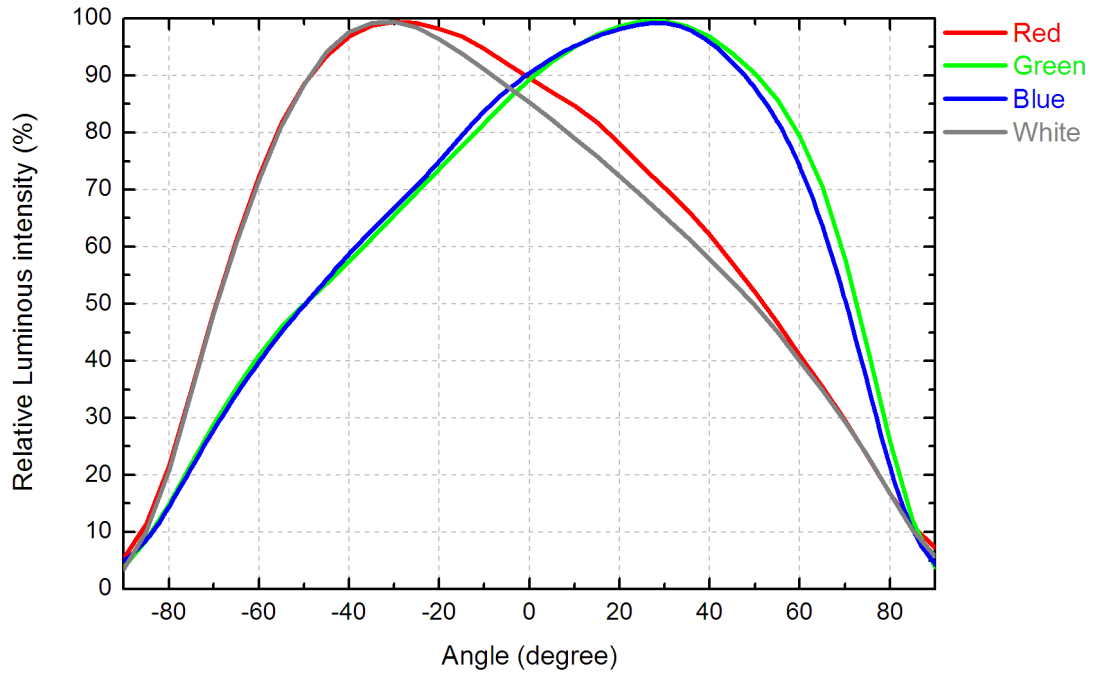


Warm white / Neutral white / Cool white



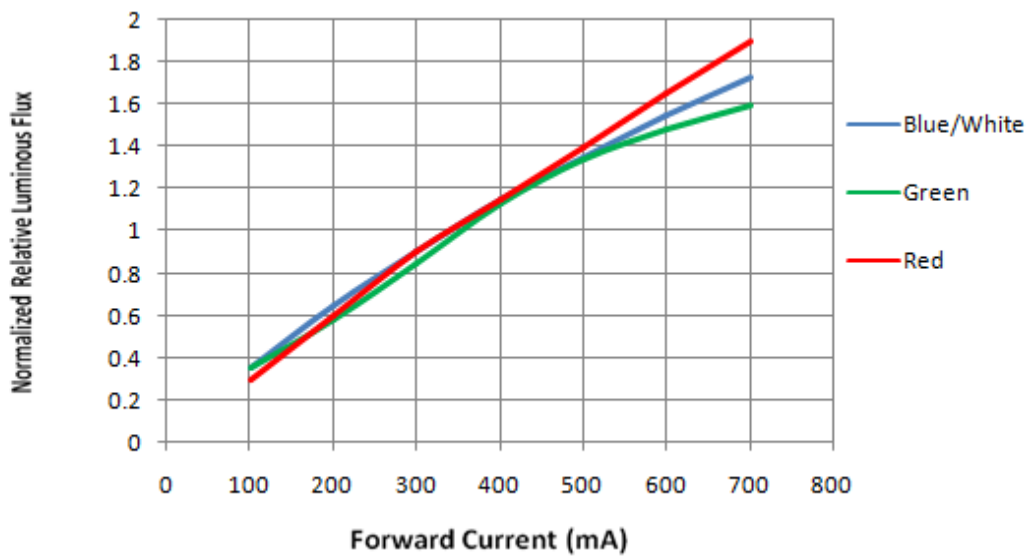
Typical Spatial Radiation Pattern

T5050M-MCLx-RGBW



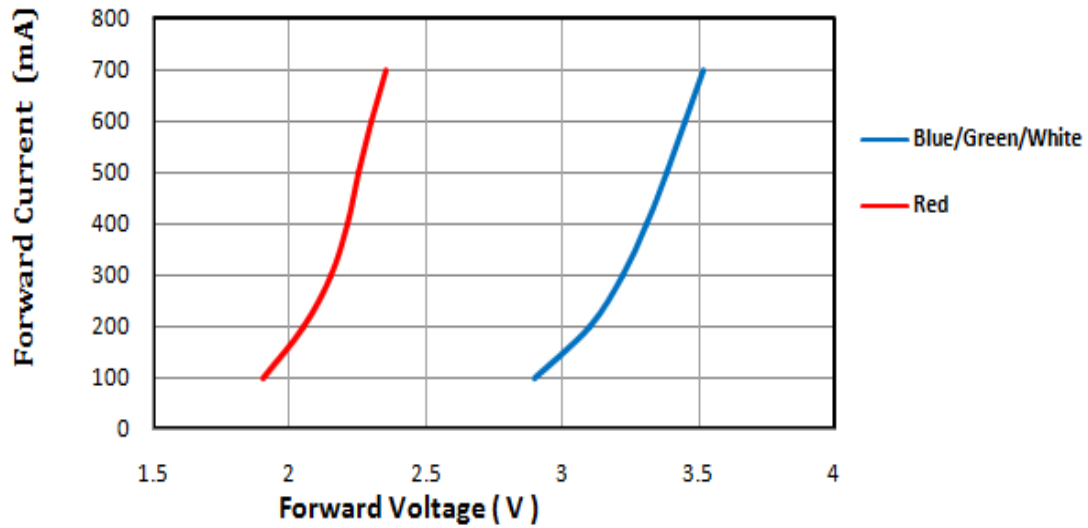
Typical Forward L-I Characteristics

T5050M-MCLx-RGBW



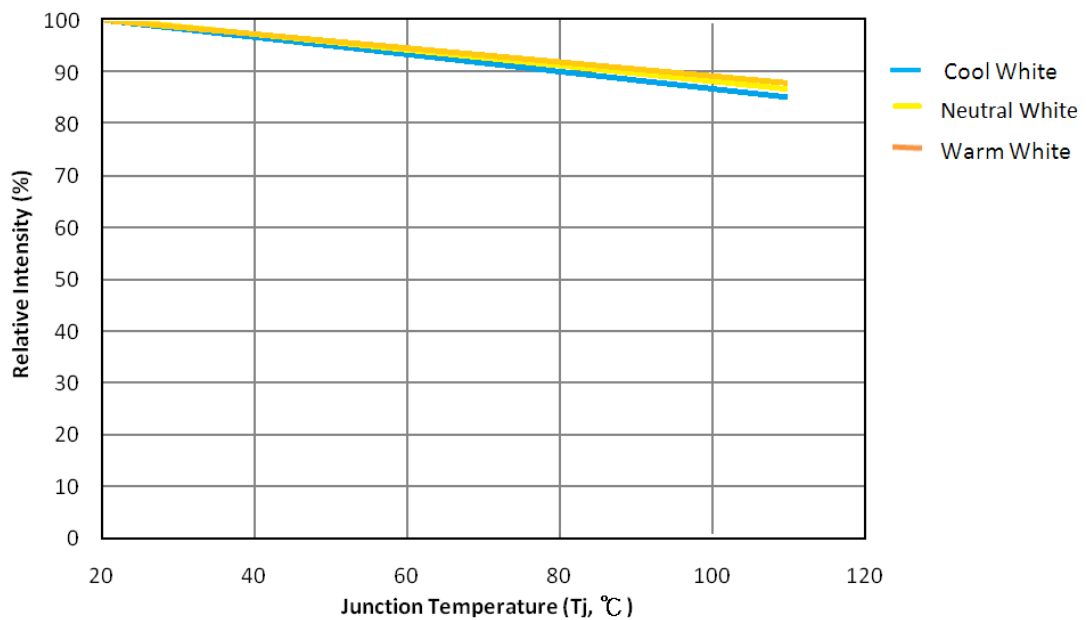
Typical Forward I-V Characteristics

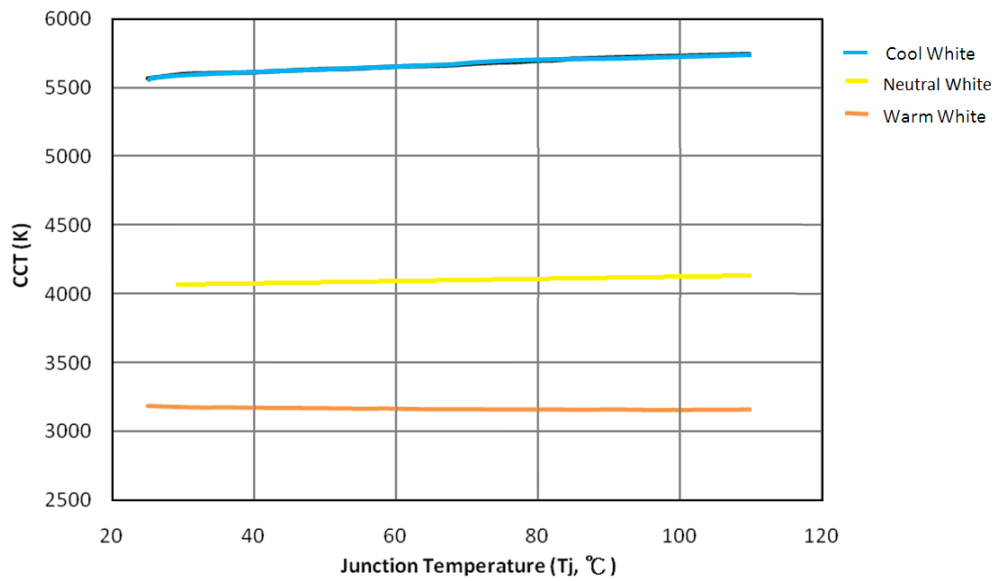
T5050M-MCLx-RGBW



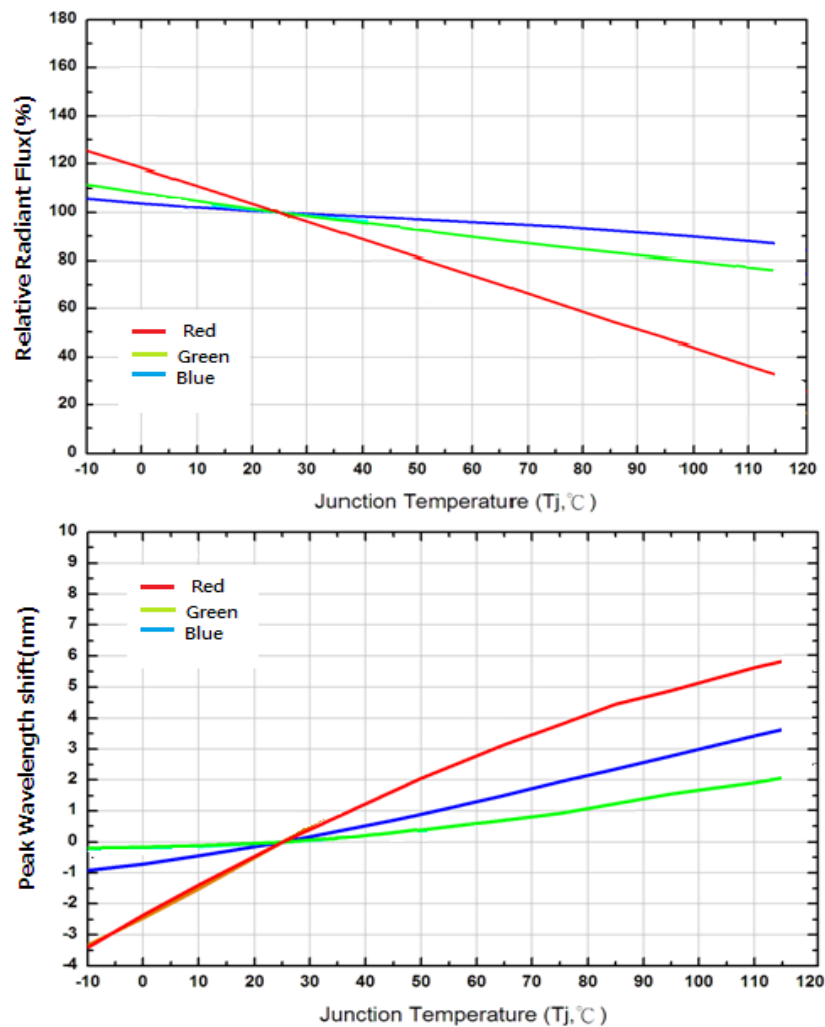
Typical L-Tj Characteristics

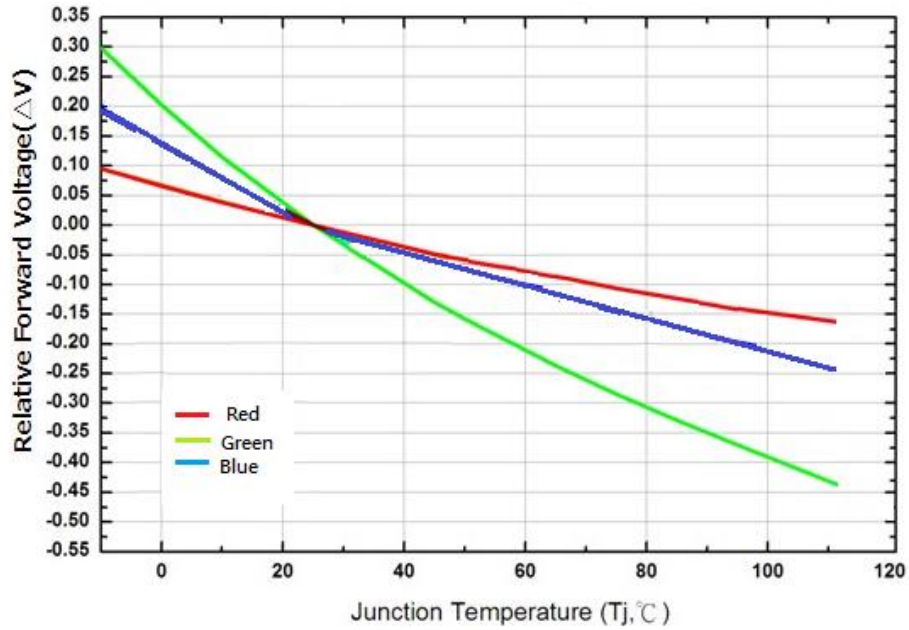
White Series





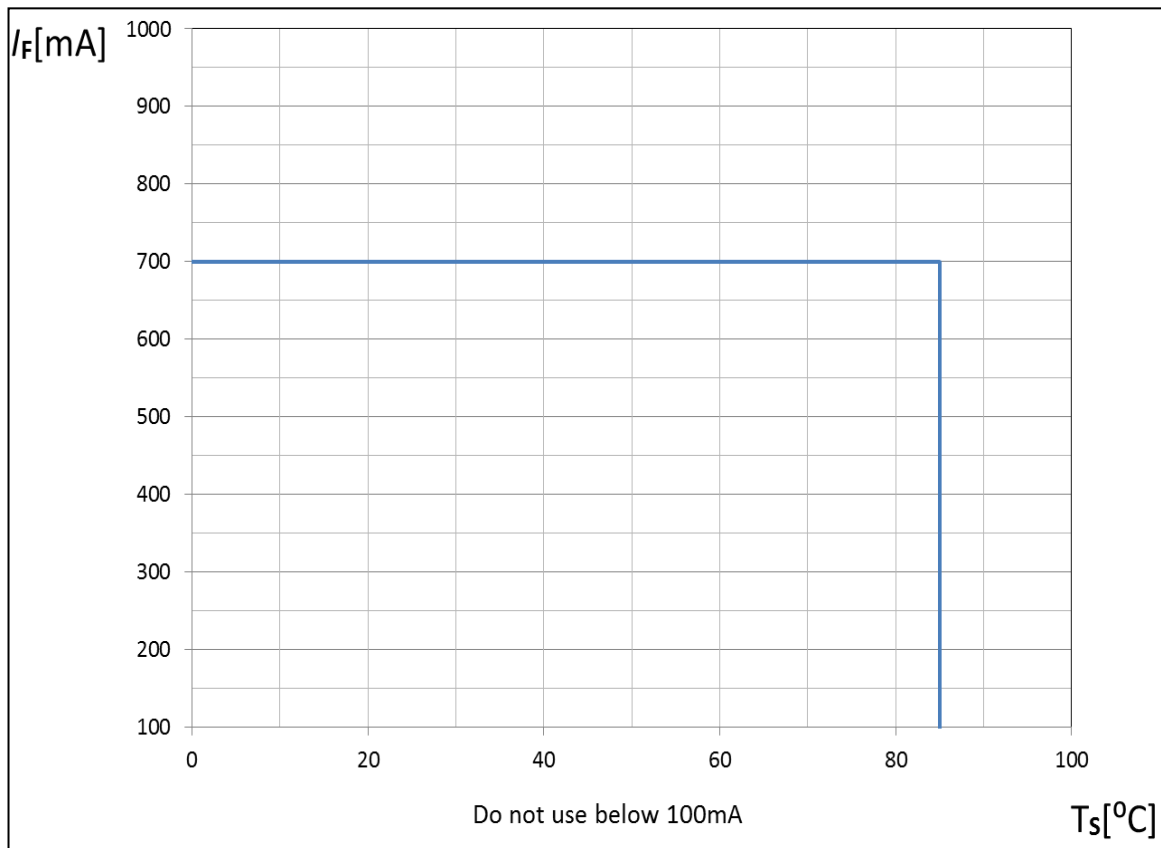
Blue / Green / Red Series





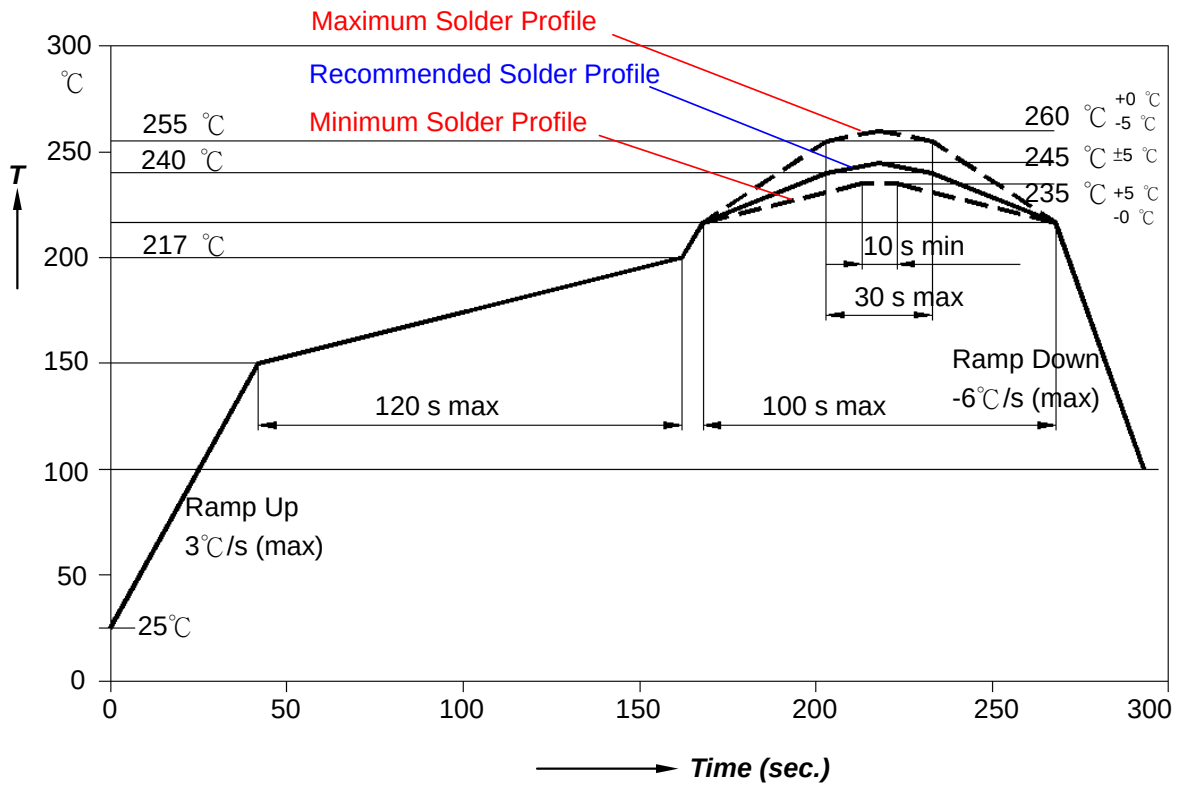
Max. Permissible Forward Current

For 4 chip operated



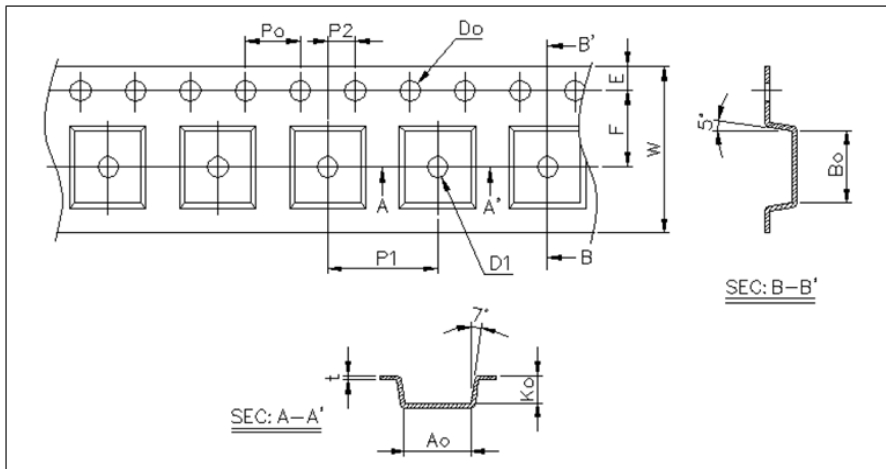
Recommended Soldering Profile

The LEDs can be soldered using the parameters listed below. As a general guideline, the users are suggested to follow the recommended soldering profile provided by the manufacturer of the solder paste. Although the recommended soldering conditions are specified in the list, reflow soldering at the lowest possible temperature is advised for the LEDs.



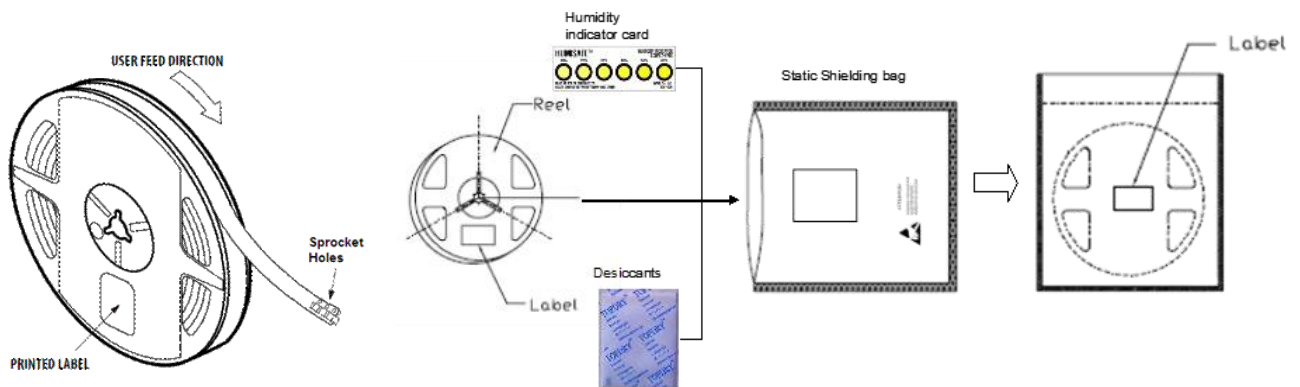
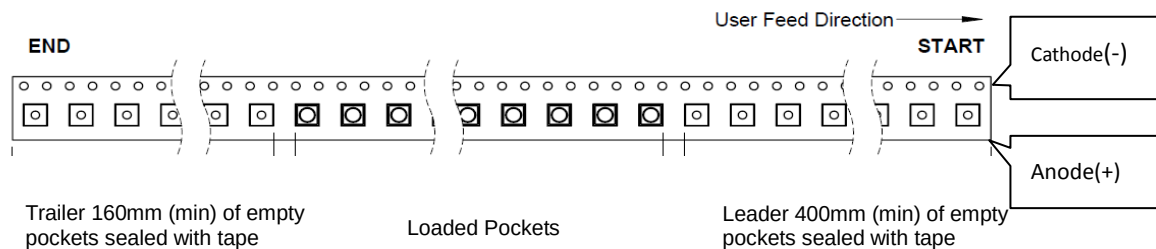
Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average ramp-up rate (T _{smax} to T _p)	3°C / second max.	3°C / second max.
Preheat		
• Temperature Min (T _{smin})	100 °C	150 °C
• Temperature Max (T _{smax})	150 °C	200 °C
• Time (T _{smin} to T _{smax}) (ts)	60-120 seconds	60-180 seconds
Time 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 (tp) 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.

Packing Information



Item	Specification	Tol.(+/-)
W	12.00	±0.20
E	1.75	±0.10
F	5.50	±0.05
D0	1.50	+0.10, -0
D1	1.50	+0.10, -0
P0	4.00	±0.05
P1	8.00	±0.10
P2	2.00	±0.05
P0X10	40.00	±0.20

Item	Specification	Tol.(+/-)
t	0.30	±0.05
A0	5.30	±0.10
B0	5.40	±0.10
K0	3.10	±0.10



MFG Packing



FG in after OQC Packing



Ship out packing Step



Note:

All dimensions are in millimeter.



Small size: 12 inner boxes in an outer box = 1200pcs

About Us

TSLC Corporation is devoted to developing high-density, and multi-size emitters with powerful output to satisfy the needs of every customer.

TSLC Corporation is the leader in LED solutions. Unlimited design flexibility for interior and exterior spaces with high-end lighting effect; energy-efficient for UV curing to improve the quality of medical care; horticulture solutions create a better environment for everyone; high-intensity rotatable lightings for the entertainment industry, TSLC is always there for your lighting needs.

For further company or product information, please visit us at www.tslc.com.tw or please contact sales@tslc.com.tw.



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