Product Datasheet

T5050M-MCLx (RGBIR) Series High Power Multi-Channel 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

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 7.8: Color/CCT type, MC:MCE

Code 9: Lens type, L: 140 degree

Code 10: Lens version

T5050M-MCLx-RGBIR (Tj=25℃ , If = 350mA)

Color	Wp/Wd range(nm)		Luminous Flux@350mA		Forward voltage(V)	
	Min	Max	Min	Max	Min	Max
Red	620	635	60lm	100lm	2.1	2.8
Green	520	535	100lm	140lm	2.7	3.4
Blue	460	470	25lm	50lm	2.7	3.4
IR	840	870	150mW	350mW	1.4	2.1

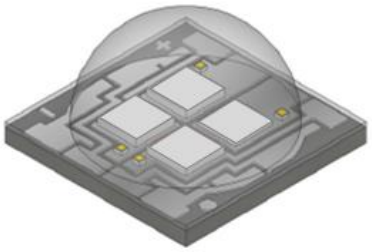
Notes:

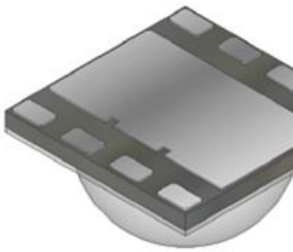
1. T5050M-MCLx product is tested at 350mA.
2. Dominant wavelength is measured with an accuracy of ± 1nm.
3. Forward voltage is measured with an accuracy of ± 0.2V.
4. Flux is measured with an accuracy of ± 10%.

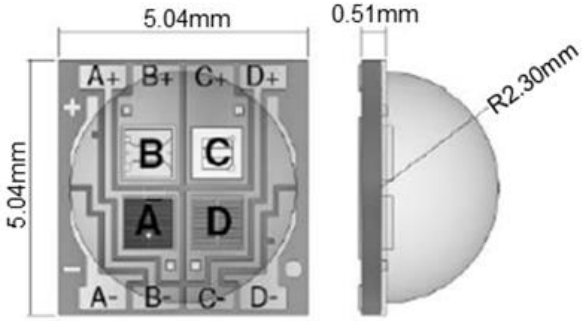
Absolute Maximum Ratings (Ta=25℃)

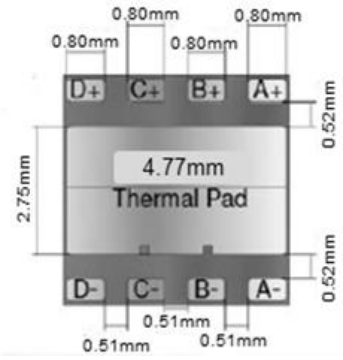
Parameters		Symbol	Rating	Unit
DC Forward current		If	≦ 700	mA
Peak pulsing current		Ipeak	≦ 1000	mA
Reverse Voltage		Vr	≦ 5	V
Operating temperature		Topr	-40 ~ 85	℃
LED Storage temperature		Tstg1	-40 ~ 110	℃
LED Junction temperature		Tj	≦ 115	℃
Soldering temperature at tp (JEDEC-020-D)		Tsol	20-40	second
ESD classification	MIL-STD-883G	HBM	8000 (Class 3B)	V
	JESD22-A115-B	MM	400 (Class C)	V

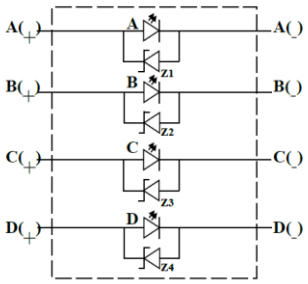
Mechanical Dimensions & Pad Configuration











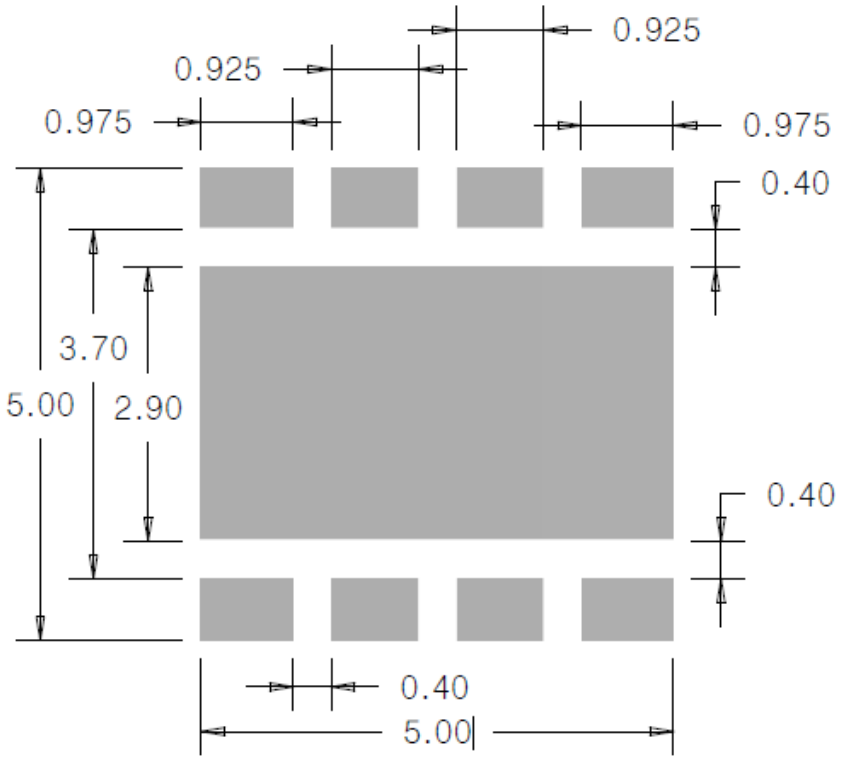
Chip	RGBIR
A	Blue
B	Green
C	Red
D	IR

Notes:

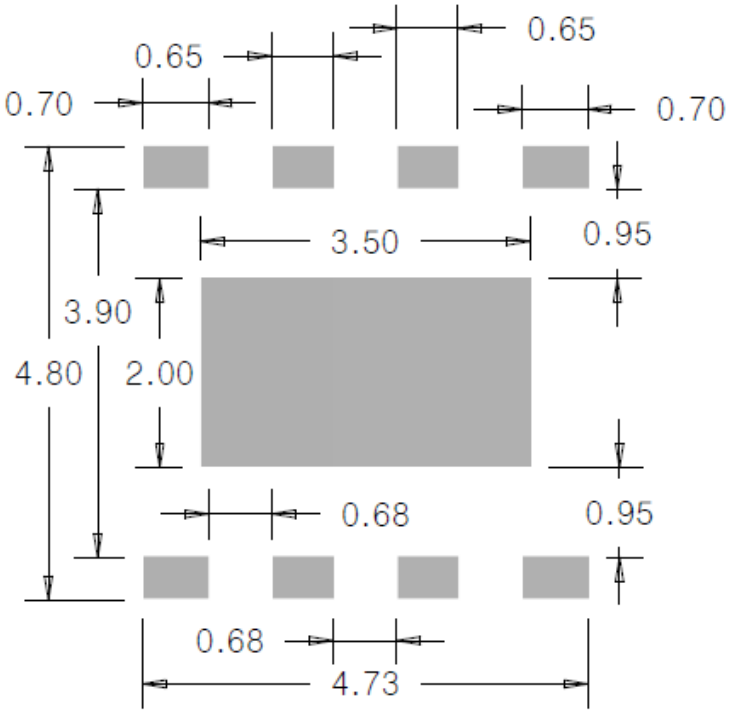
1. All dimensions are in millimeters.
2. Drawings not to scale.

Recommended Solder Pad Design

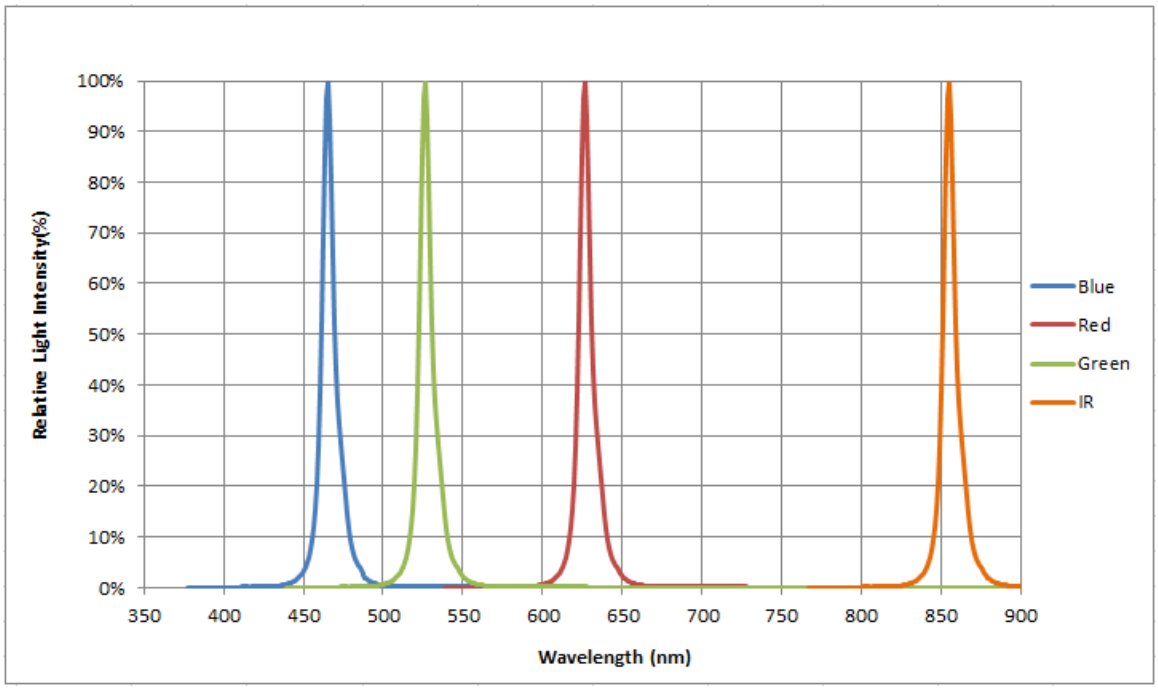
Recommended PCB Solder Pad



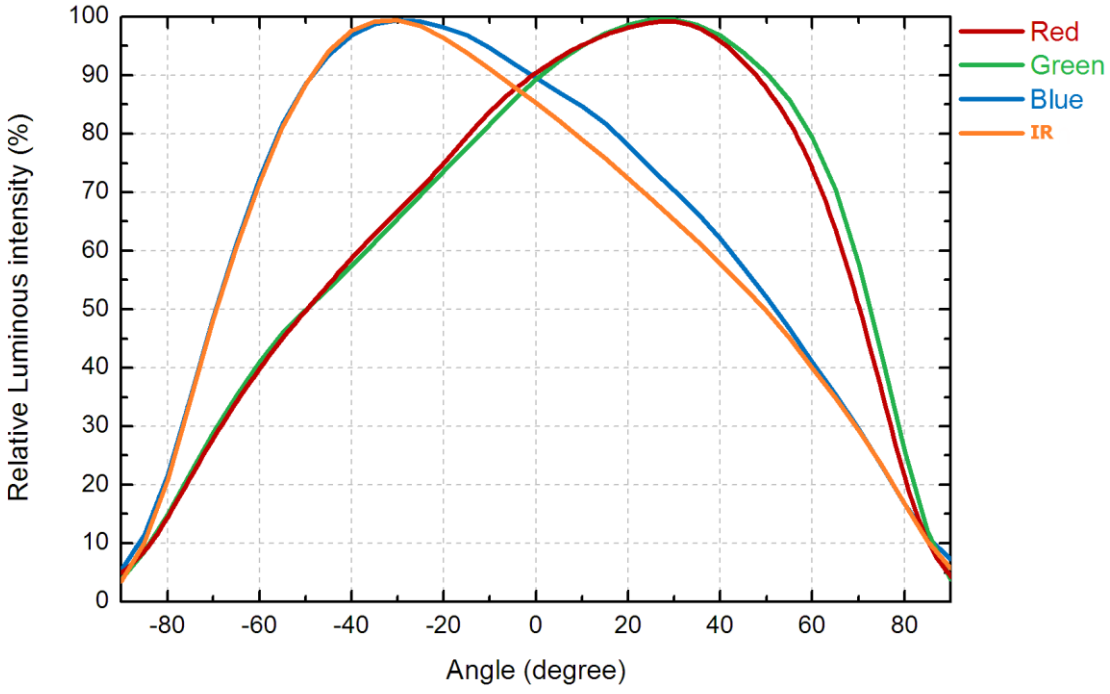
Recommended Stencil Pattern Design



Relative Spectral Power Distribution, Tj=25˚C

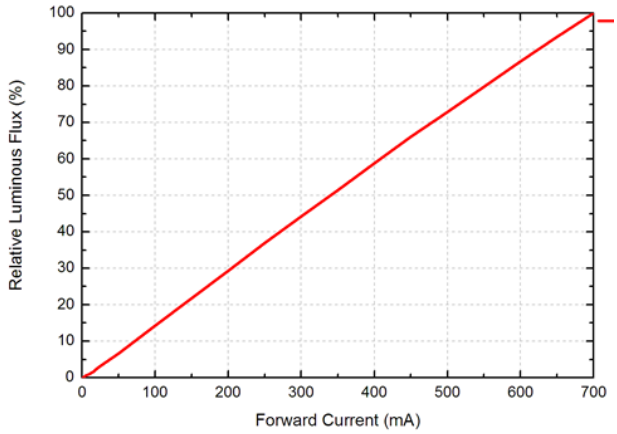


Typical Spatial Radiation Pattern

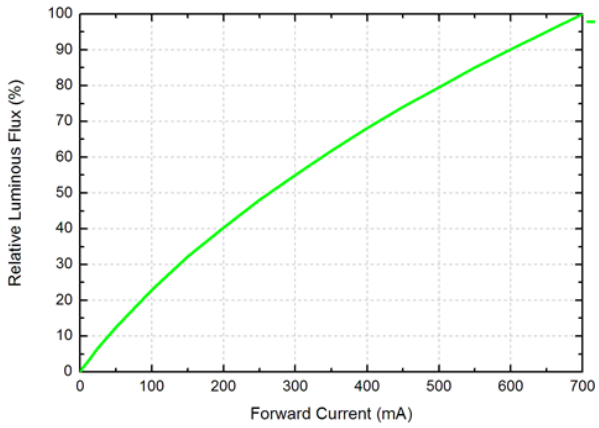


Typical Forward L-I Characteristics

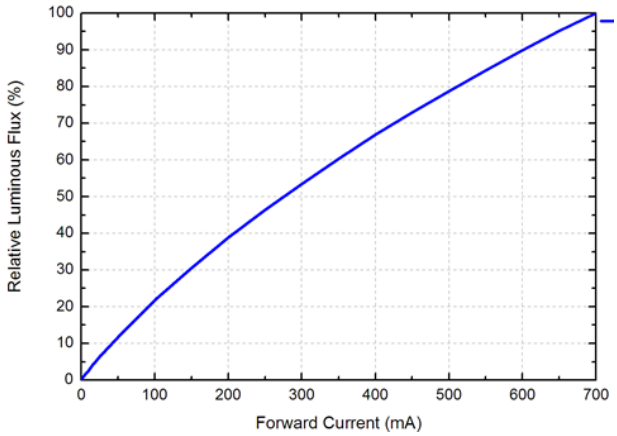
Red



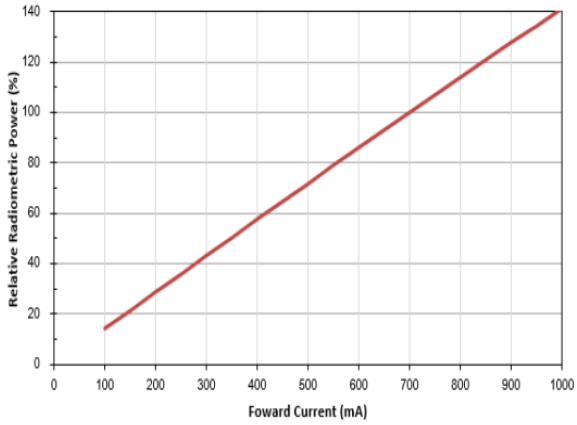
Green



Blue

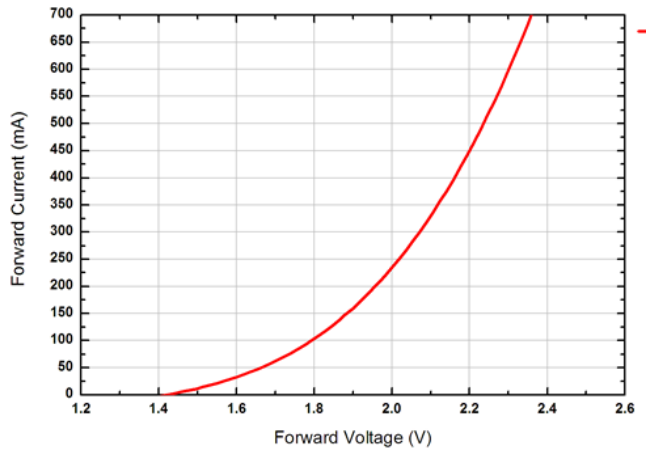


IR

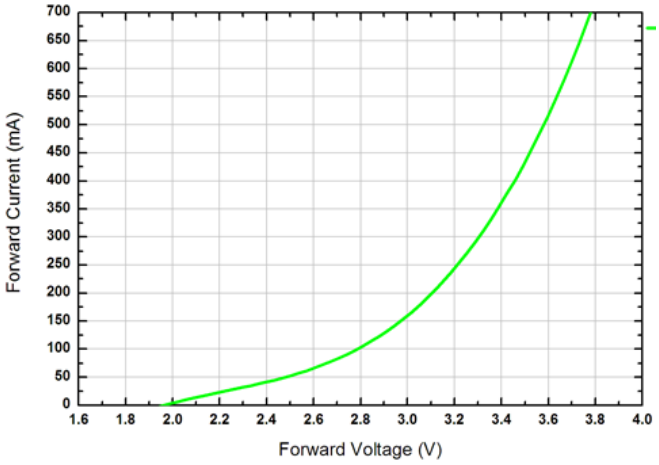


Typical Forward I-V Characteristics

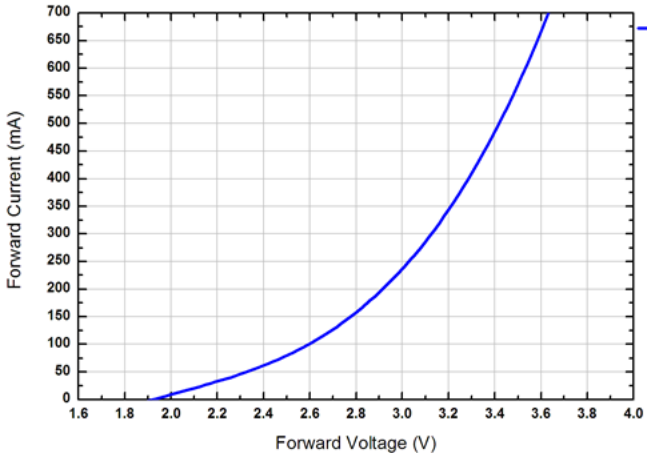
Red



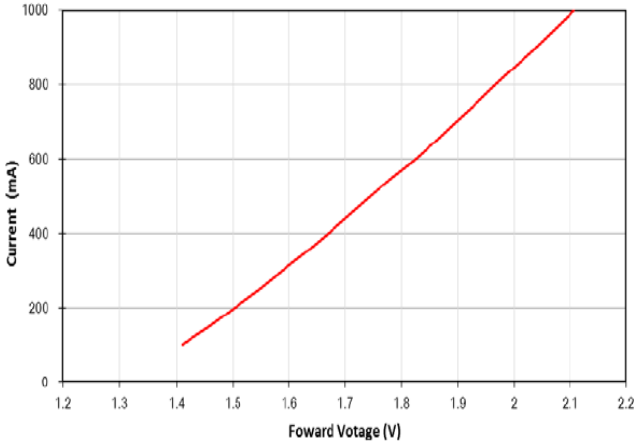
Green



Blue

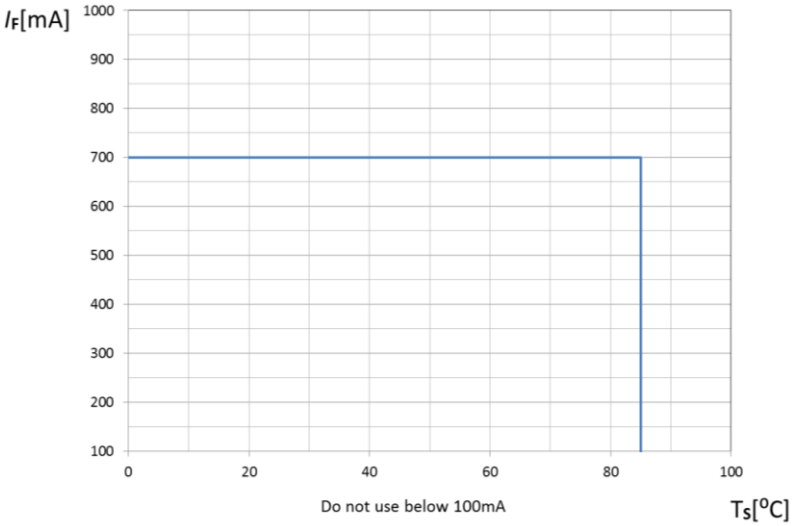


IR



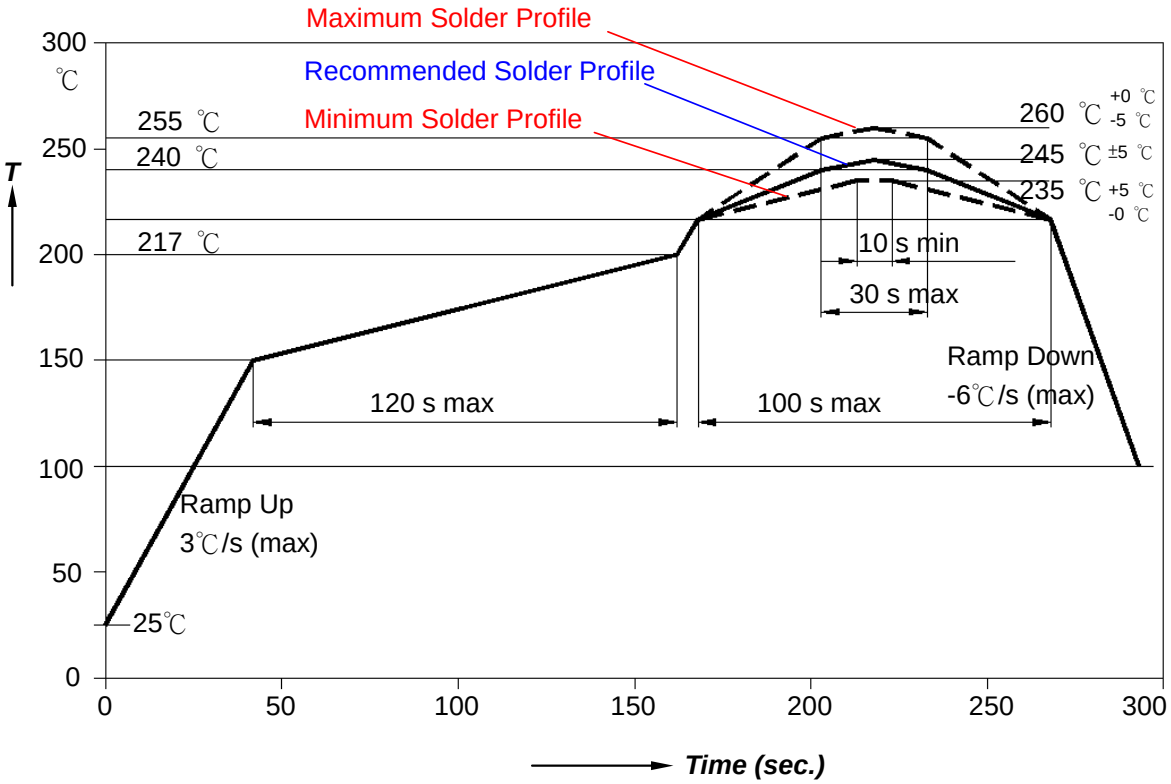
Max. Permissible Forward Current

For 4 chip operated



Recommended Soldering Profile

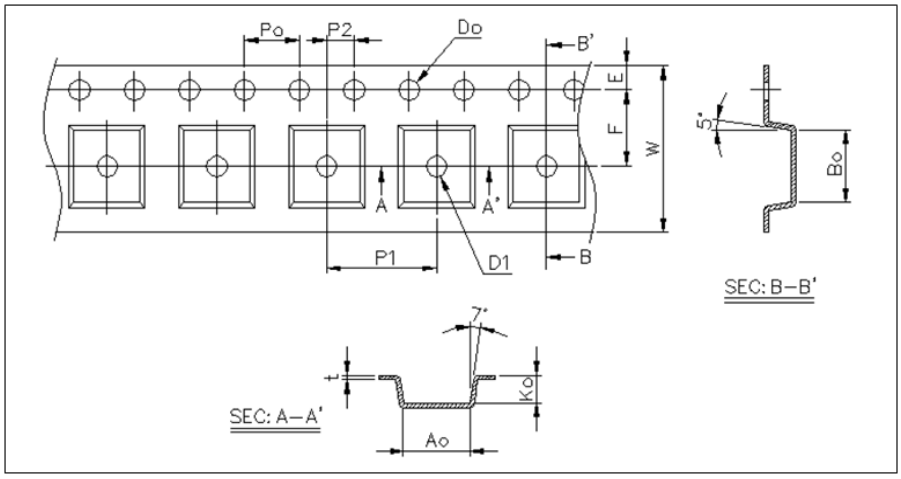
The LEDs can be soldered using the parameters listed below. As a general guideline, the users are suggested to follow the recommended soldering profile provided by the manufacturer of the solder paste. Although the recommended soldering conditions are specified in the list, reflow soldering at the lowest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



Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average ramp-up rate (Tsmax to Tp)	3°C / second max.	3°C / second max.
Preheat • Temperature Min (Ts_{min}) • Temperature Max (Ts_{max}) • Time (Ts_{min} to Ts_{max}) (ts)	100 °C 150 °C 60-120 seconds	150 °C 200 °C 60-180 seconds
Time maintained above: • Temperature (T_L) • Time (T_L)	183 °C 60-150 seconds	217 °C 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.

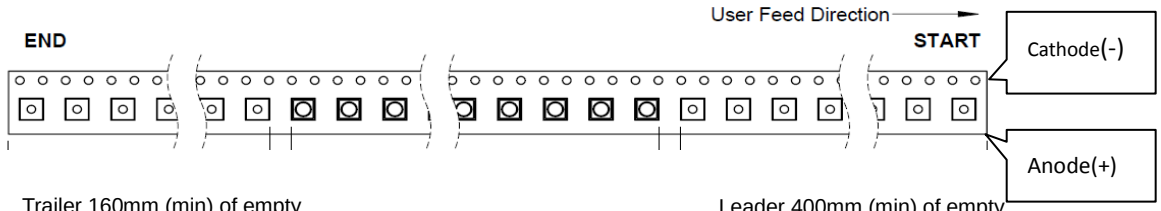
Packing Information

Max QTY: 500ea / roll



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

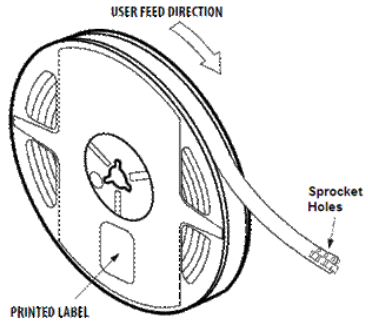
Item	Specification	Tol.(+/-)
t	0.30	±0.05
A0	5.30	±0.10
B0	5.40	±0.10
K0	3.10	±0.10

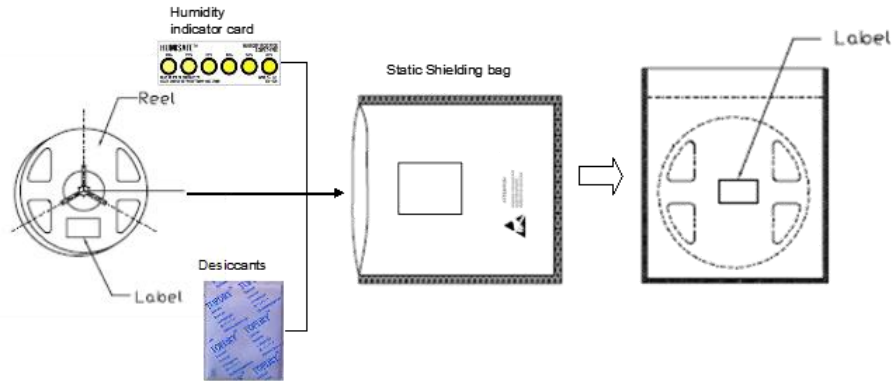


Trailer 160mm (min) of empty pockets sealed with tape

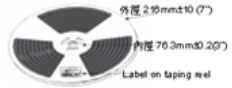
Loaded Pockets

Leader 400mm (min) of empty pockets sealed with tape

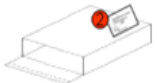




MFG Packing



Ship out packing Step



1 bag in an inner box= 500pcs

FG in after OQC Packing

1 reel in a bag = 500pcs

Small size: 5 inner box in an outer box= 2500pcs

Note:

All dimensions are in millimeter.

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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