



T2016L-W0N1 Series

High Power LED

Introduction

The T2016L-W0N1 LED from TSLC brings industry leading technology to the solid state lighting market with its high quality and performance. With a silicone lens, T2016L-W0N1 LEDs from TSLC feature very high brightness and efficacy, as well as excellent lifetime.



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Characteristics

Absolute Maximum Ratings (Tj = 25°C)

Parameter	Rating
	White Series
DC Torch mode Forward Current (mA)	350mA
Peak Pulse Flash mode Current (mA)	T2016L-W0N1 series, 1500mA (100ms ON, 900ms OFF)
LED Junction Temperature	150°C
LED Operating Temperature	-40°C ~ 85°C
Storage Temperature	-40°C ~ 115°C
Soldering Temperature	Max. 260°C / Max. 10sec. (JEDEC 020)
ESD Sensitivity	8,000 V HBM (MIL-STD-883G)
Reverse Voltage	Not designed to be driven in reverse bias (VR ≤ 5V)

Product Nomenclature

T 2016 L – W0 N 1

1 2~5 6 7.8 9 10

Code 1: Substrate composition, T: Ceramic AlN

Code 2.3.4.5: Package size, 2016: 2.05*1.65 mm

Code 6: Class Code, L: Lighting

Code 7.8: Color/CCT type, W0: Warm white

Code 9: Lens type, N: Flat

Code 10: Lens version: 1: photics center;

General Characteristics at 1000mA

Part number	Color	Correlated Color Temperature, CCT		$2\theta_{1/2}$	Temperature Coefficient of Vf (mV/°C)	Thermal Resistance Junction to Pad (°C/W)
		Min	Max		$\Delta V_F / \Delta T_J$	$R\theta_{J-L}$
T2016L-W0N1	Warm White	2300K	3000K	140	-2~-4	10

Notes:

1. The CCT is measured with an accuracy of $\pm 200K$
2. The CRI is measured with a tolerance of ± 2
3. All values stated are subject to the limits and set up of TSLC's testers. All other measurement data are defined as long-term production mean values and are only given for reference.
4. A critical component is a component used in a life-support device or system whose failure can reasonably be expected to cause the failure of that life-support device or system, or to affect its safety or effectiveness of that device or system. Life support devices or systems are intended (i) to be implanted in the human body, or (ii) to support and/or maintain and sustain human life. If they fail, it is reasonable to assume that the health of the user may be endangered. Components used as a critical component must be approved in writing by TSLC Corporation.

Luminous Flux and Forward Voltage (Tj = 25°C)

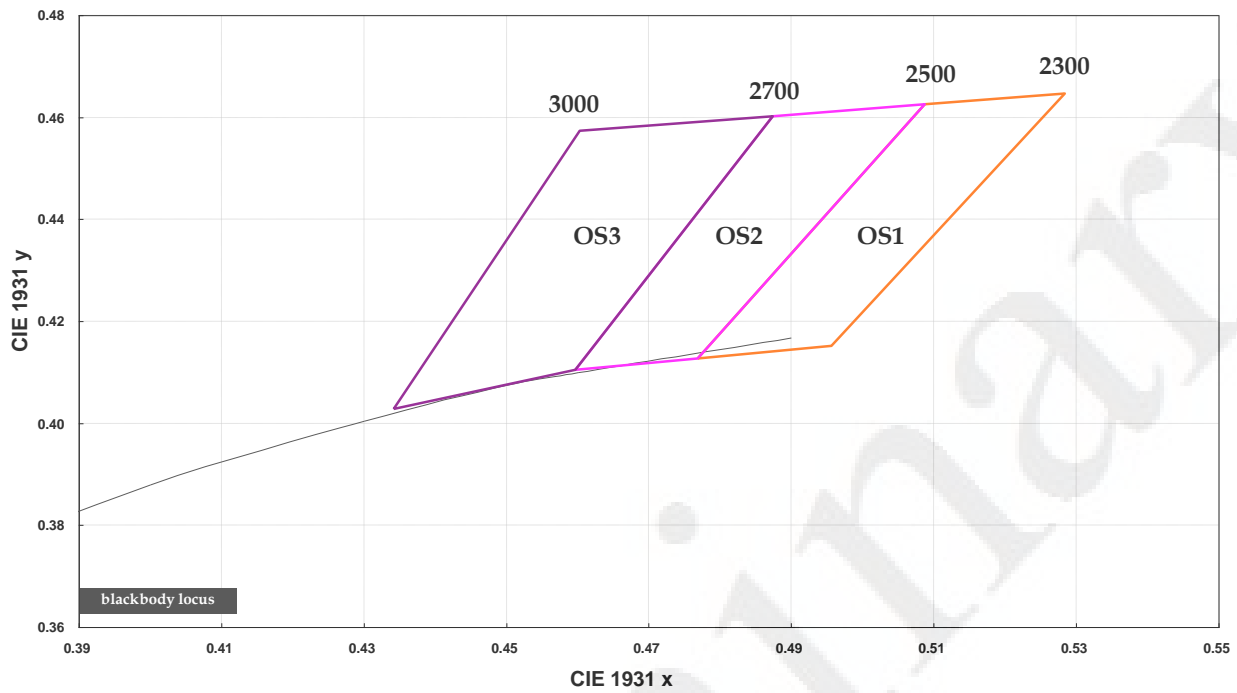
Part number	Color	Group	Minimum Luminous Flux @ 1000mA (lm)	※Calculated Minimum Luminous Flux @ 1500mA (lm)	Forward Voltage @ 1000mA (V)	
					Min	Max
T2016L-W0N1 series (1000mA)	Warm White	NTE	140	175	3.0	4.2
		NTF	160	200	3.0	4.2
		NTG	180	225	3.0	4.2
		NTH	200	250	3.0	4.2
		NTI	220	275	3.0	4.2
		NTJ	240	300	3.0	4.2
		NTK	260	325	3.0	4.2

Note:

1. Electro-optical testing is in single pulse mode Ton: 15ms, Tj: 25°C
2. Luminous Flux is measured with an accuracy of $\pm 10\%$
3. The forward voltage is measured with an accuracy of $\pm 0.2V$

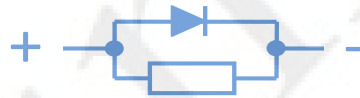
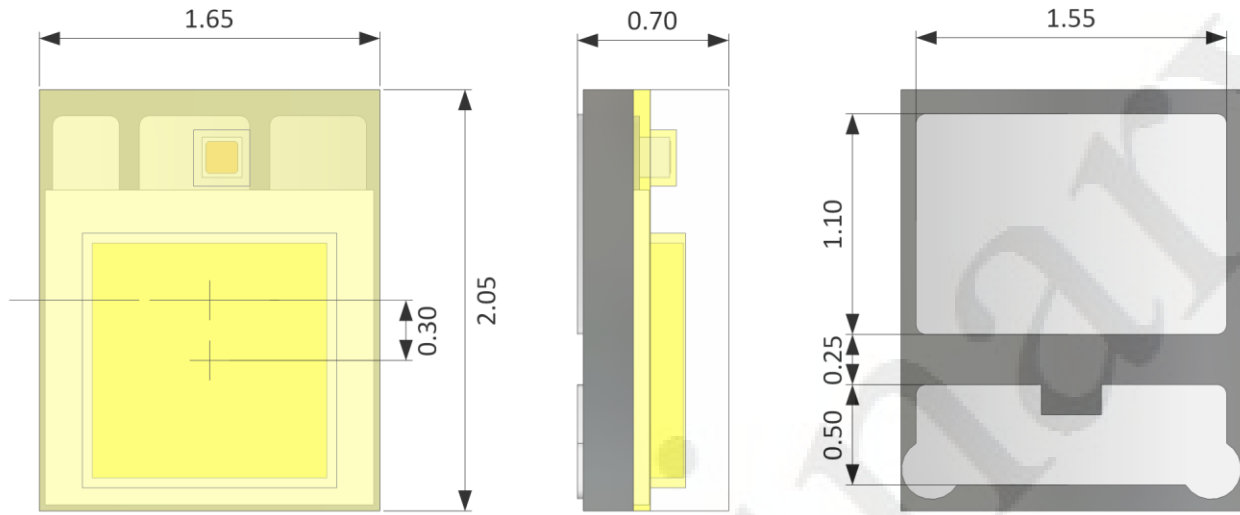
※Calculated flux values are for reference only.

CCT Binning



Bin Code	CIE x	CIE y	CCT Range	Bin Code	CIE x	CIE y	CCT Range
OS1	0.4769	0.4127	2300-2500K	OS2	0.4597	0.4105	2500-2700K
	0.5087	0.4625			0.4874	0.4602	
	0.5284	0.4646			0.5087	0.4625	
	0.4956	0.4152			0.4769	0.4127	
OS3	0.4342	0.4028	2700-3000K				
	0.4603	0.4573					
	0.4874	0.4602					
	0.4597	0.4105					

Mechanical Dimensions



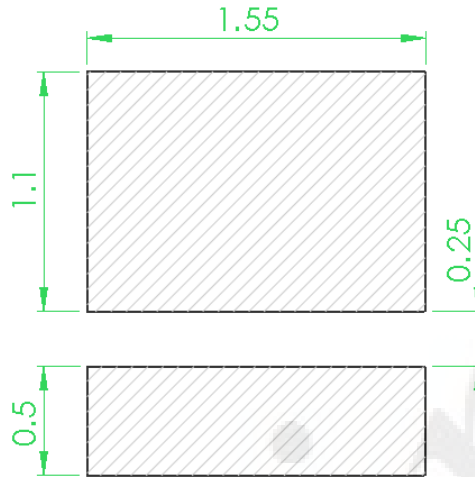
Protection device

Notes :

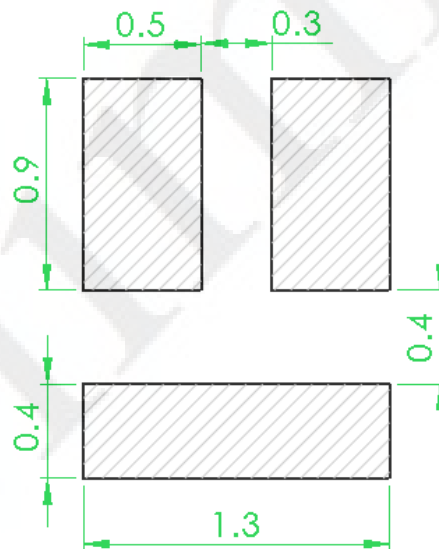
1. Drawing is not to scale
2. All dimensions are in millimeter
3. Dimensions are $\pm 0.13\text{mm}$ unless otherwise indicated

Recommended Solder Pad Design

Recommended Soldering Pad Design



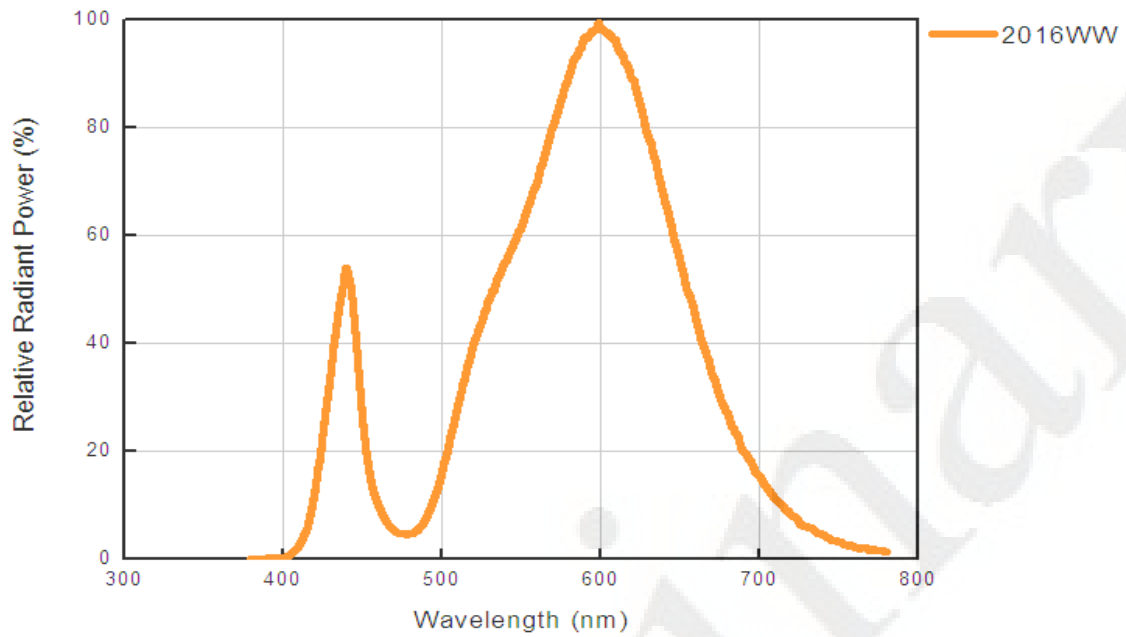
Recommended Stencil Pattern Design (Marked Area is Opening)



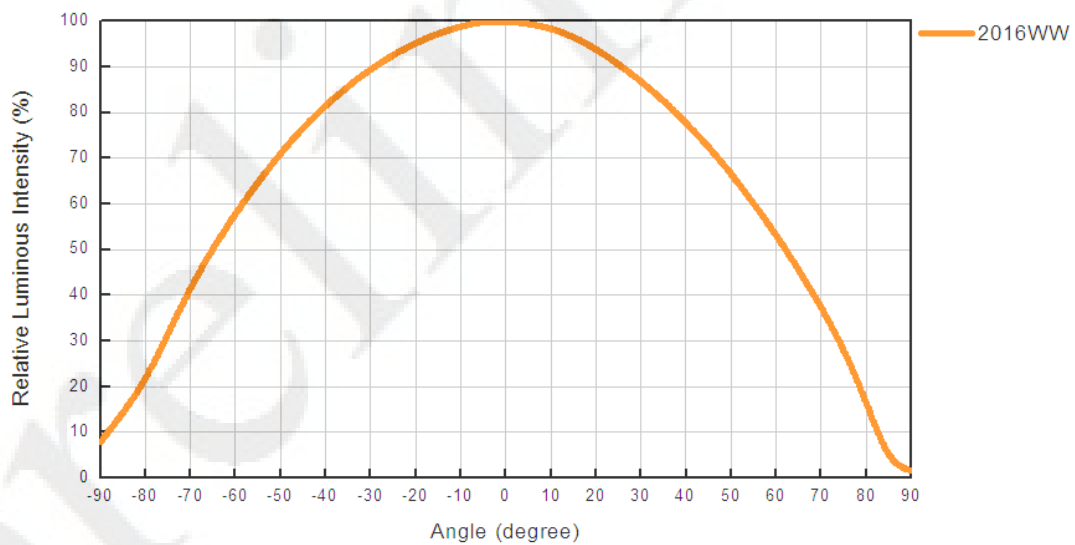
Notes :

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

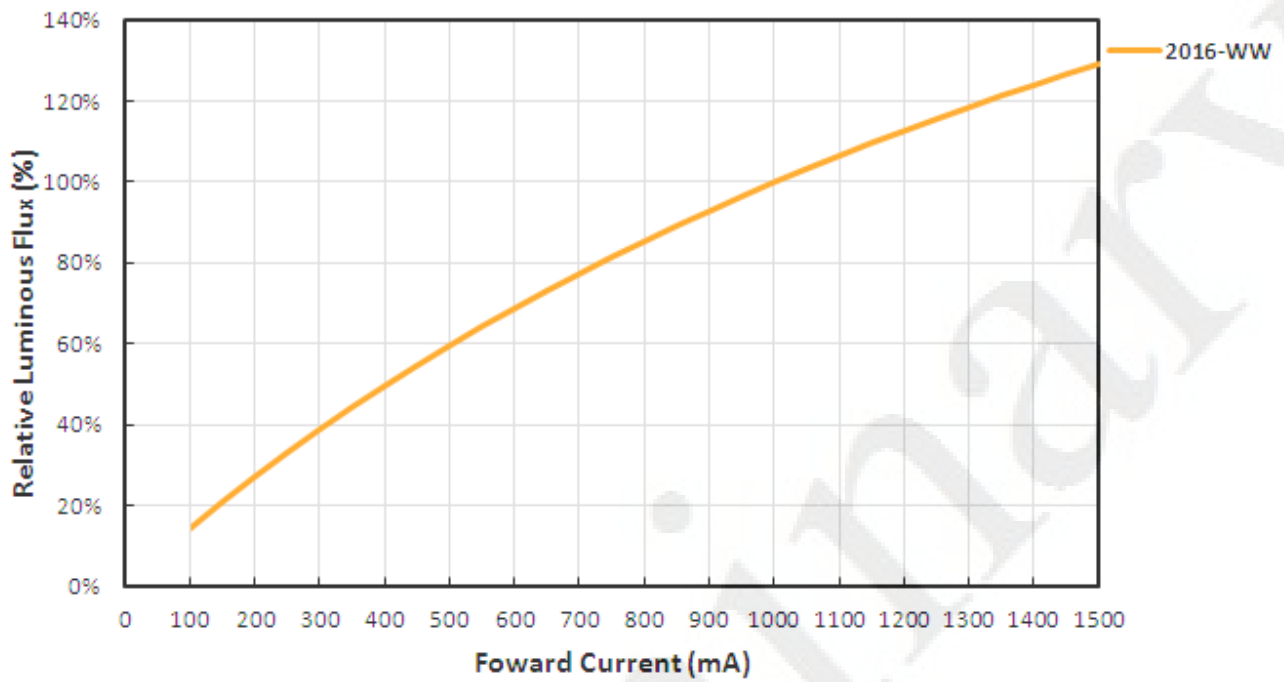
Relative Spectral Power Distribution, $T_j=25^{\circ}\text{C}$



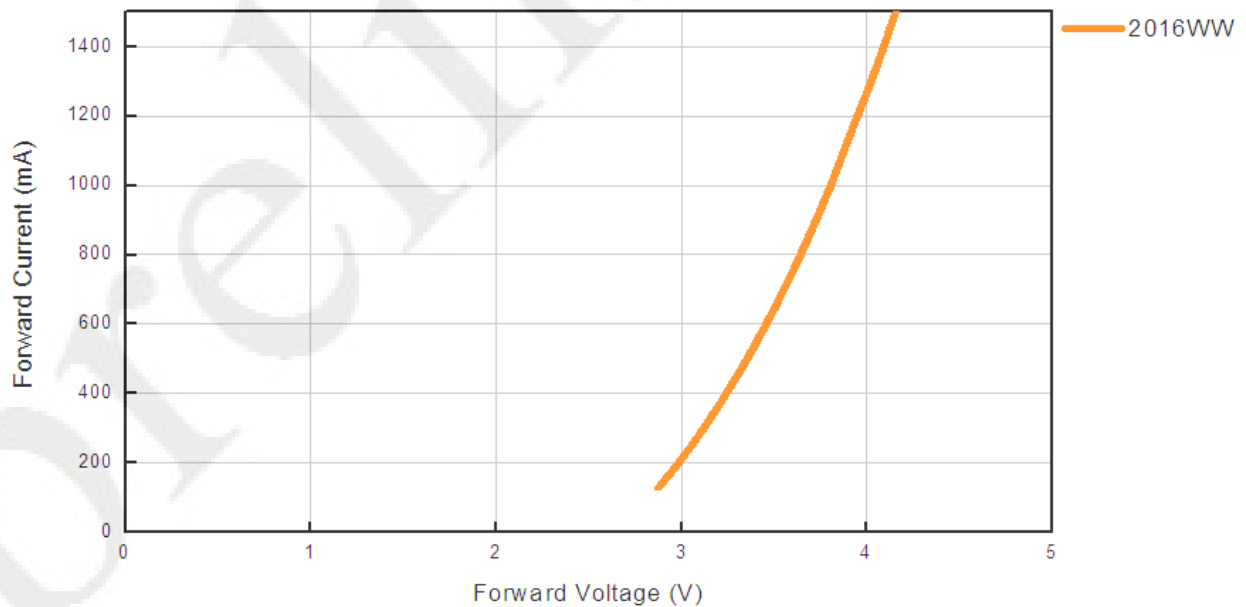
Typical Spatial Radiation Pattern



Typical Forward L-I Characteristics, $T_j=25^{\circ}\text{C}$

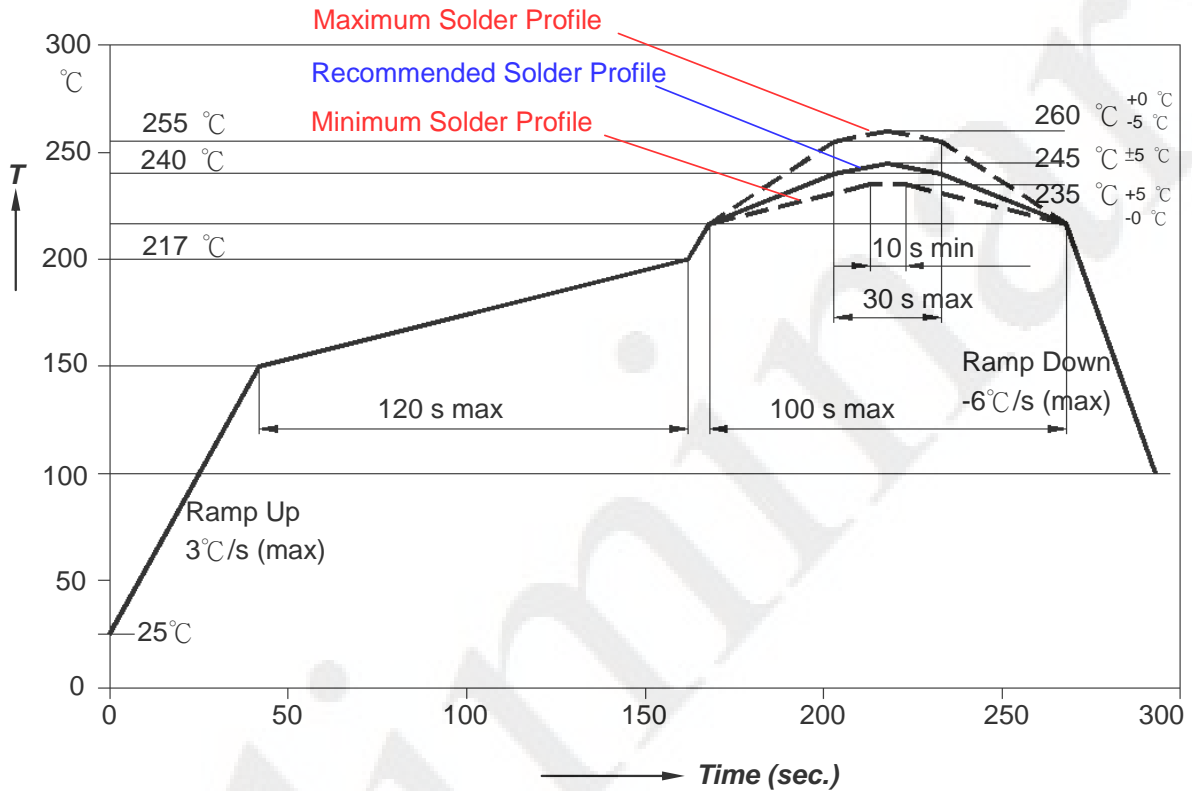


Typical Forward I-V Characteristics, $T_j=25^{\circ}\text{C}$



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.

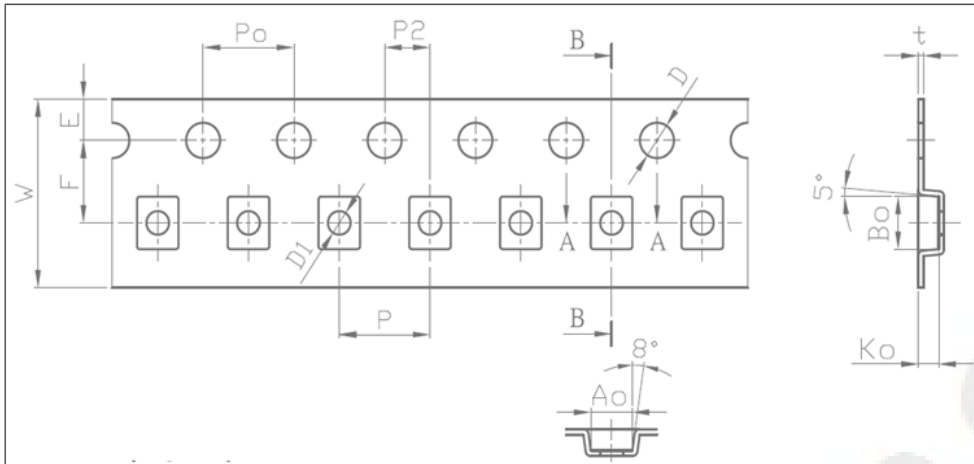


Reliability Test Plan

No	Items	Test Conditions	Test Hours / Cycles	Sample No.	Ac/Re
1	Room Temperature Operating Life (RTOL)	Temp. 25°C, If : 350mA	168Hrs	20PCS	0/1
2	High Temperature Operating Life (HTOL)	Temp. 60°C, If : 350mA	168Hrs	20PCS	0/1
3	Wet High Temperature operation Life (WHTOL)	60°C/90%RH, If : 350mA	168Hrs	20PCS	0/1
4	Temperature Cycle	H : +125°C 15min ~ 5min L : -40°C 15min	200 Cycle	20PCS	0/1
5	Low Temp. Storage	-40°C	168Hrs	20PCS	0/1
6	High Temp. Storage	100°C	168Hrs	20PCS	0/1
7	Moisture Sensitivity Level 1 (MSL)	125°C => 24hrs 85°C/85% => 168hrs 3 times reflow	3 times	20PCS	0/1
8	Pulsed Operating	If : 1500mA ; 100ms ON, 900ms OFF (10% Duty)	50K Cycle	20PCS	0/1

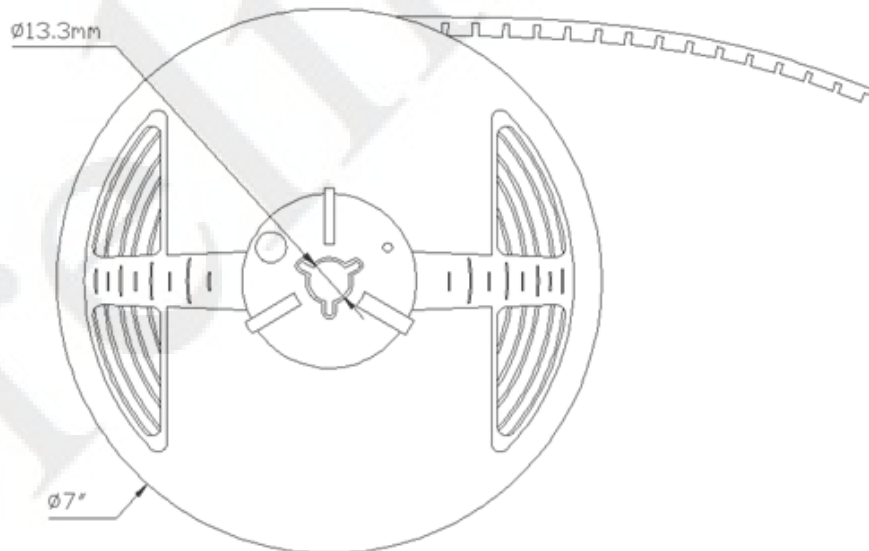
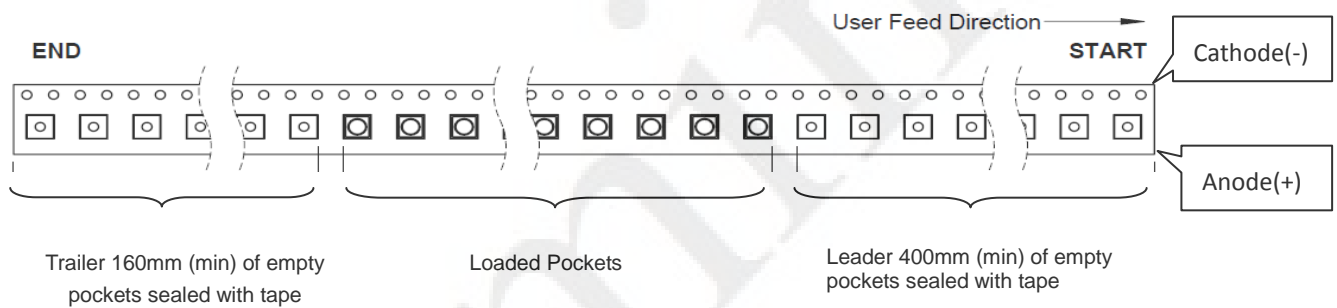
Packing Information

Max QTY: 2000ea / roll



Item	Specification	Tol.(+/-)
W	8.00	±0.10
P	4.00	±0.10
E	1.75	±0.10
F	3.50	±0.05
P2	2.00	±0.05
D	1.50	+0.10, -0
D1	1.00	+0.10, -0
P0	4.00	±0.10
P0X10	40.00	±0.20

Item	Specification	Tol.(+/-)
A0	1.88	±0.10
B0	2.23	±0.10
K0	0.90	±0.10
t	0.23	±0.05



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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