

PRODUCT SPECIFICATION

Part Number
PL00133-YDW01

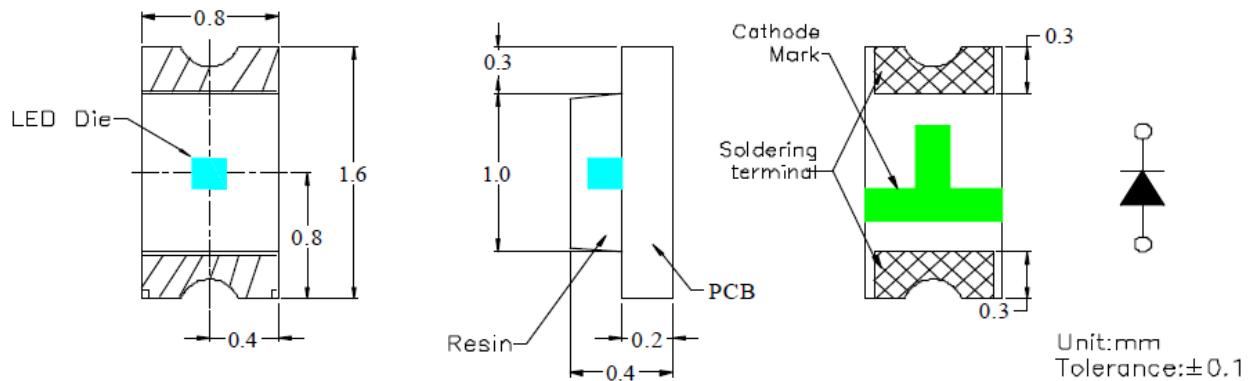
Details

- 0603 Package Thin Surface Mount LED
- 1.6mm x 0.8mm x 0.4mm
- Emitting color: White
- InGaN chip material
- 4,000 Piece Reels

Features

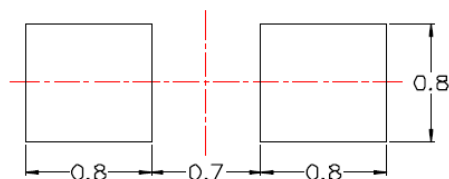
- RoHS Compliant
- Compatible with automatic placement equipment
- Compatible with reflow solder process

Mechanical Dimensions



1. Soldering terminal may shift in x, y direction.

Recommended Soldering Pad Dimensions



Notes:

1. Dimensions in millimeters unless otherwise noted
2. Specifications subject to change without notice





Device Selection Guide

Model Number	Chip		Lens Type
	Material	Emitting Color	
PL00133-YDW01	InGaN	White	Yellow Diffused

Absolute Maximum Ratings at Ta=25 °C

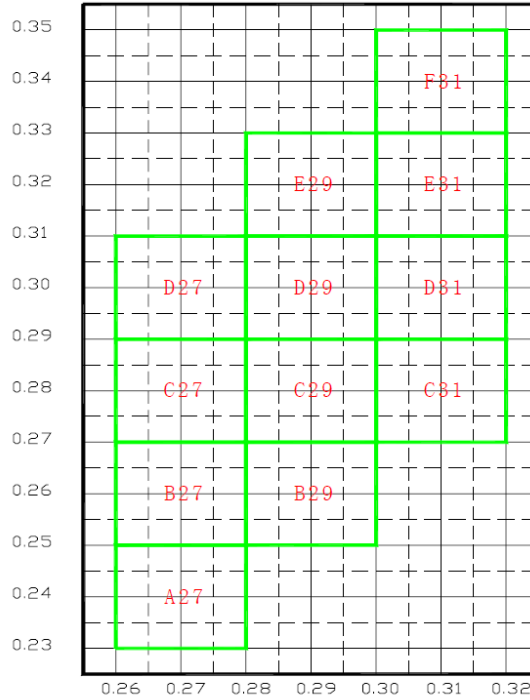
Parameter	Symbol	Maximum	Unit
Power Dissipation	PD	108	mW
Continuous Forward Current	IFmax	30	mA
Peak Forward Current (duty cycle 1/10, 0.1ms Pulse Width)	IFP	100	mA
Derating Liner from 25°C	--	0.4	mA/°C
Reverse Voltage	VR	5	V
Operating Temperature	Topr	-40~+85	°C
Storage Temperature	Tstg	-40~+85	°C

Electrical and Optical Characteristics at Ta=25 °C

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	VF	IF=5mA	2.6	3.0	3.4	V
		IF=20mA	2.8	3.1	3.6	
Luminous Intensity	Iv	IF=5mA	57.0	145.	--	mcd
		IF=20mA	225.0	360.0	--	
Peak Emission Wavelength	λP	IF=20mA	--	455	--	nm
CIE	X	IF=5mA	x: 0.26	x: 0.31	x: 0.32	nm
		IF=20mA	x: 0.25	x: 0.30	x: 0.31	
Reverse Current	IR	VR=5V	--	--	10	μA
Viewing Angle	2 θ 1/2	--	--	130°	--	deg

Notes: Tolerance Luminous intensity ±15% and x y ±0.01

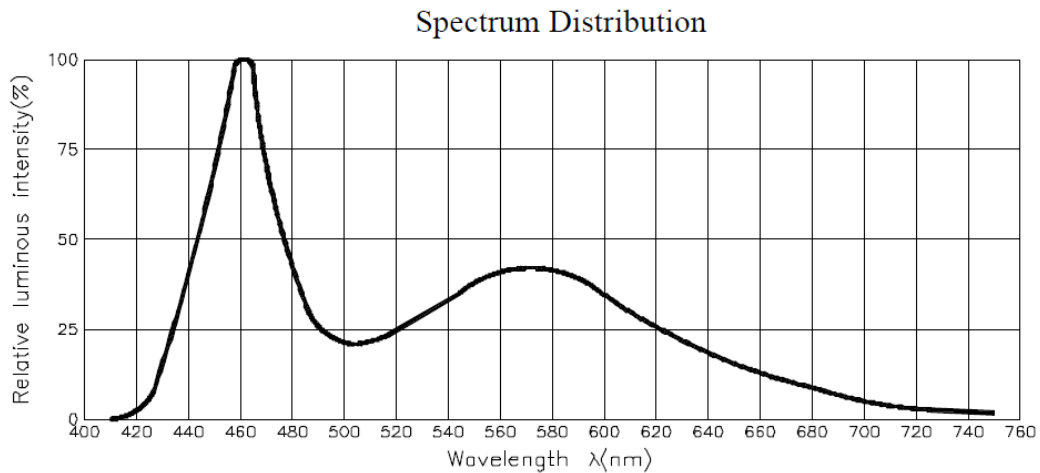
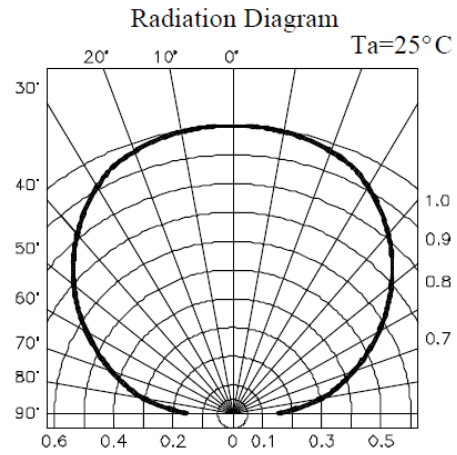
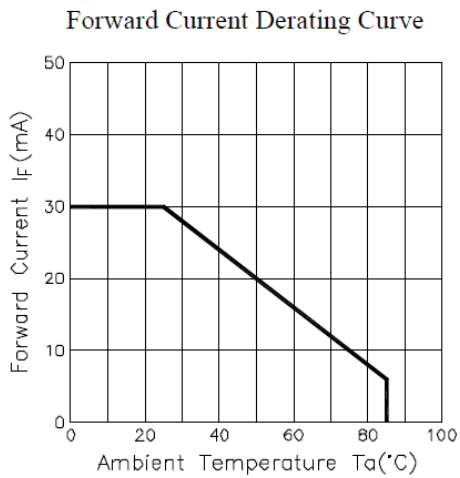
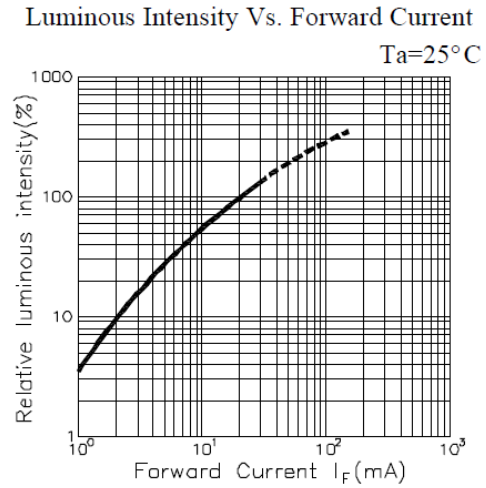
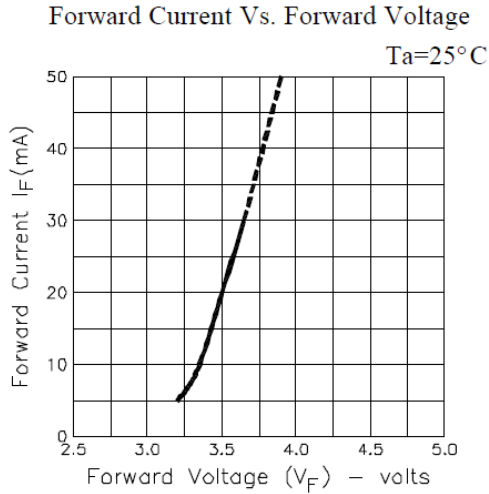
Optical / Electrical Characterization



Forward Voltage Bins

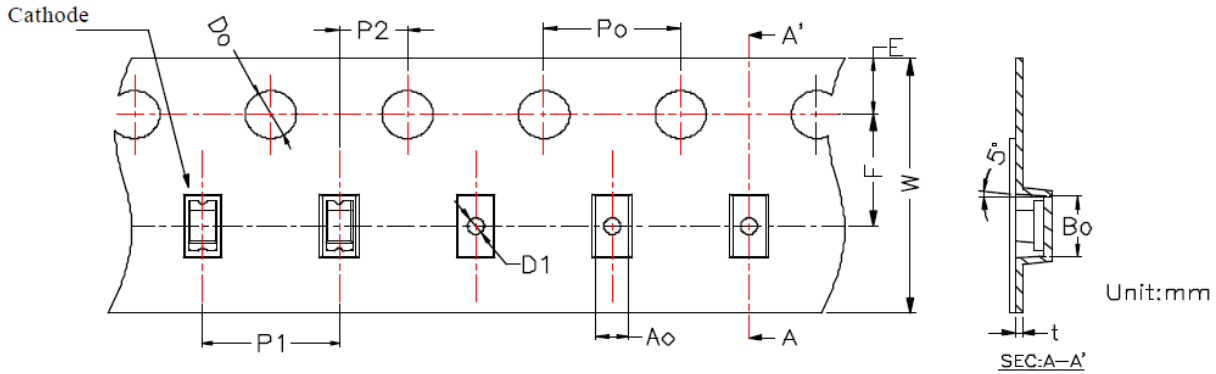
Test Condition: @5mA		
Bin Code	Min. VF (V)	Max. VF (V)
C D	2.6	2.8
EF	2.8	3.0
G H	3.0	3.2

Typical Electrical / Optical Characteristic Curves

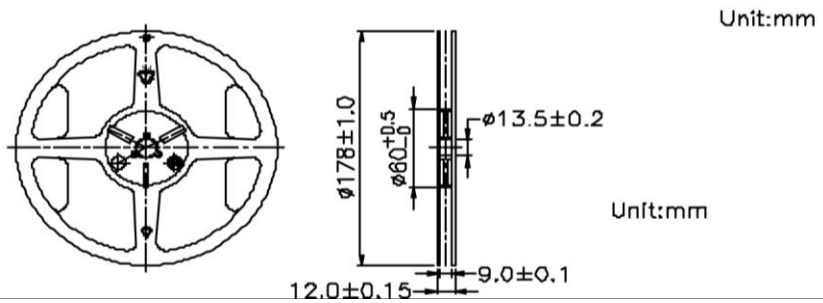


Tape Specifications

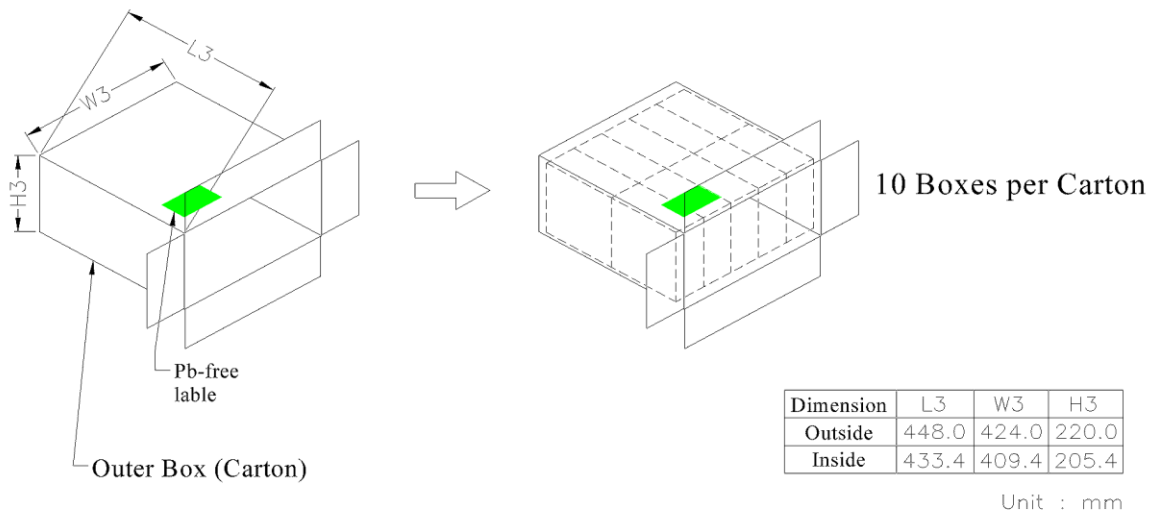
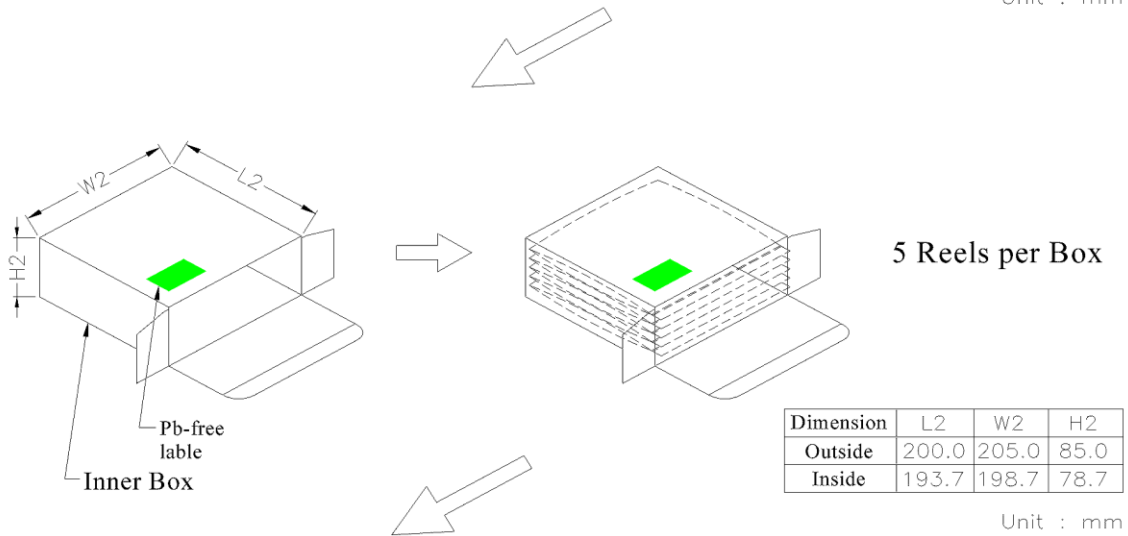
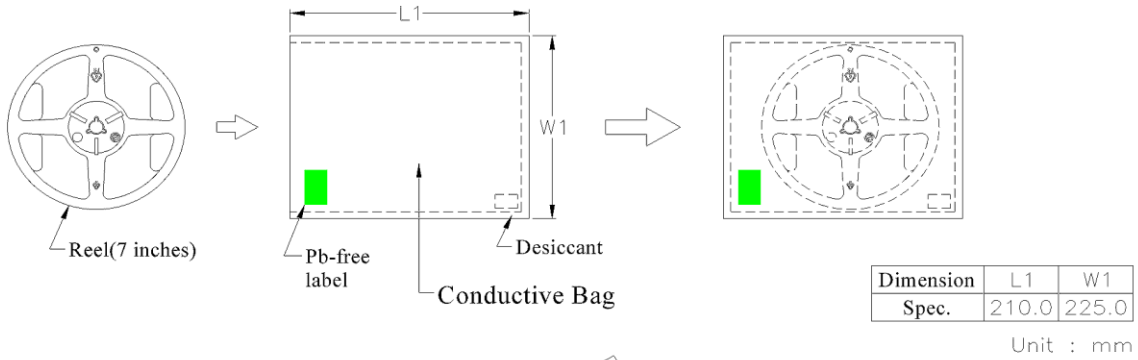
Packing Size													
Item	W	P1	E	F	D _o	D1	P _o	10P _o	P2	A _o	B _o	K _o	t
Spec.	8.00	4.00	1.75	3.50	1.50	0.5	4.00	40.00	2.00	0.95	1.80	0.96	0.22
Tolerance	±0.20	±0.10	±0.10	±0.05	$\begin{smallmatrix} +0.10 \\ -0.00 \end{smallmatrix}$	±0.05	±0.05	±0.20	±0.05	±0.10	±0.10	±0.10	±0.05



Packing and Shipping Specifications



Packaging



Precautions for Use

- The Chip-LED Taping is much smaller than lead frame type components, thus enable smaller board size, higher packing density, reduced storage space and finally smaller equipment to be obtained.
- Besides, lightweight makes them ideal for miniature application, etc.

No.	Item	Test Conditions	Test hr/cycle/time	Sample Q'ty	Ac / Re
1	Solder Heat	TEMP : 260°C±5°C ; 10±1 sec	2 times	30 pcs	0 / 1
2	Solderability Test ※	TEMP : 235°C±5°C ; 3±1 sec	1 time	5 pcs	0 / 1
3	Temperature Cycle	H : +85°C 30min. ∫ 5min. L : -40°C 30min.	100 cycles	20 pcs	0 / 1
4	Thermal Shock	H : +85°C 5min. ∫ L : -40°C 5min.	50 cycles	20 pcs	0 / 1
5	High Temperature Storage	TEMP : 85°C	1000 hrs	20 pcs	0 / 1
6	Low Temperature Storage	TEMP : -40°C	1000 hrs	20 pcs	0 / 1
7	DC Operating Life	$I_F = I_{Fmax}$	1000 hrs	20 pcs	0 / 1
8	High Temperature High Humidity	85°C / 90~95%R.H.	1000 hrs	20 pcs	0 / 1
9	Shocking test	100~2000Hz ; 98.1m/s ² X,Y,Z direction	2 hrs	20 pcs	0 / 1
10	Dropping test	Put on pallet ; height : 75cm	3 times	20 pcs	0 / 1

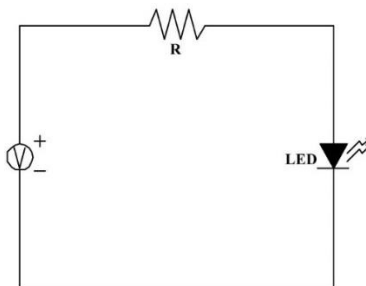
Judgment Criteria

Forward Voltage V_F	V_F Max-Increase < 1.1x
Reverse Current I_R	I_R Max-Increase < I_{Rmax}
Luminous Intensity I_V	I_V Decay < 40%

※ Solderability test criteria : coverage is not less than 95%

Note : Measurement shall be taken after the tested samples have been returned to normal ambient conditions (generally after two hours)

Test Circuit



- *Overdrive current proof*

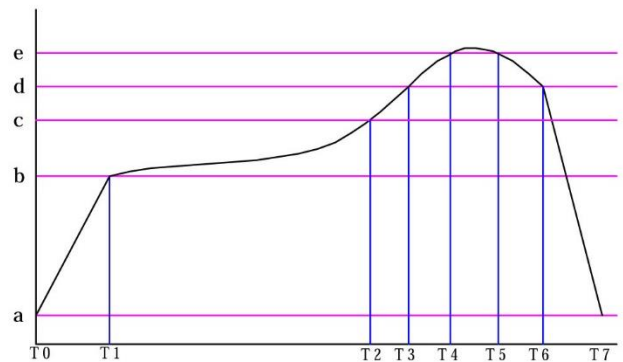
Customer must apply resistors for protection, otherwise slight voltage shift will cause current change with great deal. (Burn out will happen)

- *Storage*

1. The operation of temperature and R.H. are : $5^{\circ}\text{C}\sim 30^{\circ}\text{C}$, 60%R.H. Max.
2. Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp-proof box with desiccant. Considering the tape life, we suggest our customers use our products within 1.5 years (from production date).
3. It is recommended to bake before soldering when the package is unsealed more than 72 hrs. The condition is: $60^{\circ}\text{C}\pm 5^{\circ}\text{C}$ for 15hrs.

Reflow Temperature/Time

TEMP ($^{\circ}\text{C}$)		TIME (sec)	
a	25	T0~T1	$5^{\circ}\text{C}/\text{sec max}$
b	150	T1~T2	90~130
c	200	T2~T3	$5^{\circ}\text{C}/\text{sec max}$
d	230	T3~T6	60~90
e	260	T4~T5	10 ± 1
		T6~T7	$-6^{\circ}\text{C}/\text{sec max}$
MSL level		Level 1	



Hand Soldering Iron

Temperature at tip of iron: 400°C Max (35W Max)

Soldering time: 3 ± 1 sec.

