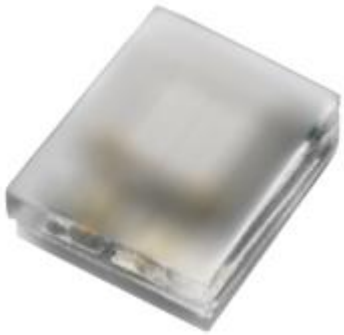
DATASHEET

ELUFA

0.08W Series



Introduction

The UFA product series is a ceramic based LED with high quality and reliability that suitable for UV application.

Features

- Low power UVA LED
- Dimension 2.0mm*1.6mm*0.75mm
- ESD protection up to 8KV
- RoHS compliant
- Pb free
- EU REACH compliant
- Halogen Free compliant
- (Br<900ppm,Cl<900ppm,Br+Cl<1500ppm)

Applications

- UV Sterilization System
- UV Photo-catalyst
- UV Sensor Light

Table of Contents

Product Nomenclature

The product name is designated as below:

ELUFA– ABCDE – FGHIJ – V1234

Designation:

AB = min. luminous flux (lm) or radiation power (mW) performance
C = radiation pattern [1]
D = color [2]
E = power consumption [3]
F = reserved for future product offerings
G = Internal code
H = packaging type [4]
IJ = internal code
V = forward voltage bin
1234 = color bin or wavelength bin

Notes

1. Table of radiation patterns

Symbol	Description
0	No Lens

2. Table of color offerings:

Symbol	Color	Dominant wavelength range
U	Ultraviolet	250~410nm

3. Table of power consumptions:

Symbol	Description
0	0W

4. Table of packaging types:

Symbol	Description
P	Tape

Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Max. DC Forward Current (mA)	I_F	20	mA
Power Dissipation	Pd	0.08	W
Max. ESD Resistance	V_B	8000	V
Max. Junction Temperature	T_J	125[5]	°C
Operating Temperature	T_{Opr}	-40 ~ +110	°C
Storage Temperature	T_{Stg}	-40 ~ +110	°C

Notes:

1. Maximum forward current is 20mA (Thermal Pad=25°C).
2. Duty cycle = 1/10@1KHZ
3. The ELUFA series LEDs are not designed for reverse bias use.
4. Thermal Resistance is from junction to backside of component.
5. Maximum junction temperature of UV is 125°C.

Electro-Optical Characteristic

Parameter	Symbol	Min.	Typ.	Max	Unit	Condition
Radiant Flux	Φ e	---	15	---	mW	IF=20mA
Forward Voltage	VF	3.4	---	4	V	
Peak Wavelength	λp	---	368	---	nm	
Viewing Angle	2θ 1/2	---	125	----	deg	

Parameter	Symbol	Min.	Typ.	Max	Unit	Condition
Radiant Flux	Φ e	---	25	---	mW	IF=20mA
Forward Voltage	VF	3.2	---	3.8	V	
Peak Wavelength	λp	---	385	---	nm	
Viewing Angle	2θ 1/2	---	125	----	deg	

Parameter	Symbol	Min.	Typ.	Max	Unit	Condition
Radiant Flux	Φ e	---	25	---	mW	IF=20mA
Forward Voltage	VF	3	---	3.6	V	
Peak Wavelength	λp	---	395	---	nm	
Viewing Angle	2θ 1/2	---	125	----	deg	

Parameter	Symbol	Min.	Typ.	Max	Unit	Condition
Radiant Flux	Φ e	---	25	---	mW	IF=20mA
Forward Voltage	VF	3	---	3.6	V	
Peak Wavelength	λp	---	405	---	nm	
Viewing Angle	2θ 1/2	---	125	----	deg	

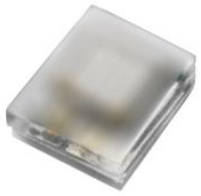
Notes:

1. Radiant flux measurement tolerance: ±10%.
2. The data of luminous flux measured at thermal pad=25℃
3. Typical radiant flux or light output performance is operated within the condition guided by this datasheet.

PN of the ELUFA series: UVA LEDs

The table below is a list of part numbers for the Everlight ELUFA 0.08W series UVA LED. Typical view angle is 125°. These clearly listed binning options allow for proper design and implementation into UV applications. The Order Codes below are currently available UVA ELUFA LEDs.

For Example: If you order product using P/N : ELUFA-Q30U1-0VPNE-DP2P3 **,** you will be specifying:



Color	Typ. Peak Wavelength (nm)	Forward Voltage (V)	Minimum Radiant Flux (mW)
UV	368	3.6	15

UV, ELUFA series LEDs at 20mA are listed below

Color	Order Code of ELUFA	Minimum Radiant Flux (mW)	Peak Wavelength (nm)	Forward Voltage (V)
Ultraviolet	ELUFA-Q30U1-0VPNE-DP2P3	15	365~375	3.4-4
	ELUFA-Q40U1-0VPNE-DP2P3	20	365~375	3.4-4
	ELUFA-Q50U1-0VPNE-DP5P6	25	380-390	3.2-3.8
	ELUFA-Q50U1-0VPNE-DP7P8	25	390-400	3-3.6
	ELUFA-Q50U1-0VPNE-DP9P0	25	400-410	3-3.6

Product Binning

Peak Wavelength Bins

Group	Bin	Minimum Peak Wavelength (nm)	Maximum Peak Wavelength (nm)
U UVC	1	260	265
	2	265	270
	3	270	275
	4	275	280
	5	280	285
P UVA	1	360	365
	2	365	370
	3	370	375
	4	375	380
	5	380	385
	6	385	390
	7	390	395
	8	395	400
	9	400	405

Radiant Flux Bin

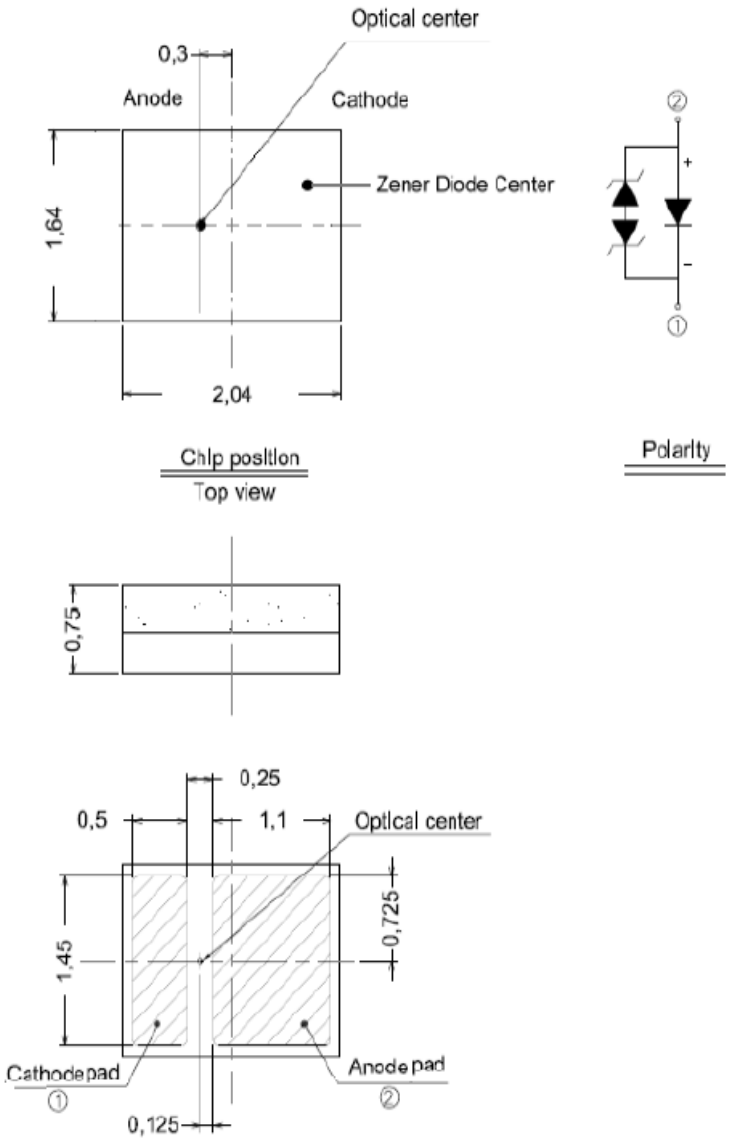
Group	Bin	Minimum Radiant Flux (mw)	Maximum Radiant Flux (mw)
Q	1	5	10
	2	10	15
	3	15	20
	4	20	25
	5	25	30
	6	30	35

Forward Voltage Bins

Group	Bin
C	V1+V2+V3
D	V2+V3+V4
E	V3+V4+V5
F	V1+V2

Bin	Minimum Forward Voltage (V)	Maximum Forward Voltage (V)
V1	2.95	3.25
V2	3.25	3.55
V3	3.55	3.85
V4	3.85	4.15
V5	4.15	4.45

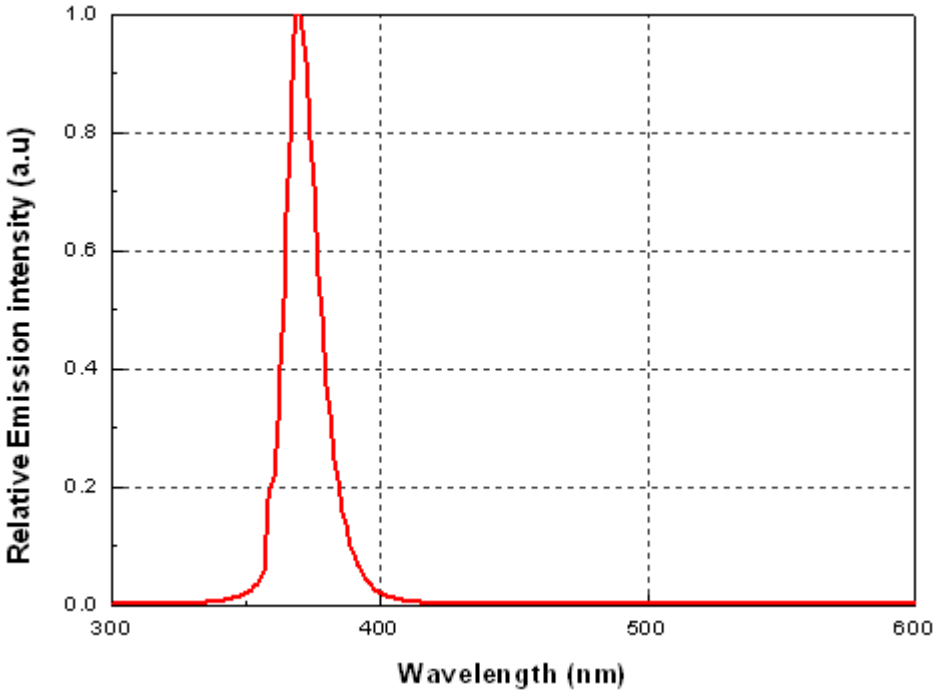
Mechanical Dimension



1. Dimensions are in millimeters.
2. Tolerances unless mentioned are ± 0.1mm

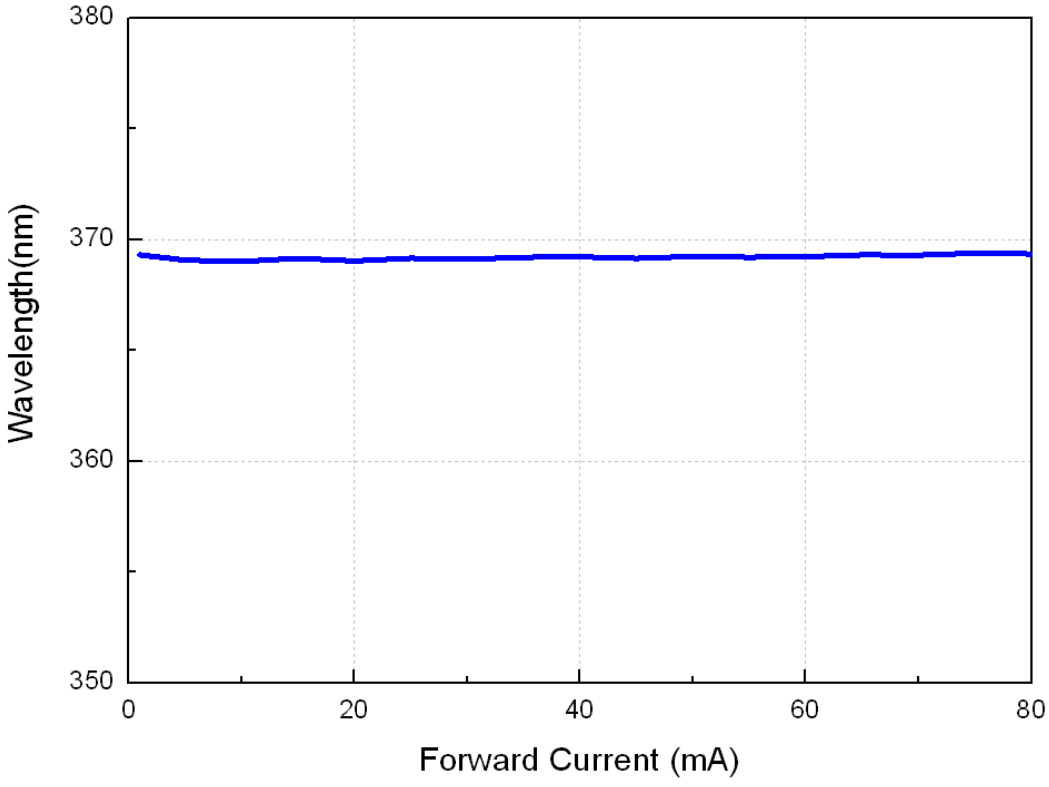
Typical Characteristics Curves

Spectrum @ Thermal Pad Temperature = 25℃



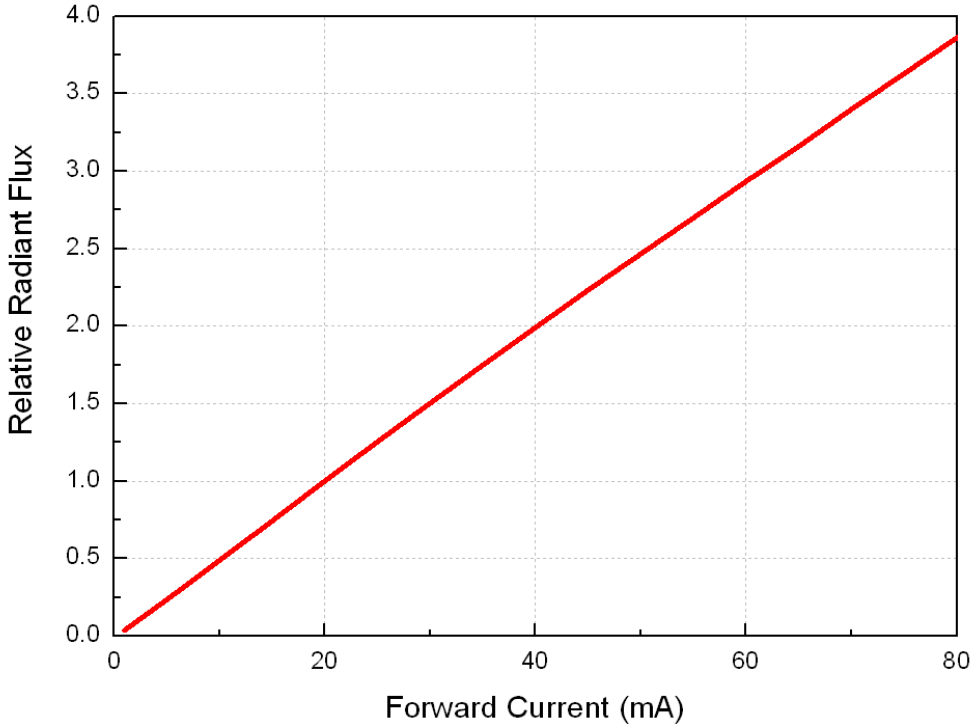
Forward Current V.S. Peak Wavelength

@ Thermal Pad Temperature = 25℃



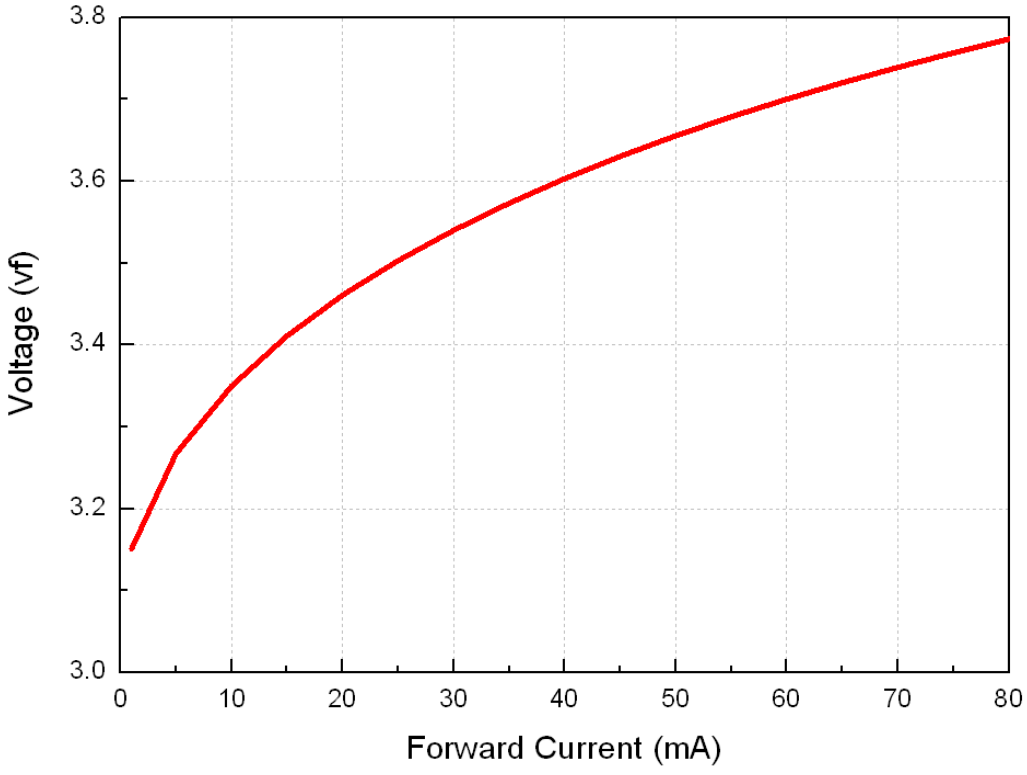
Forward Current vs. Relative Radiant Flux

@ Thermal Pad Temperature = 25℃



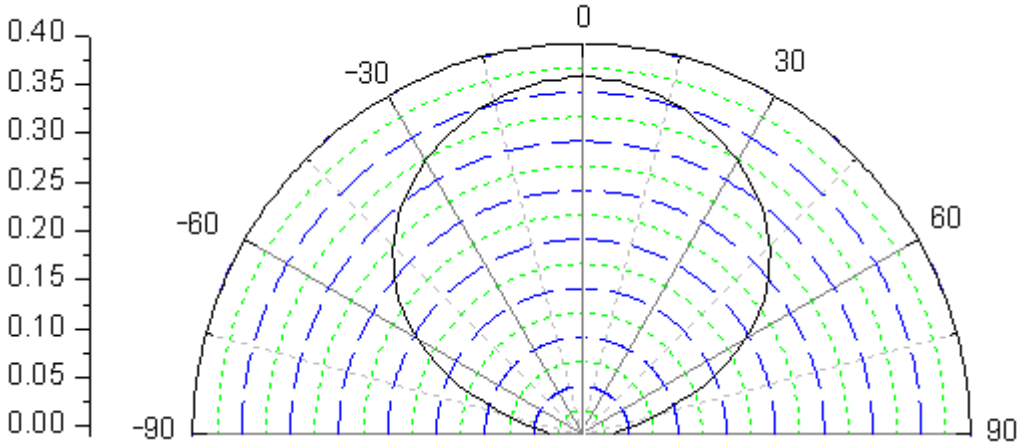
Forward Voltage vs. Forward Current

@ Thermal Pad Temperature = 25℃



Typical Radiation Patterns

Typical Diagram Characteristics of Radiation for ELUFA



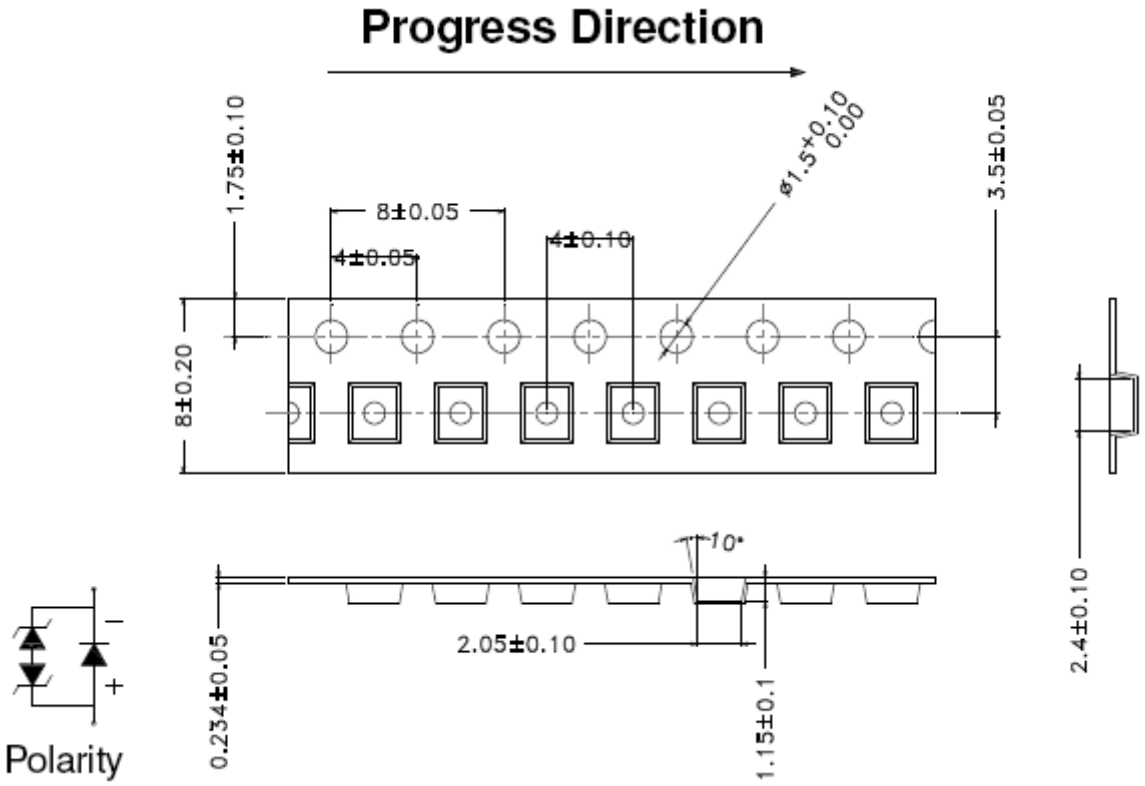
Notes:

1. $2\theta_{1/2}$ is the off axis angle from lamp centerline where the luminous intensity is 1/2 of the peak value.
2. View angle tolerance is ± 5° .

Emitter Tape Packaging

Carrier Tape Dimensions as the following:

Reel: 2000pcs

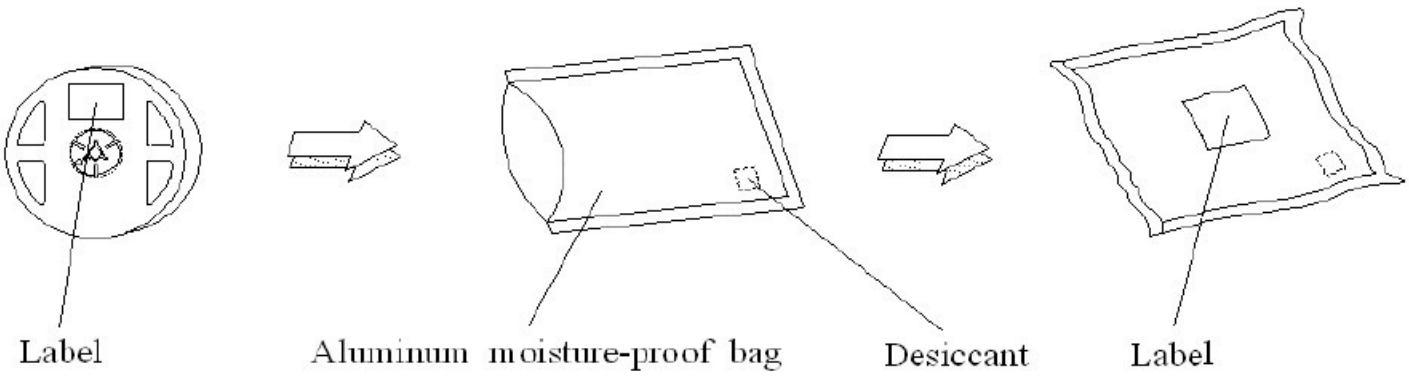


Unit = mm

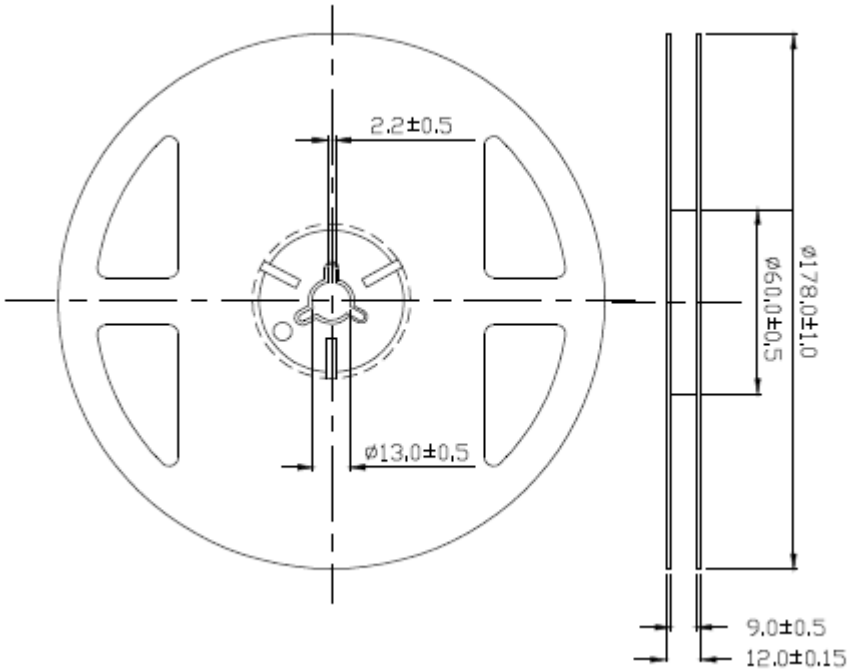
Notes:

1. Tolerance unless mentioned is ±0.1mm;

Moisture Resistant Packaging



Emitter Reel Dimensions

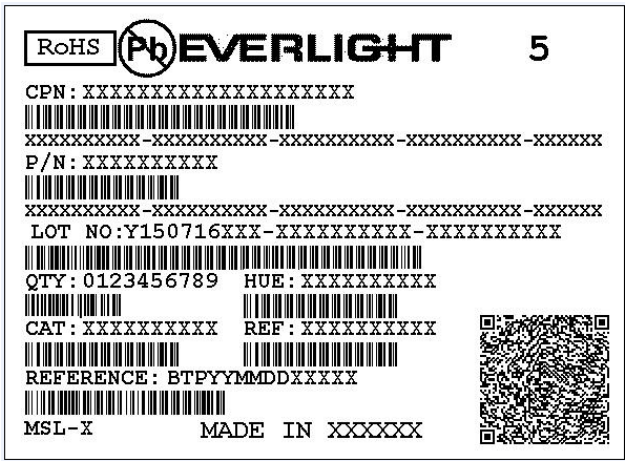


Notes:

1. Dimensions are in millimeters.
2. Tolerances unless mentioned are ±0.1mm.

Product Labeling

Label Explanation



CPN: Customer Specification (when required)

P/N : Everlight Production Number

QTY: Packing Quantity

CAT: Luminous Flux (Brightness) Bin

HUE: Color Bin

REF: Forward Voltage Bin

LOT No: Lot Number

MADE IN TAIWAN: Production Place

Storage Conditions

- Before the package is opened :The LEDs should be stored at 30°C or less and 85%RH or less after being shipped from Everlight and the storage life limits are 1 year. The LEDs can be stored up to 3 years if in a sealed container with a nitrogen atmosphere and moisture absorbent material.
- After opening the package: The LED's floor life is 168hrs when environment is 30℃ or less and 60%RH or less. The LED should be soldered within 168hrs (7days) after opening the package. If unused LEDs remain, it should be stored in moisture proof packages.
- If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions. Baking treatment: 60±5℃ for 24 hours.

Revision History

Current version: **2016//**
Previous version: **N/A**

Device No.
Rev. Ver. 1

Page	Subjects (major change in previous version)	Date of change