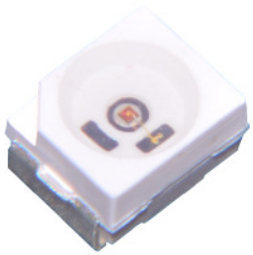
2T03Y6YX00032SA1

Ultra high reliability and luminous efficacy ,PLCC LED Series are optimized to be used as lighting for automotive signal lighting designs or signboard.



Automotive Lighting

Applications :

- Automotive Interior Lighting

Features :

- Package: Ag Plated 2 pad design package with silicone resin
- Dimension: 3.5 mmx2.8 mm
- Chip technology: AlGaInP
- View Angle: 120°
- Color: λ_{dom}=592 nm(Yellow)
- ESD: 2 kV acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 2)
- MSL: Level 2
- Qualifications: The product qualification test based on the guidelines of AEC-Q102

EDISON
Lighting Design Manufacturing Service

Table of Contents

Lighting Design Manufacturing Service

General Information

Ordering Code Format

2	T	03	Y6	YX	00	03	2	S	A	1
X1	X2	X3-X4	X5-X6	X7-X8	X9-X10	X11-X12	X13	X14	X15	X16

X1		X2		X3-X4		X5-X6		X7-X8	
Type		Component		Series		Wattage		Color/CCT	
2	Emitter	T	PLCC	03	3528	Y6	0.06W	YX	Yellow

X9-X10		X11-X12		X13		X14		X15	
CRI(Ra)		Voltage		Leadframe Mode		Leadframe Plating		Model	
00	-	03	3V	2	PPA 1.85H 2Pin	S	Silver	A	Automotive

X16	
Serial Number	
-	-

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Absolute Maximum Ratings

Absolute maximum ratings

Parameter		Symbol	Values
Operating Temperature	min. max.	T_{op}	-40 °C 110 °C
Storage Temperature	min. max.	T_{stg}	-40 °C 110 °C
Junction Temperature	max.	T_j	125 °C
Forward current T_J = 25 °C	min. max.	I_F	5 mA 30 mA
Surge Current t ≤ 10 µs; D = 0.005 ; T_J = 25 °C	max.	I_{FS}	100 mA
Reverse voltage T_J = 25 °C	max.	V_R	10V
ESD withstand voltage acc. to ANSI/ESDA/JEDEC JS-001 (HBM, Class 2)		V_{ESD}	2 kV

Notes: Proper current derating must be observed to maintain junction temperature below the maximum at all time.

Characteristics

I_F = 20 mA; T_J = 25 °C

Parameter		Symbol	Values
Peak Wavelength	typ.	λ_{Peak}	595 nm
Dominant Wavelength	min. typ. max.	λ_{dom}	589 nm 592 nm 595 nm
Viewing angle	typ.	φ	120 °
Forward Voltage	min. typ. max.	V_F	1.90 V 2.15 V 2.35 V
Reverse current V_R= 10V	typ. max.	I_R	0.01 µA 10 µA
Real thermal resistance junction/solder point	typ. max.	$R_{thJS\ real}$	65 K / W 78 K / W
Electrical thermal resistance junction/ solder point with efficiency ηe = 20 %	typ. max.	$R_{thJS\ elec.}$	50 K / W 60 K / W

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Luminous Intensity Characteristic

Luminous Intensity Characteristics, I_F=20mA , T_J=25˚C

Symbol	Group	Min. Luminous Intensity(mcd)	Max. Luminous Intensity(mcd)	Typ. Luminous Flux(mlm)
Iv	V2	900	1120	3156
	AA	1120	1400	3938
	AB	1400	1800	5040

Note:
The luminous intensity performance is guaranteed within published operating conditions. Edison Opto maintains a tolerance of ±10% on intensity measurements.

Voltage Bin Structure

Voltage Bin Structure, I_F=20mA , T_J=25˚C

Symbol	Group	Min. Voltage (V)	Max. Voltage (V)
V_F	A90	1.90	2.05
	B05	2.05	2.20
	B20	2.20	2.35

Note:
Forward voltage measurement allowance is ± 0.1V.

Wavelength Bin Structure

Wavelength Bin Structure, I_F=20mA , T_J=25˚C

Symbol	Group	Min. Wd (nm)	Max. Wd (nm)
λ_{dom}	A89	589	592
	A92	592	595

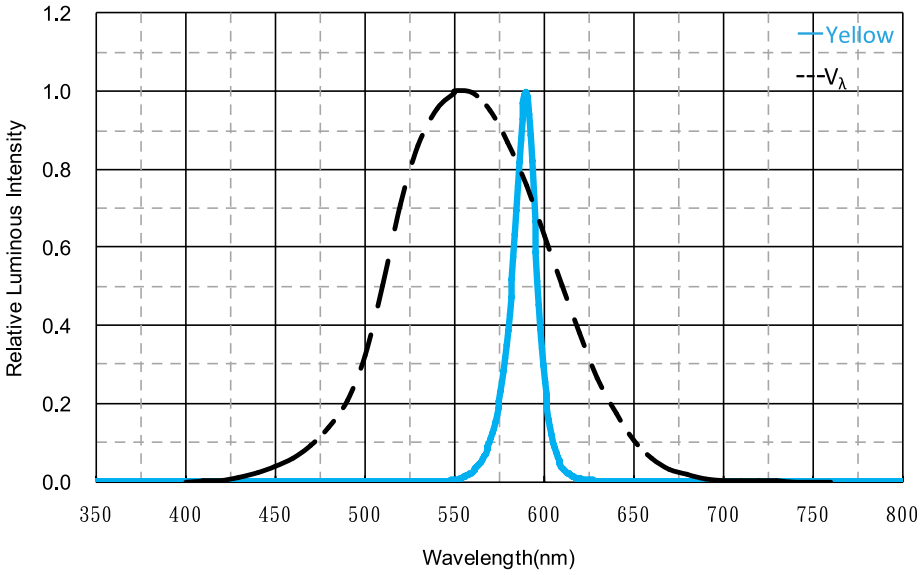
Note:
Dominant wavelength meansurement allowance is ± 1nm.

Lighting Design Manufacturing Service

Characteristic Curves

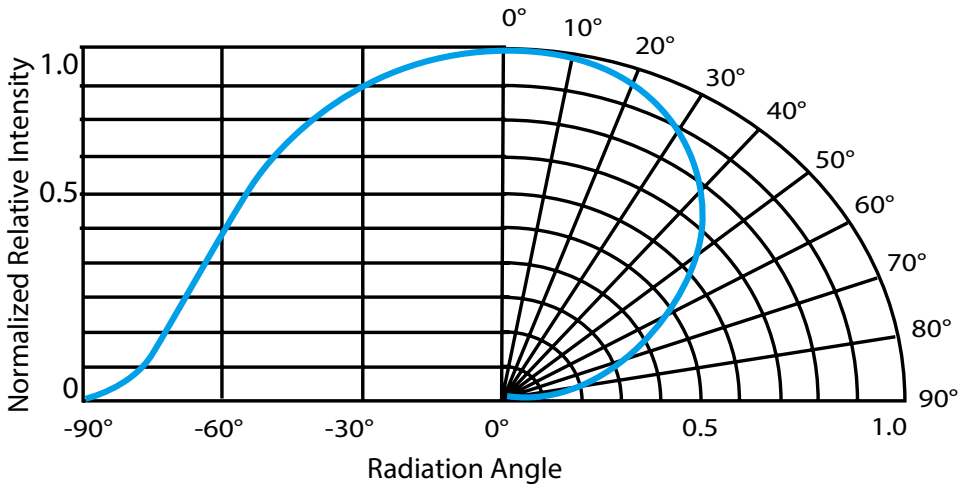
Color Spectrum

I_F =20 mA ; T_J = 25 °C



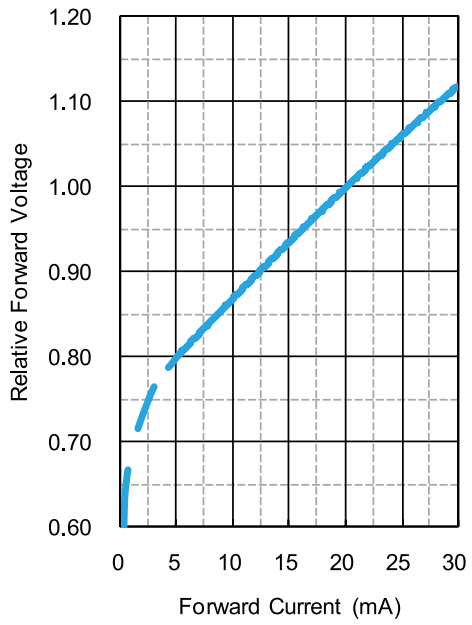
Beam Pattern

I_F =20 mA ; T_J = 25 °C



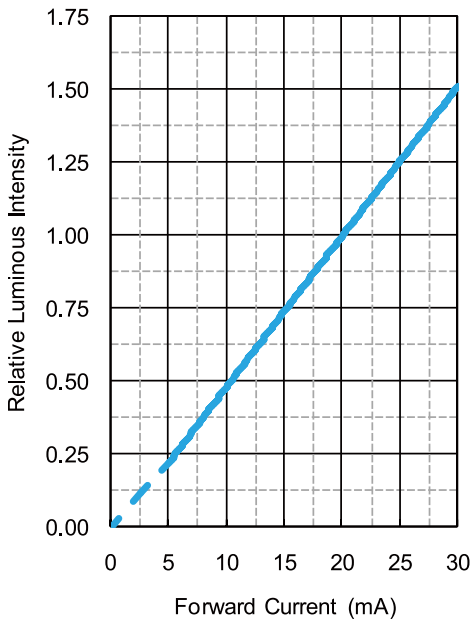
Relative Foward Voltage

$V_F/V_F(20\ mA) = f(V_F); T_J = 25\ °C$



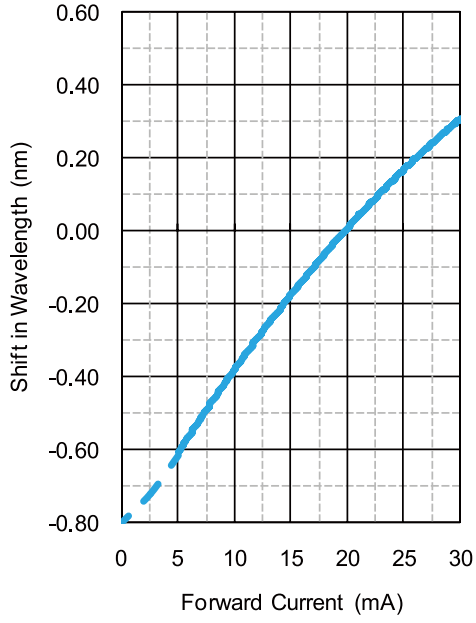
Relative Luminous Intensity

$I_v/I_v(20\ mA) = f(I_v); T_J = 25\ °C$



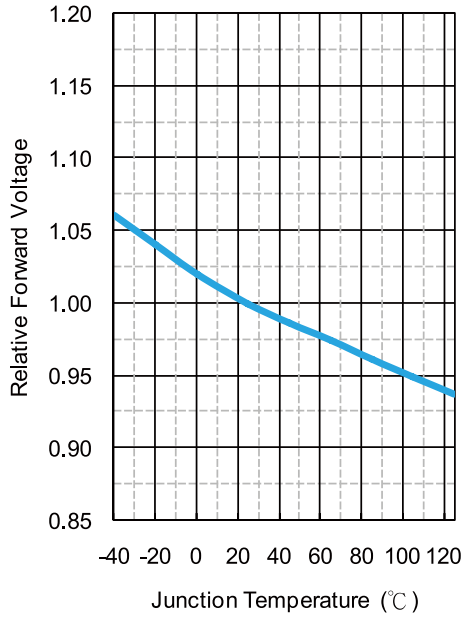
Shift in Dominant Wavelength

$\Delta\lambda_{dom} = \lambda_{dom} - \lambda_{dom}(20\ mA); T_J = 25\ °C$



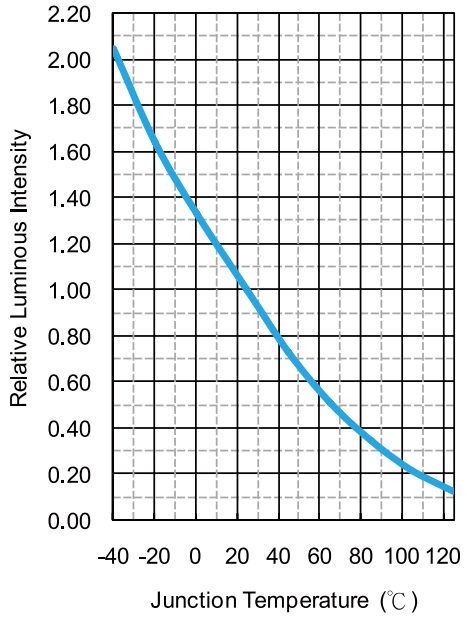
Relative Forward Voltage

$V_F/V_F(25\ °C) = f(V_F);\ I_F = 20\ mA$



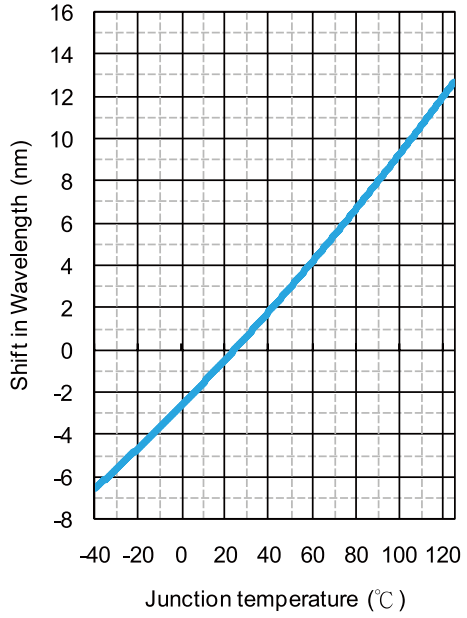
Relative Luminous Intensity

$I_v/I_v(25\ °C) = f(I_v);\ I_F = 20\ mA$



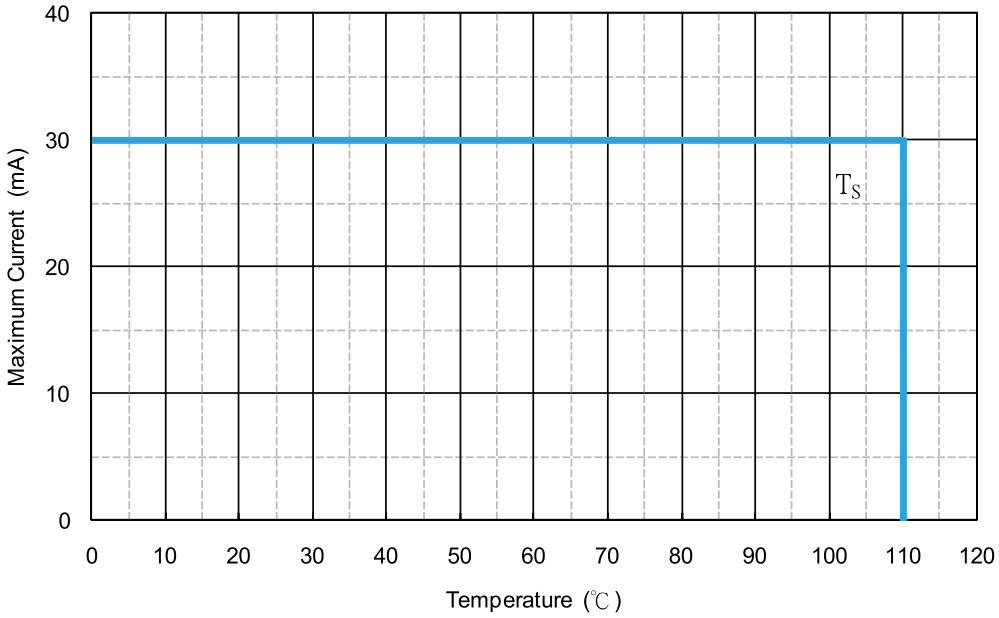
Shift in Dominant Wavelength

$\Delta\lambda_{dom} = \lambda_{dom} - \lambda_{dom}\ (25\ °C);\ I_F = 20\ mA$



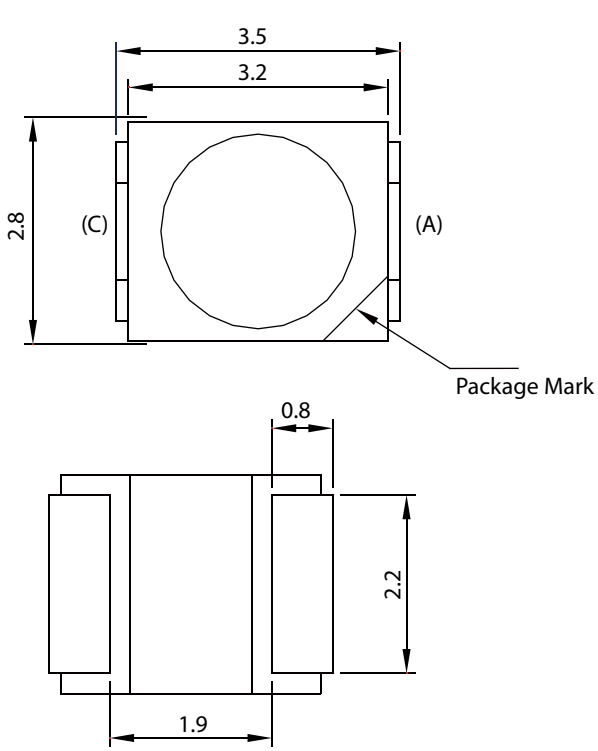
Max. Permissible Forward Current

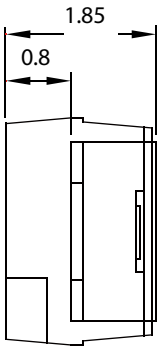
$I_F = f(T)$



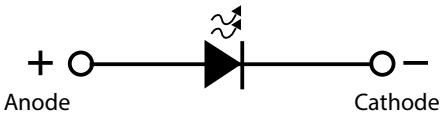
Mechanical Dimensions

Dimensional Drawing



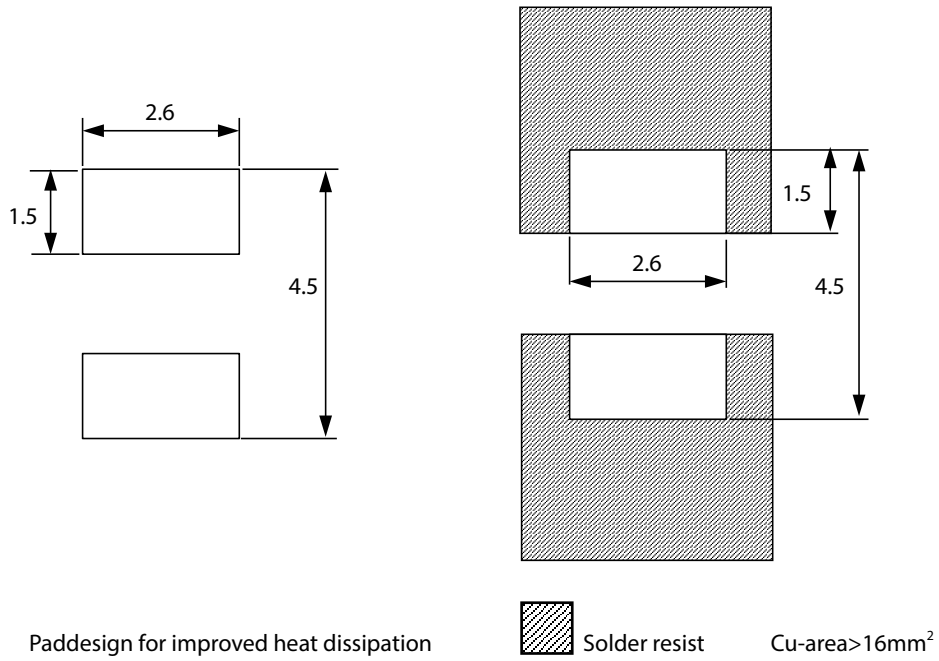


Circuit



Notes:
1. All dimensions are measured in mm.
2. Tolerance : ± 0.1 mm
3. Approximate Weight : 30.0 mg

Recommended Solder Pad

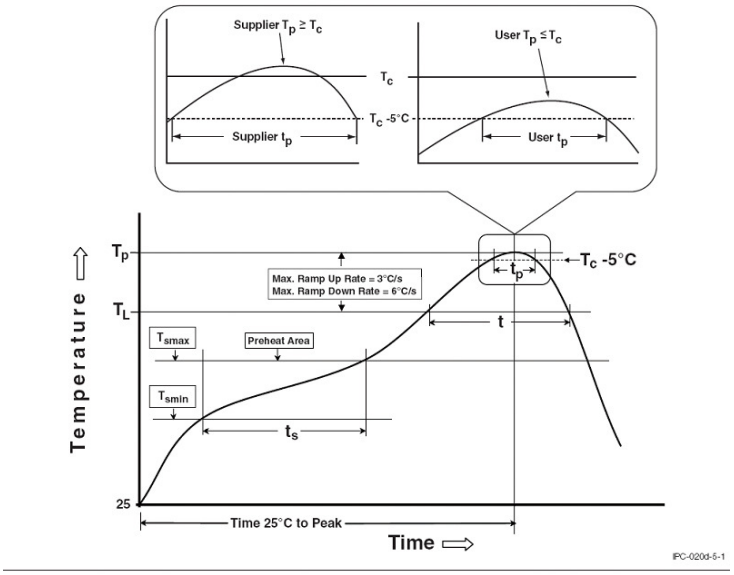


Paddesign for improved heat dissipation Solder resist Cu-area>16mm^2

Notes:
1. All dimensions are measured in mm.
2. Tolerance : ± 0.1 mm

Reflow Profile

The following reflow profile is from IPC/JEDEC J-STD-020D which provided here for reference.

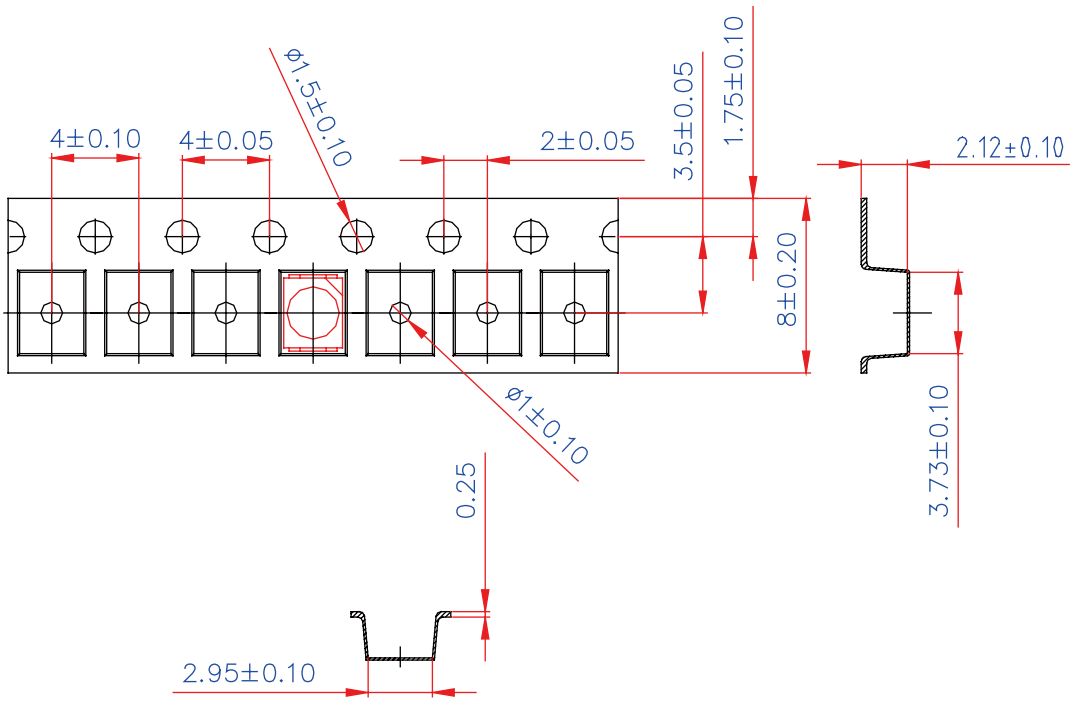


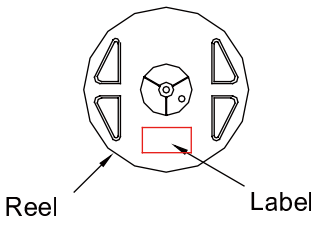
Reflow Profiles

Classification Reflow Profiles

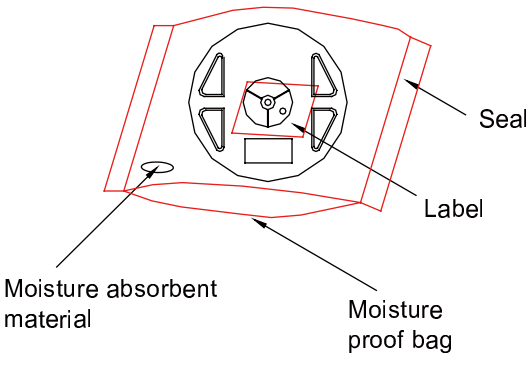
Profile Feature	Pb-Free Assembly
Preheat & Soak Temperature min (Tsmin) Temperature max (Tsmax) Time (Tsmin to Tsmax) (ts)	150 °C 200 °C 60-120 seconds
Average ramp-up rate (Tsmax to Tp)	3 °C/second max.
Liquidous temperature (TL) Time at liquidous (tL)	217 °C 60-150 seconds
Peak package body temperature (Tp)	255 °C ~260 °C
Classification temperature (Tc)	260 °C
Time (tp) within 5 °C of the specified classification temperature (Tc)	30 seconds
Average ramp-down rate (Tp to Tsmax)	6°C/second max.
Time 25°C to peak temperature	8 minutes max.

Product Packaging Information





Taping reel dimensions



Package & label

Item	Quantity	Total	Dimensions(mm)
Reel	2,000pcs	2,000pcs	R=178
Starting with 250pcs empty,and 150pcs empty at the last			

Cautions

(1) Moisture monitoring is vital during the storage of LEDs for if too much moisture is absorbed, interface delamination and optical performance degradation will occur. Therefore, products should be packed in moisture-proof aluminum bags so as to reduce moisture absorption to the lowest degree during transportation and storage. Included moisture-proof aluminum bag are the key indicators that they will change from brown to azure if bags are invaded by moisture.

(2) Soldering process in compliance with the range of the conditions stated above should be conducted after opening the moisture-proof aluminum bag. The rest LEDs should be stored in a hermetically sealed container, silica gel desiccants included. And the original moisture-proof aluminum bags are recommended.

(3) If the "Period After Opening" storage time is too long or silica gel desiccants don't maintain blue any more, baking process should be done once.

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Revision History

Versions	Description	Release Date
1	Establish a Datasheet	2020/04/20

About Edison Opto

Edison Opto is a leading manufacturer of high power LED and a solution provider experienced in LDMS. LDMS is an integrated program derived from the four essential technologies in LED lighting applications- Thermal Management, Electrical Scheme, Mechanical Refinement, Optical Optimization, to provide customer with various LED components and modules. More Information about the company and our products can be found at www.edison-opto.com

www.edison-opto.com

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service@edison-opto.com.tw

For technical assistance please contact:
LED.Detective@edison-opto.com.tw