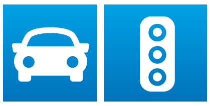
2T32X5RX0003HSAA

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　Signal Lighting

Applications :

- Automotive Interior/Exterior Lighting
- Traffic Lighting
- Signal Lighting

Features :

- Package: Ag Plated 3 pad design package with silicone resin
- Dimension: 4.0 mmx4.3 mmx2.75 mm
- Chip technology: AlGaInP
- View Angle: 120°
- Color: λ_{dom}=620 nm(Red)
- 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

Lighting Design Manufacturing Service

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Lighting Design Manufacturing Service

General Information

Ordering Code Format

2	T	3 2	X 5	R X	0 0	0 3	H	S	A	A
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	32	4043 Sideled	X5	0.5W	RX	Red

X9-X10		X11-X12		X13		X14		X15	
CRI(Ra)		Voltage		Leadframe Mode		Leadframe Plating		Model	
00	-	03	3V	H	PPA Sideled 2.75H 3Pin	S	Silver	A	Automotive

X16	
Serial Number	
-	-

Lighting Design Manufacturing Service

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 200 mA
Surge Current t ≤ 10 µs; D = 0.005 ; T_J = 25 °C	max.	I_{FS}	300 mA
Reverse voltage T_J = 25 °C	max.	V_R	10 V
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 = 140 mA; T_J = 25 °C

Parameter		Symbol	Values
Peak Wavelength	typ.	λ_{Peak}	628 nm
Dominant Wavelength	min. typ. max.	λ_{dom}	616 nm 620 nm 624 nm
Viewing angle	typ.	φ	120 °
Forward Voltage	min. typ. max.	V_F	2.05 V 2.15 V 2.35 V
Reverse current V_R= 10 V	typ. max.	I_R	0.01 µA 10 µA
Real thermal resistance junction/solder point	typ. max.	$R_{thJS\ real}$	46 K / W 55 K / W
Electrical thermal resistance junction/ solder point with efficiency ηe = 32 %	typ. max.	$R_{thJS\ elec.}$	32 K / W 38 K / W

Lighting Design Manufacturing Service

Luminous Intensity Characteristic

Luminous Intensity Characteristics, I_F=140mA , T_J=25˚C

Symbol	Group	Min. Luminous Intensity(mcd)	Max. Luminous Intensity(mcd)	Typ. Luminous Flux(lm)
Iv	EA	7100	9000	25.1
	EB	9000	11200	31.5

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=140mA , T_J=25˚C

Symbol	Group	Min. Voltage (V)	Max. Voltage (V)
V_F	B05	2.05	2.20
	B20	2.20	2.35
	B35	2.35	2.50

Note:
Forward voltage measurement allowance is ± 0.1V.

Wavelength Bin Structure

Wavelength Bin Structure, I_F=140mA , T_J=25˚C

Symbol	Group	Min. Wd (nm)	Max. Wd (nm)
λ_{dom}	R16	616	620
	R20	620	624

Note:
Dominant wavelength meansurement allowance is ± 1nm.

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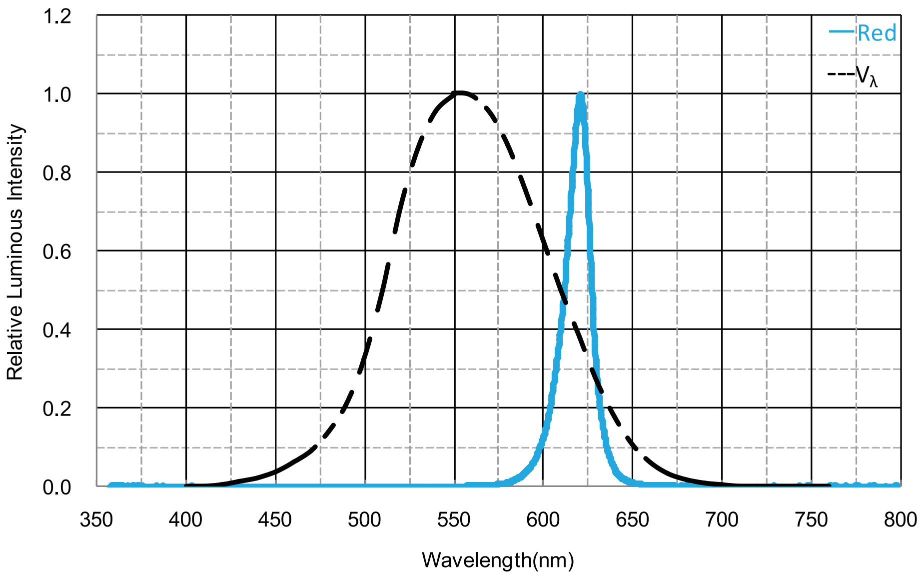
Characteristic Curves

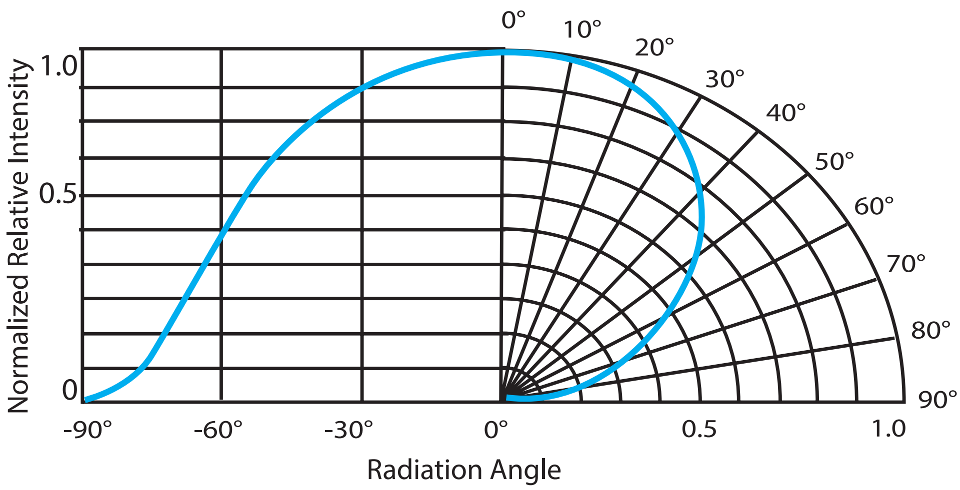
Color Spectrum

I_F =140 mA ; T_J = 25 °C



Beam Pattern

I_F =140 mA ; T_J = 25 °C



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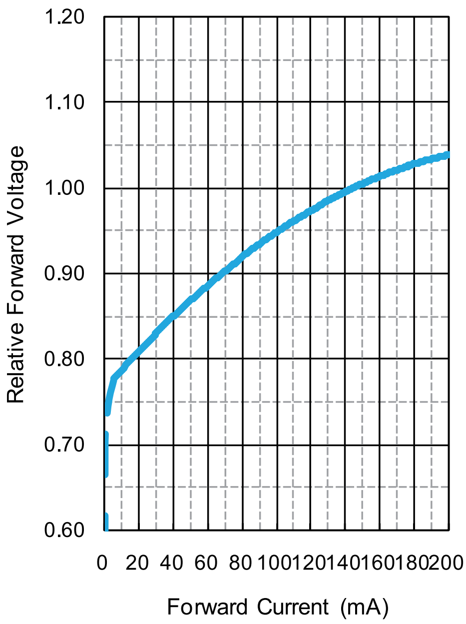
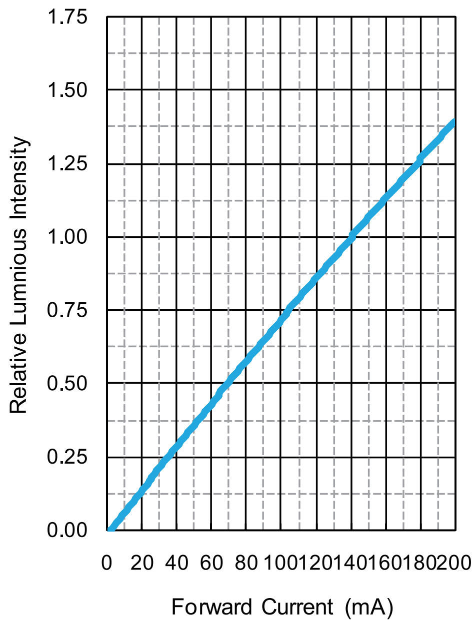
Relative Foward Voltage

$V_F/V_F(140\ mA) = f(I_F)$; $T_J = 25\ °C$



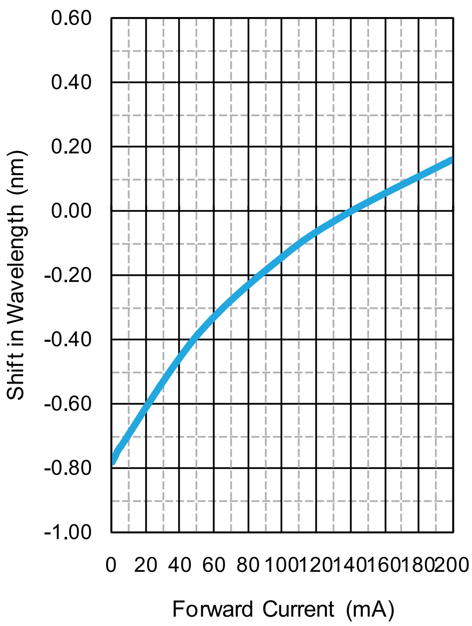
Relative Luminous Intensity

$I_V/I_V(140\ mA) = f(I_F)$; $T_J = 25\ °C$



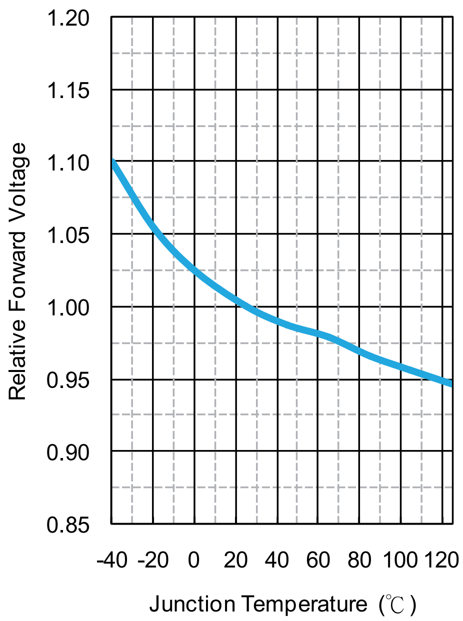
Shift in Dominant Wavelength

$\Delta\lambda_{dom} = \lambda_{dom} - \lambda_{dom}$ (140 mA); $T_J = 25\ °C$



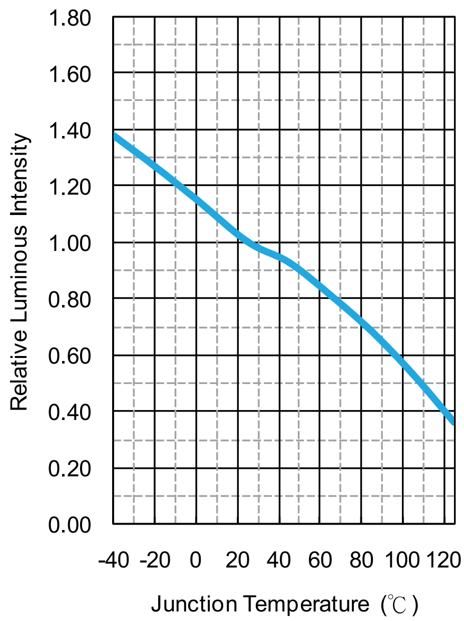
Relative Forward Voltage

$V_F/V_F(25\ °C) = f(T_J); I_F = 140\ mA$



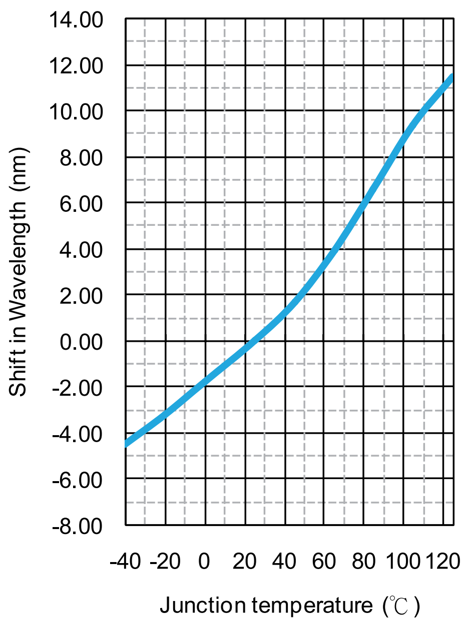
Relative Luminous Intensity

$I_V/I_V(25\ °C) = f(T_J); I_F = 140\ mA$



Shift in Dominant Wavelength

$\Delta\lambda_{dom} = \lambda_{dom} - \lambda_{dom}\ (25\ °C); I_F = 140\ mA$



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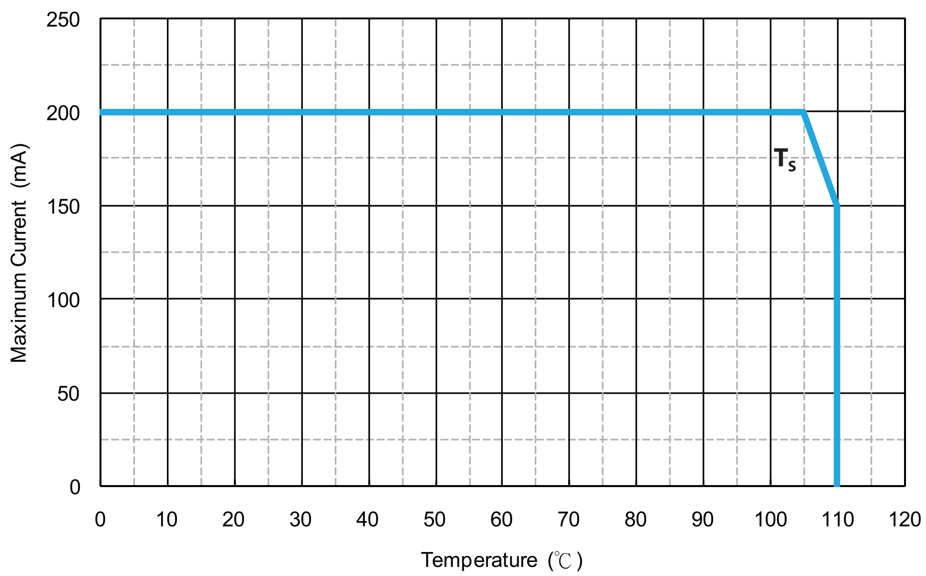
Max. Permissible Forward Current

$I_F = f(T)$



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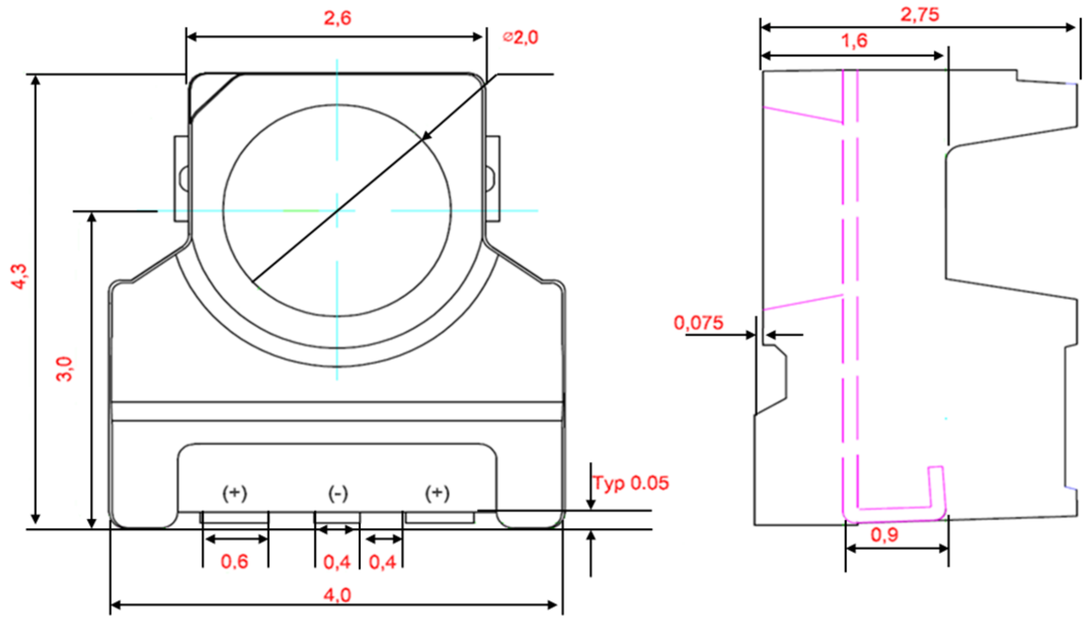
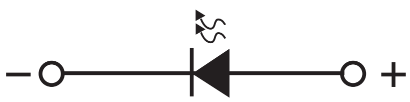
Mechanical Dimensions

Dimensional Drawing



Circuit

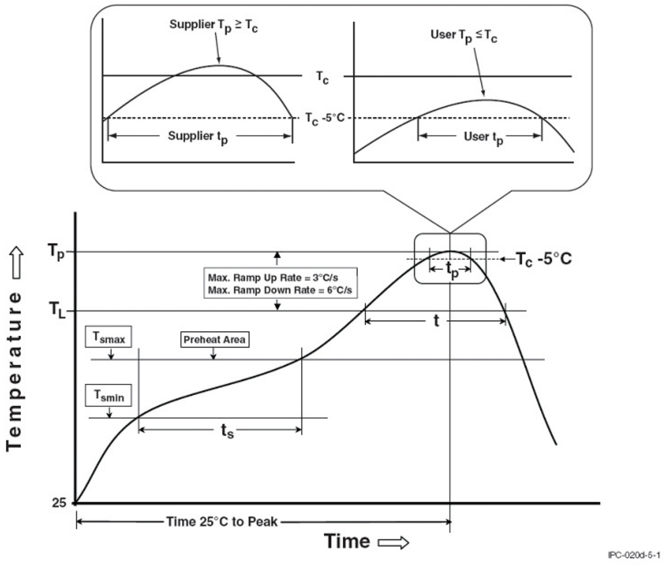


Notes:
1. All dimensions are measured in mm.
2. Tolerance : ± 0.1 mm
3. Approximate Weight : 47.0 mg

Lighting Design Manufacturing Service

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.

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.

Lighting Design Manufacturing Service

Revision History

Versions	Description	Release Date
0.1	Preliminary	2023/07/03

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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