No. 3, Gongye E. 3rd Road, Hsinchu Science Park, Hsinchu 30075, Taiwan
TEL：886-3-565-8800

Lextar

PC35G30 V0 Preliminary

Product Specification

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Approval Sheet

PC35G30 V0
Product Specification

Product	Green SMD LED
Part Number	PC35G30 V0
Issue Date	2018/06/12

Feature

- ✓ Green SMD LED (L x W x H) of 3.5 x 2.8 x 1.9 mm
- ✓ AEC-Q101 Rev. D and IEC 60810 qualification
- ✓ Dice Technology : GaN
- ✓ Qualified according to JEDEC moisture sensitivity Level 2
- ✓ Environmental friendly ; RoHS compliance
- ✓ ESD protection
- ✓ Packing : 2,000 or 1,000 pcs/reel

Applications

- ✓ Optical Indicator
- ✓ Automotive Interior lighting
- ✓ Backlighting
- ✓ Outdoor displays
- ✓ Signal and symbol Luminary
- ✓ Dash board lighting

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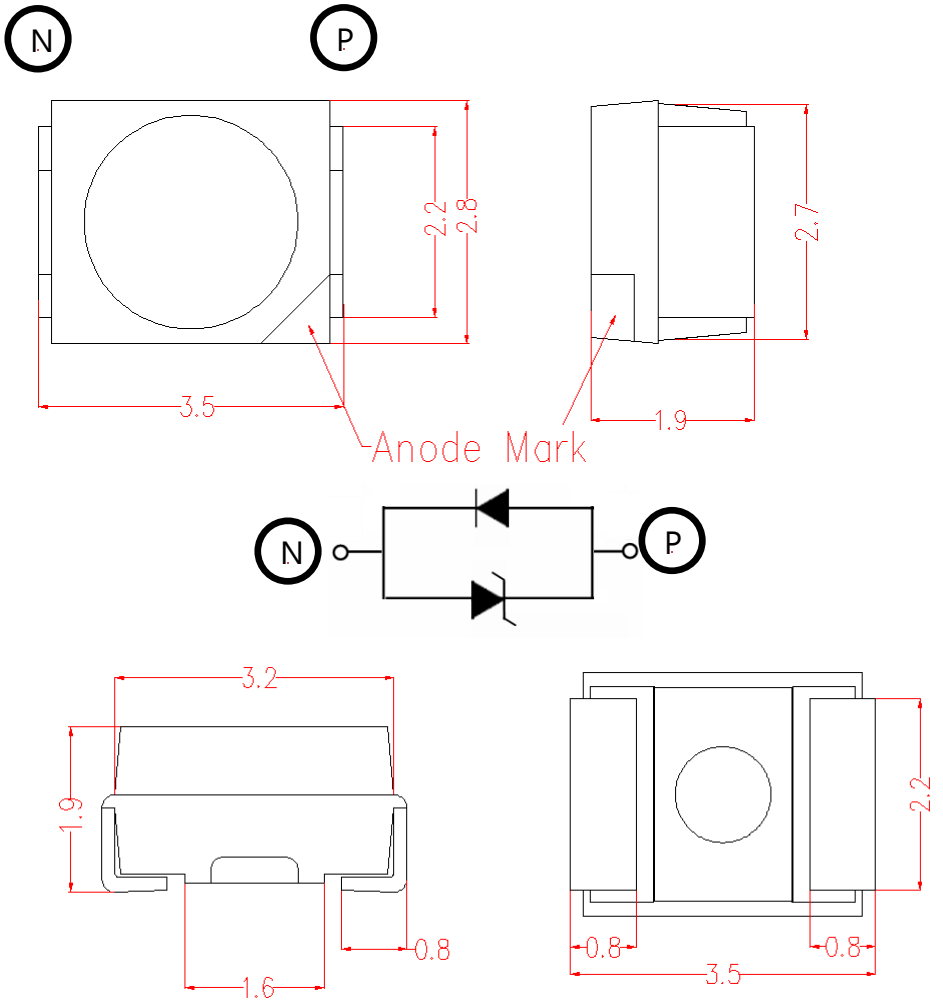
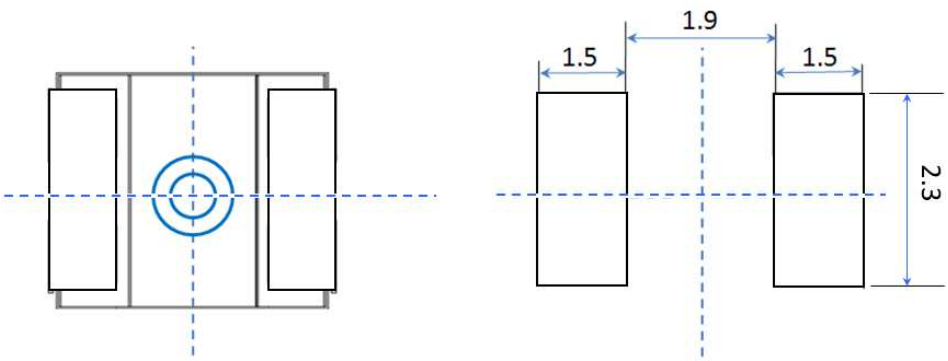
Package Dimension



Unit: mm, Tolerance: ±0.1mm

Recommended Soldering Pad



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Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 20 mA	2.4	3.0	3.4	V
Luminous Flux	Iv		1200	1650	2100	mcd
Dominant Wavelength	nm		524	530	536	nm
View Angle	θ			120		deg
Thermal Resistance	Rth			100		℃/W

* The Forward Voltage tolerance is ±0.05V
* The luminous intensity tolerance is ± 8%
* The Wavelength tolerance is ±0.5nm

Absolute Maximum Ratings

Parameter	Symbol	value	Unit
DC Forward Current(1)	I_F	30	mA
Power Dissipation	P_D	0.06	W
Pulse Forward Current(2)	IFP	50	mA
Storage Temperature	T_{stg}	-40 ~ +105	°C
Operating Temperature	T_{opr}	-40 ~ +105	°C
Junction Temperature	T_j	125	°C
ESD (HBM)	ESD_{HBM}	8000	V
Assembly Temperature	Tsld	260	°C

(1) Proper current rating must be observed to maintain junction temperature below maximum at all time

(2) IFP Condition: Duty 5/1000, Pulse within 10 us

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Bin code Definition

V_F Rank	Luminous Flux Rank	Wd Rank
C	V1	G2000

Forward Voltage Definition Group

V_F Rank	Condition	Min. (V)	Max. (V)
A	I_F = 20 mA Tj=25℃	2.80	3.00
B		3.00	3.20
C		3.20	3.40

Luminous Intensity Definition Group

Luminous Intensity Rank	Condition	Min. Iv (mcd)	Max. Iv (mcd)
V1	I_F = 20 mA Tj=25℃	1200	1500
V2		1500	1800
V3		1800	2100

Dominant Wavelength

Wd Rank	Condition	Min. Wd (nm)	Max. Wd (nm)
G1000	I_F = 20 mA Tj=25℃	524	527
G2000		527	530
G3000		530	533
G4000		533	536

* The Forward Voltage tolerance is ±0.05V

* The luminous intensity tolerance is ± 8%

* The Wavelength tolerance is ±0.5nm

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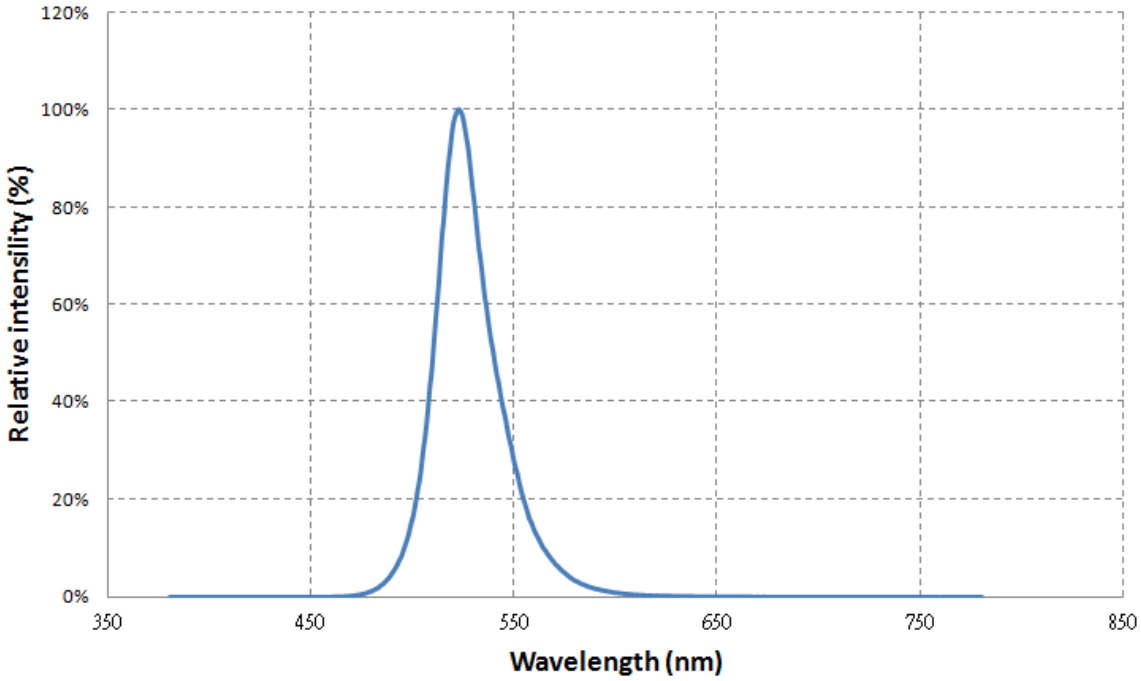
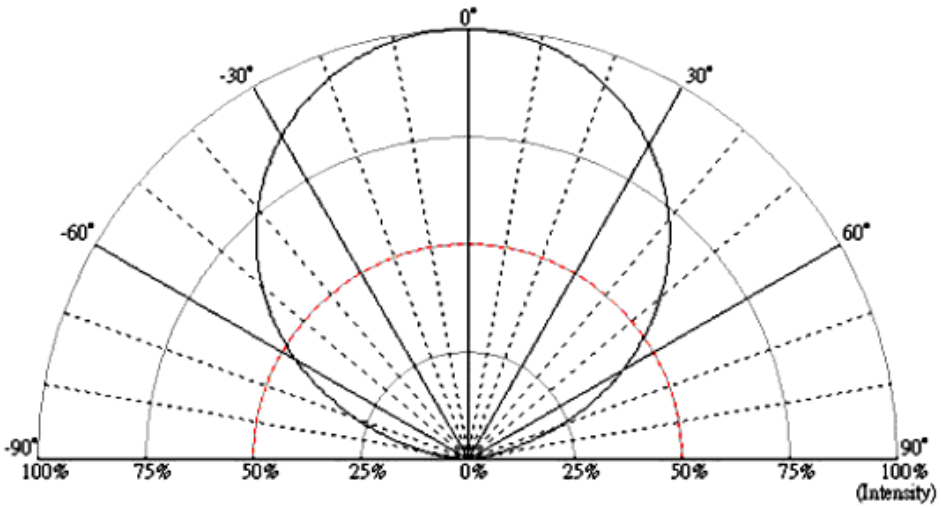
Spectrum



Radiation Pattern



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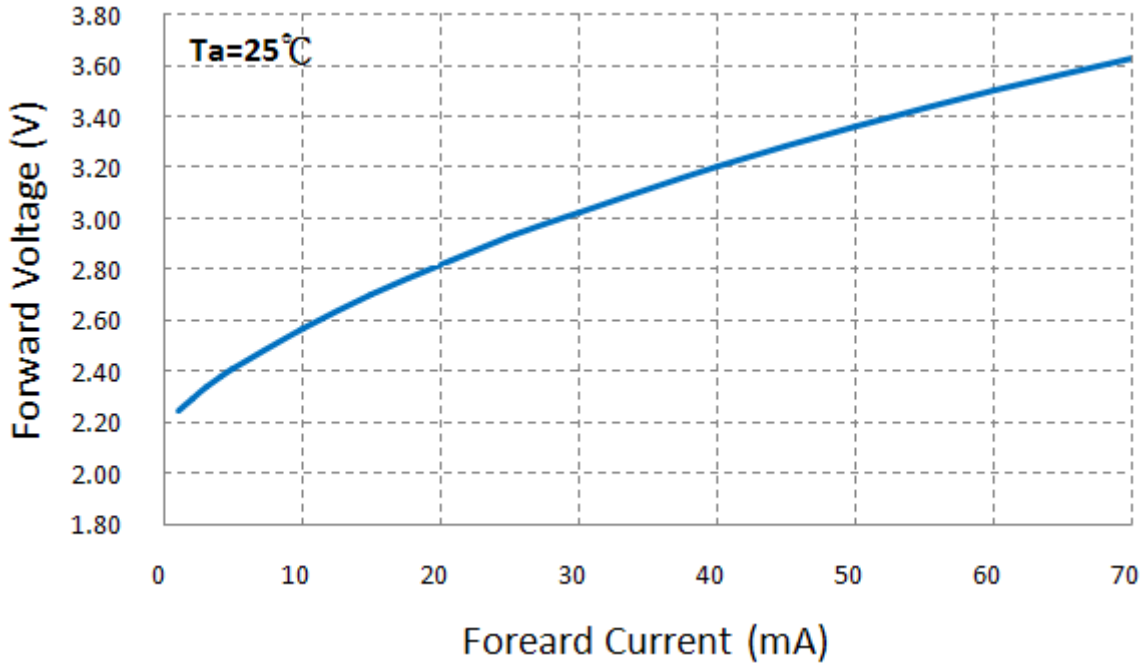
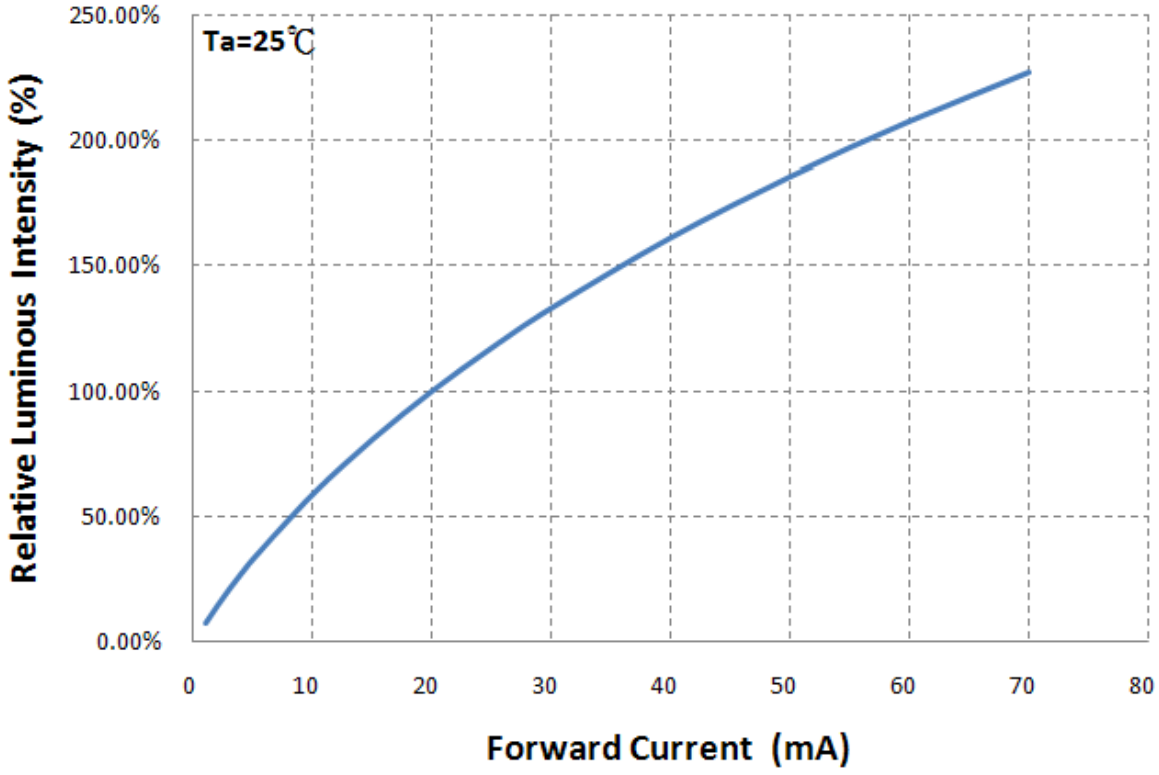
Forward Voltage vs. Forward Current, Ta=25℃



Forward Current vs. Relative Luminous Intensity, Ta=25℃



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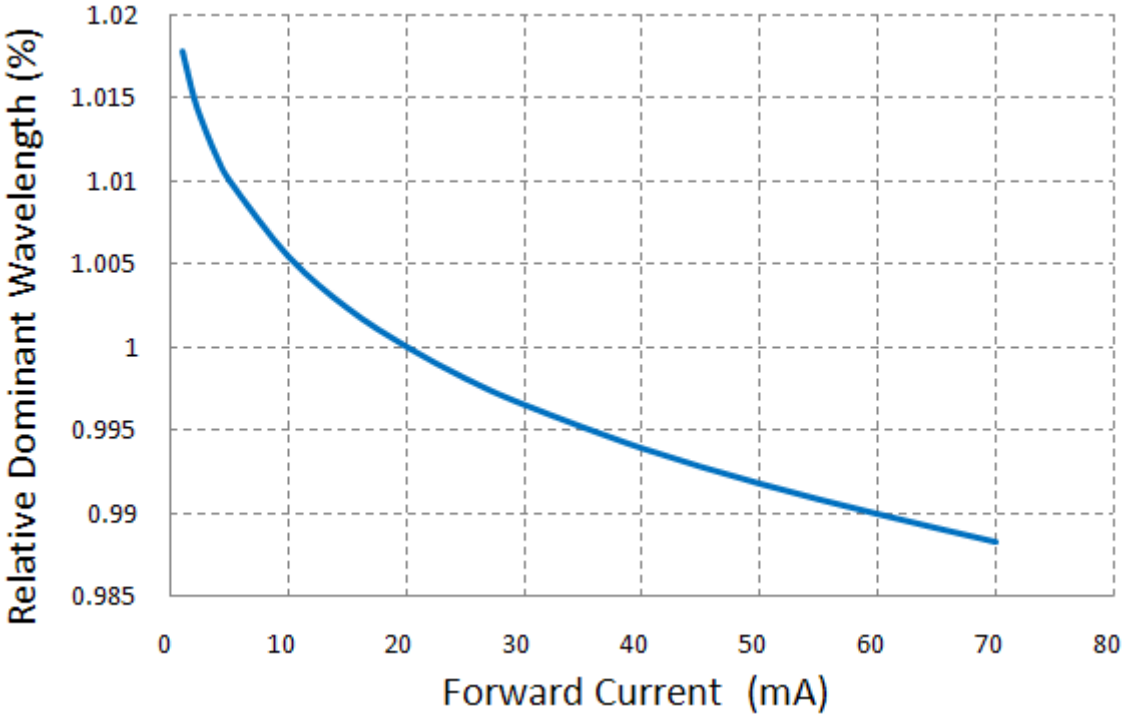
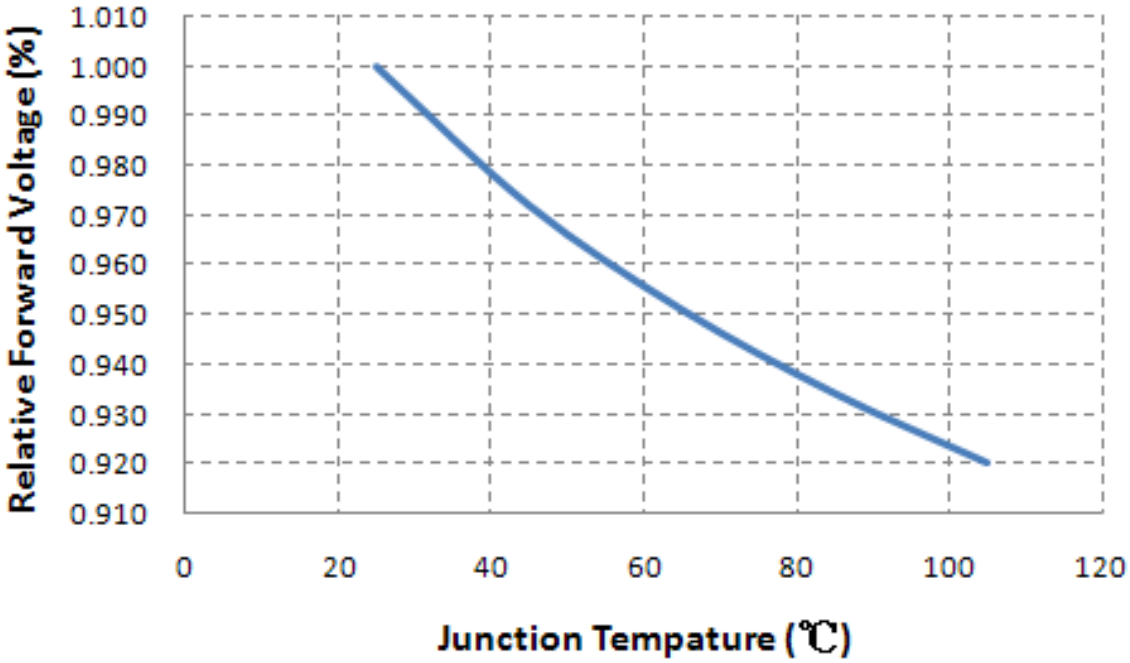
Forward Current vs. Relative Dominant Wavelength, Ta=25℃



Relative Forward Voltage vs. Ambient Temperature



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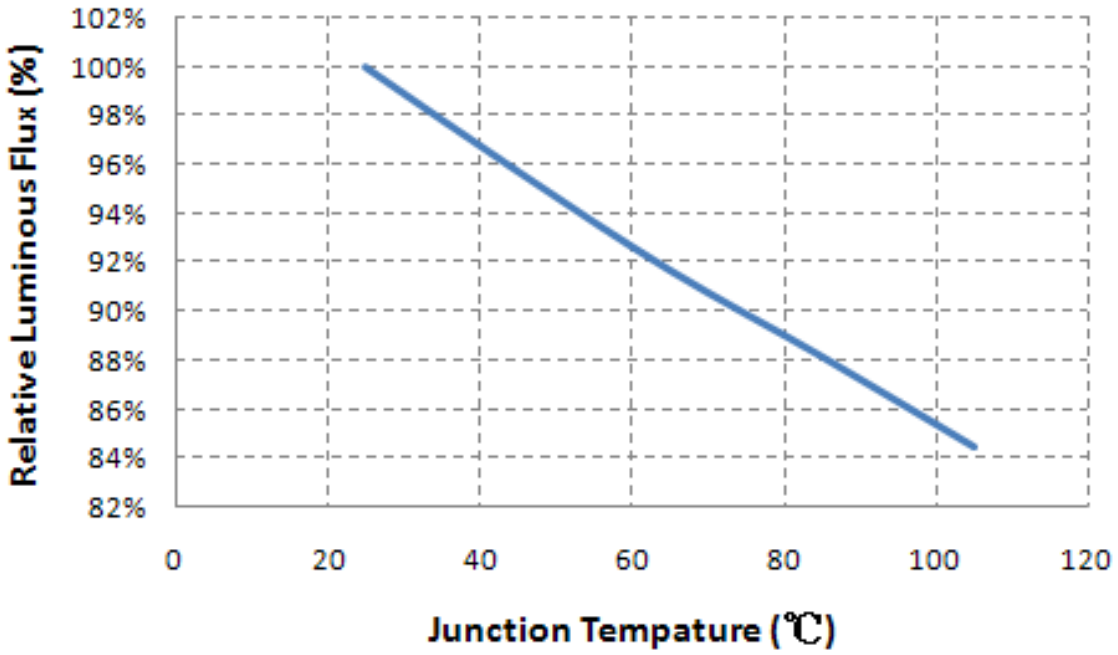
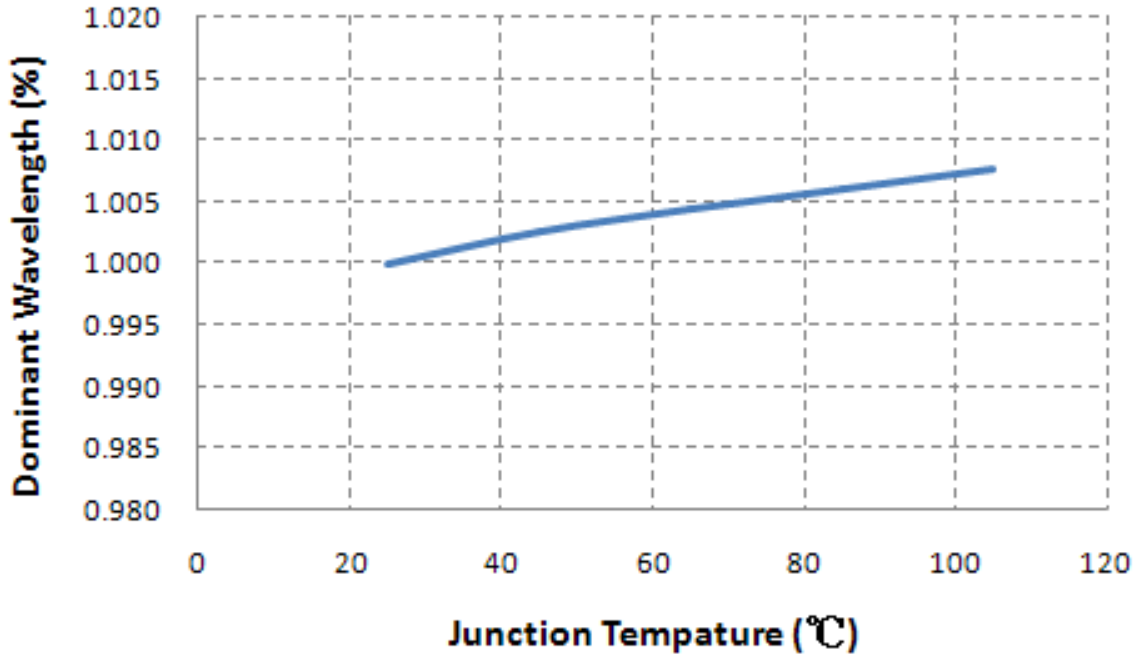
Relative Luminous Intensity vs. Ambient Temperature



Relative Dominant Wavelength vs. Ambient Temperature



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Reliability test

	Item	Reference Standard	Condition	Time/Cycle
1	Thermal shock	JESD22-A106	-40℃ to 100 ℃, 20 mins dwell, 5 min transfer time	1000 Cycles
2	Power and Temperature Cycle	AEC-Q101 Rev. D	-40 ℃~ 85 ℃, IF=30mA, Dwell/transfer time = 10 mins, 20 mins 1,000 cycles , on/off 15,000 cycles	15,000 cycles
3	MSL Level 2	J-STD-020	85℃ / 60% RH	168 hours
4	High Temperature Storage	JESD22-A103	TA=105℃, 1000h	1000 hours
5	Low Temperature Storage	JESD22-A119	TA=-40℃, 1000h	1000 hours
6	High Temperature Operating Life	AEC-Q101 Rev. D	TA=105℃, IF=30mA	1000 hours
7	Low Temperature Operating Life	JESD22-A108	TA=-40℃, IF=30mA	1000 hours
8	Temperature Humidity Operating Life	AEC-Q101 Rev. D	85℃, RH=85%, 1000h, IF=30mA	1000 hours
9	Electrostatic Discharges	AEC-Q101 Rev. D	HBM 8 KV, 1.5KΩ, 100pF, 3 pulses, alternately positive or negative	

Judgment Criteria

Item	Symbol	Test Condition	Judgment Criteria
Forward Voltage	Vf	20mA	ΔVf < 10 %
Luminous Flux	Iv	20mA	ΔIv < 20 %
Delta CIE	CIE-x ,CIE-y	20mA	△x,y <0.01

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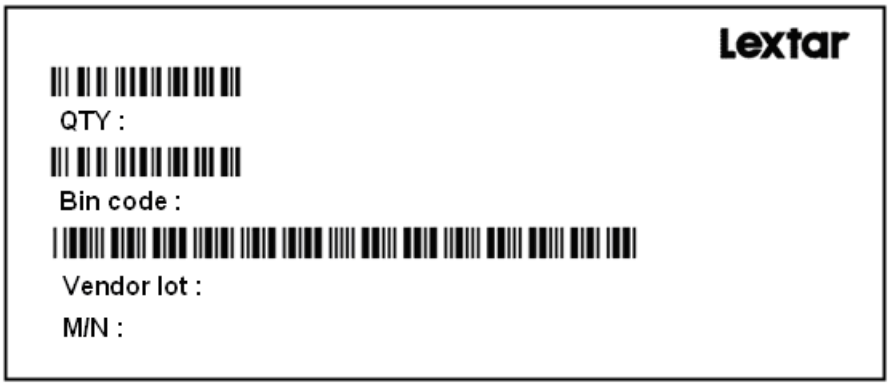
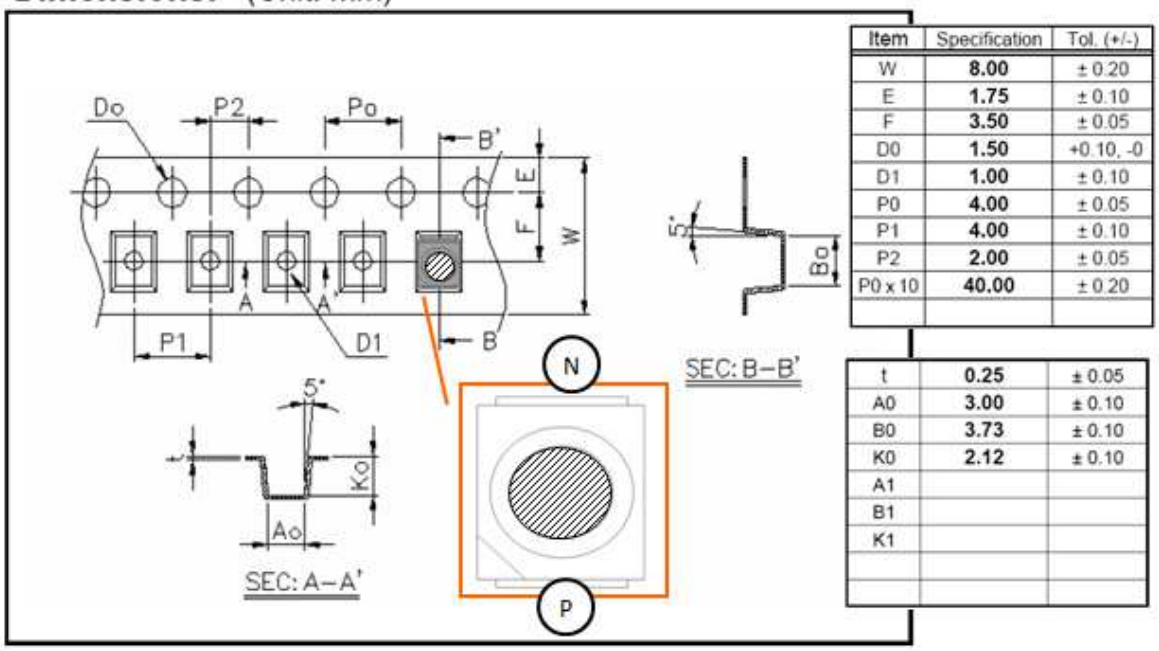
Label



Carrier Taping

Dimensions. (Unit: mm)



Item	Specification	Tol. (+/-)
W	8.00	± 0.20
E	1.75	± 0.10
F	3.50	± 0.05
D0	1.50	+0.10, -0
D1	1.00	± 0.10
P0	4.00	± 0.05
P1	4.00	± 0.10
P2	2.00	± 0.05
P0 x 10	40.00	± 0.20

t	0.25	± 0.05
A0	3.00	± 0.10
B0	3.73	± 0.10
K0	2.12	± 0.10
A1		
B1		
K1		

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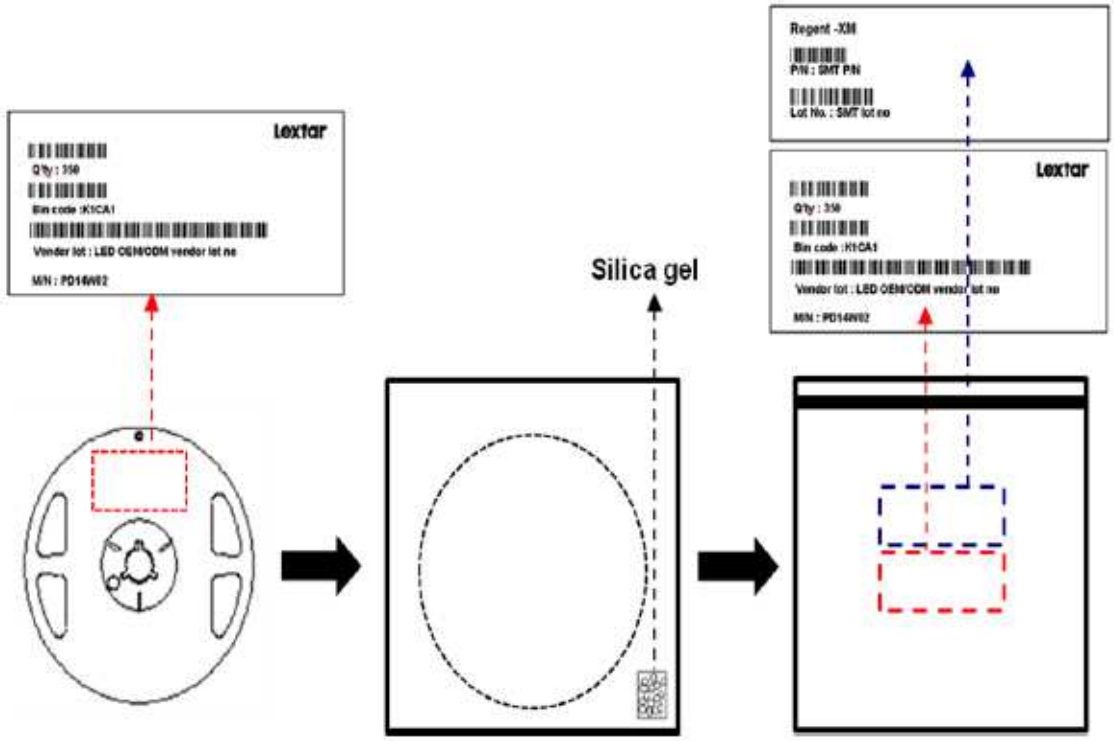
Shield Bag Taping



Packing Box

Type	Large Box		Medium Box		Small Box	
Dimension	541X511X276mm		385X303X260mm		283X235x70mm	
Maximum Reels	7"X12mm Reel	64/R	7"X12mm Reel	21/R	7"X12mm Reel	4/R
Minimum Reels	7"X12mm Reel	32/R	7"X12mm Reel	9/R	7"X12mm Reel	1/R

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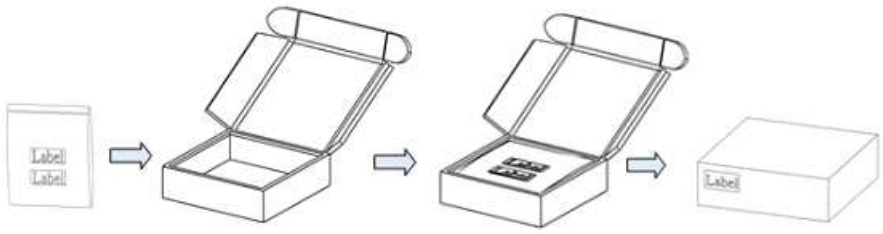
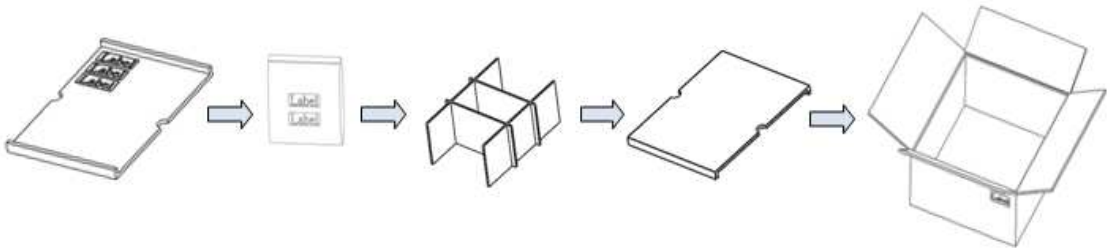
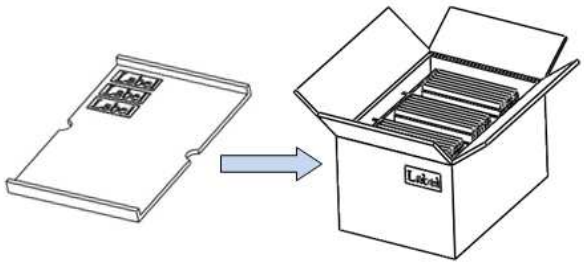
Small Box

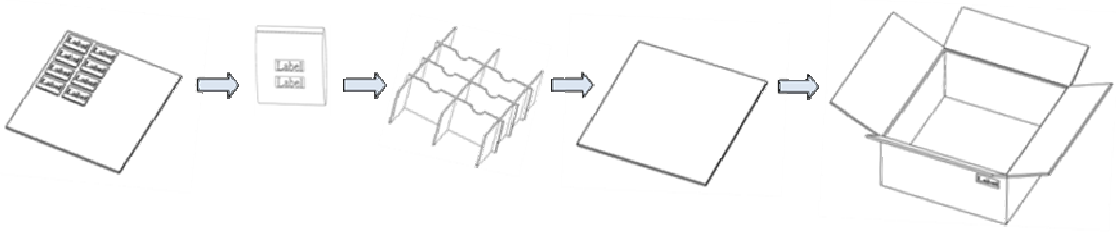


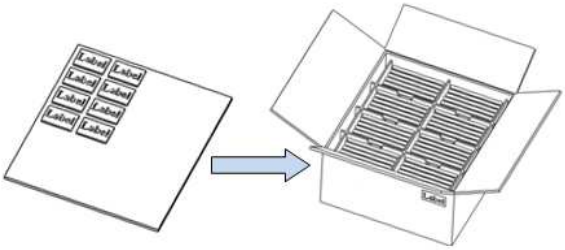
Medium Box





Large Box





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Safety Precautions

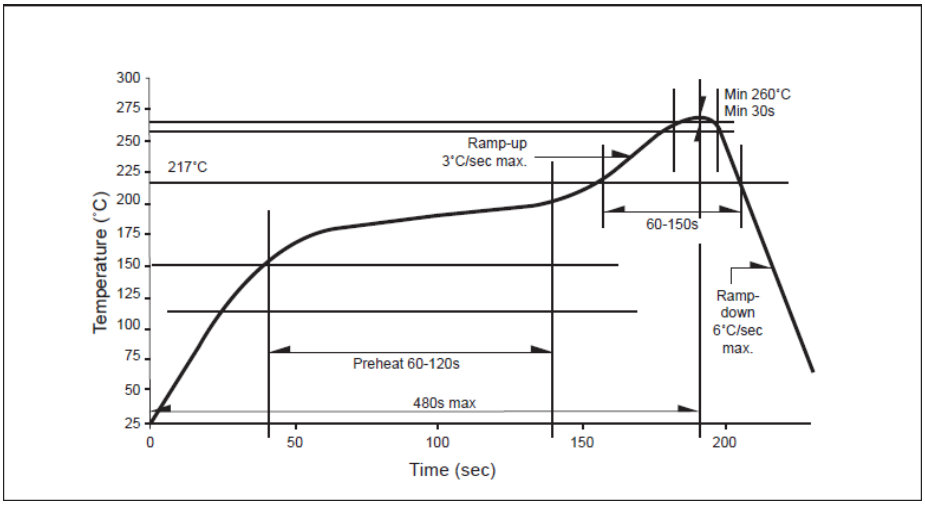
- The LED light output is too strong for human eyes without shield. Prevent eye contact directly more than seconds.
- Ensure operating under maximum rating.

Storage

- Before opening the package, the LEDs should be kept at 40°C, 90% RH environment or less , and should be used within one year.
- After opening the package bag,
  The LEDs should be kept at 30°C, 60% RH environment or less.
  The LEDs should be soldered within 12 months (1 year).
  If unused LEDs remain, they should be stored in moisture proof packages, such as sealed containers with packages of moisture absorbent material (silica gel).
- If the package is over storage time, the LEDs should be pre-bake 65 ± 5 °C / 12 hrs before use. (One time only).

Soldering Notice and Conditions

- When soldering LEDs,
- Do not solder/reflow the same LED over two times.
- Reflow temperature profile as below: (lead-free solder)



Classification Reflow Profile (JEDEC J-STD-020D)

- When soldering, don't put stress on the LEDs
- After LEDs have been soldered, strongly recommend not to repair to keep the LEDs performance.

Static Electricity

- LED package is extremely sensitive to static electricity. It's recommended that anti-electrostatic glove and wrist band is necessary when handling the LEDs. All devices are also be grounded properly as well.
- Protection devices design should be considered in the LED driving circuit.

Cleaning

- If washing is required, recommend to use alcohol as a solvent.
- Recommend to avoid cleaning the LEDs by ultrasonic. If necessary, pre-test the LED is necessary to confirm whether any damage occur after the process.

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Revision History

Date	Contents	Writer	Approved
2017.07.04	NEW VERSION	Rudess	Bemore
2017.08.07	1. Update Reliability test – P.10 2. Soldering Notice and Conditions – P.14	Rudess	Bemore
2018.03.11	Update Outline Dimension – P.4	Rudess	Bemore
2018.05.28	Update Carrier Taping – P.11	Rudess	Bemore
2018.06.12	Update binning – P.5	Rudess	Bemore

Smart Lighting
Amazing Life

Lextar Electronics Corp. is the leading LED (Light Emitting Diode)
maker integrating upper stream epitaxial, middle stream chip, and downstream package,
SMT and LED lighting applications. Founded in May, 2008, Lextar is a subsidiary of AU Optronics,
the leading TFT-LCD and solar PV manufacturer. Lextar's product applications include lighting and LCD backlight.
Lextar's manufacturing sites include Hsinchu and Chunan in Taiwan, and Suzhou in China.
The company turnover in 2010 is 266 million USD.