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

PF06N03 V0 Preliminary

Product Specification

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

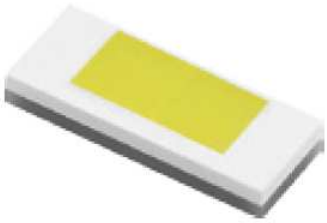
Lextar

Approval Sheet

PF06N03 V0
Product Specification

RoHS

Product	2052 White LED
Part Number	PF06N03
Issue Date	2017/9/26



Feature

- ✓ White SMD LED (L x W x H) of 2.0 x 5.2 x 0.75 mm
- ✓ Dice Technology : InGaN
- ✓ Qualified according to JEDEC moisture sensitivity Level 1
- ✓ Environmental friendly ; RoHS compliance
- ✓ Packing : 100/500/1000 pcs/reel

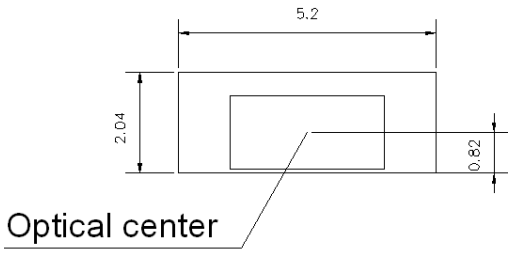
Applications

- ✓ DRL
- ✓ Fog light
- ✓ Head lamp

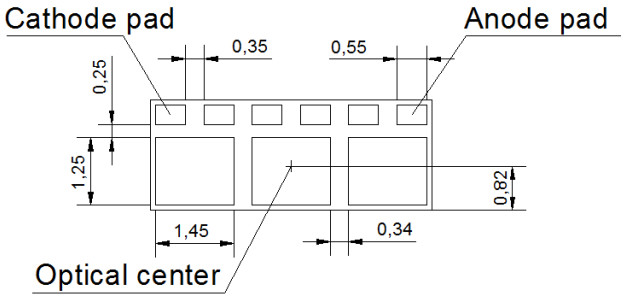
No. 3, Gongye E. 3rd Road, Hsinchu Science Park, Hsinchu 30075, Taiwan
TEL：886-3-565-8800

PKG Size:

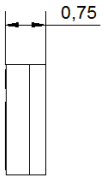
2.0 mm *5.2 mm *0.75mm (H)



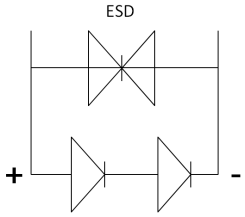
Top view



Bottom view

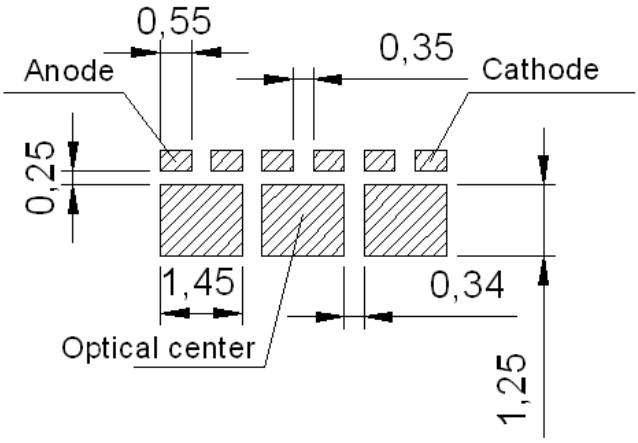


Side view



Equivalent Circuit

Recommend Soldering Pad Layout



Unit: mm, Tolerance: ±0.10mm

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

Electro-Optical Characteristics (Ta=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage(1)	V_F	I_F = 1200 mA	6.0	6.4	6.9	V
Luminous Flux	ΦV		750	800	1000	Lm
View Angle	θ		110	120	130	deg
Electrical Thermal Resistance	$R_{th, elec}$		--	2.3	--	°C/W

(1) The Forward Voltage tolerance is ±0.05V

(2) The luminous flux tolerance is ±8%

(3) Thermal resistance is calculated from junction to solder

(4) Electric and optical data is tested at 50 ms pulse condition

(5) The color coordinates measurement tolerance is ±0.005

Absolute Maximum Ratings

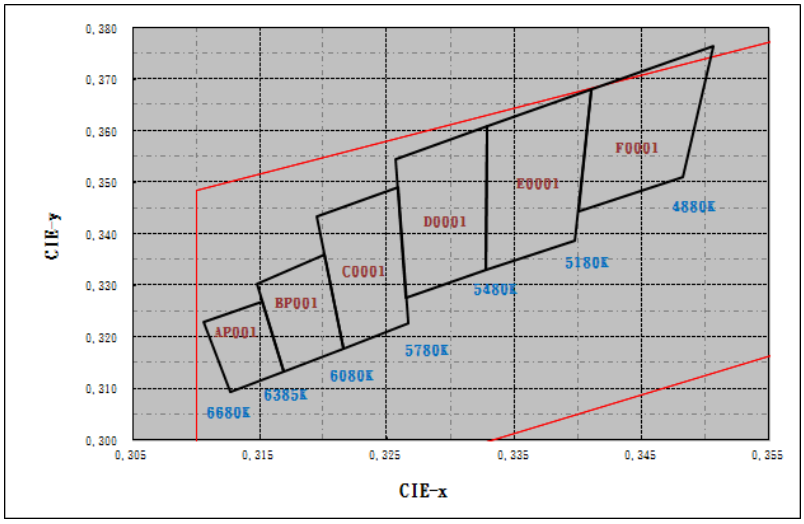
Parameter	Symbol	value	Unit
DC Forward Current(1)	I_F	1500	mA
Power Dissipation	P_D	9.6	W
Pulse Forward Current (2)	I_{FP}	2000	mA
Storage Temperature	T_{stg}	-40 ~ +125	°C
Operating Temperature	T_{opr}	-40 ~ +125	°C
Junction Temperature	T_J	150	°C
Assembly Temperature	Tsld	260 (max. 30sec)	°C

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

(2) IFP shall be applied under condition as max duration time 400ms and 1/10 duty cycle.

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

Chromaticity Coordinates



Bin code definition

V_F Rank	Luminous Flux Rank	CIE Rank
A	U3	BP001

V_F Rank	Condition	Min.	Max.
A	I_F = 1200 mA Ta=25℃	6.0	6.3
B		6.3	6.6
C		6.6	6.9

Luminous Flux Rank	Condition	Min.	Max.
U2	I_F =1200mA Ta=25℃	750	800
U3		800	900
U4		900	1000

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

CIE Rank

CCT	CIE Rank	CIE X	CIE Y
6385 ~ 6680	AP001	0.3106	0.323
		0.3152	0.3269
		0.3169	0.3133
		0.3127	0.3093
6080 ~ 6385	BP001	0.3148	0.3303
		0.3201	0.336
		0.3216	0.3178
		0.3169	0.3133
5780 ~ 6080	C0001	0.3195	0.3433
		0.3259	0.3491
		0.3267	0.3228
		0.3216	0.3178
5480 ~ 5780	D0001	0.3257	0.3546
		0.3328	0.3608
		0.3327	0.3331
		0.3265	0.3276
5180 ~ 5480	E0001	0.3328	0.3608
		0.3410	0.3681
		0.3397	0.3387
		0.3327	0.3331
4880 ~ 5180	F0001	0.3410	0.3681
		0.3506	0.3765
		0.3482	0.3510
		0.3400	0.3443

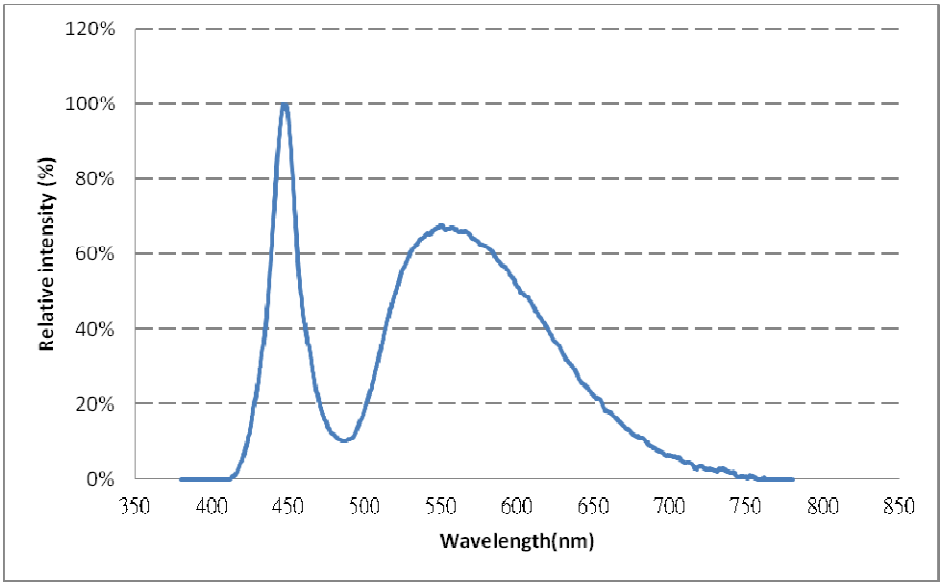
(1) Color bins are tested at IF = 1200mA 50ms pulse operation condition

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

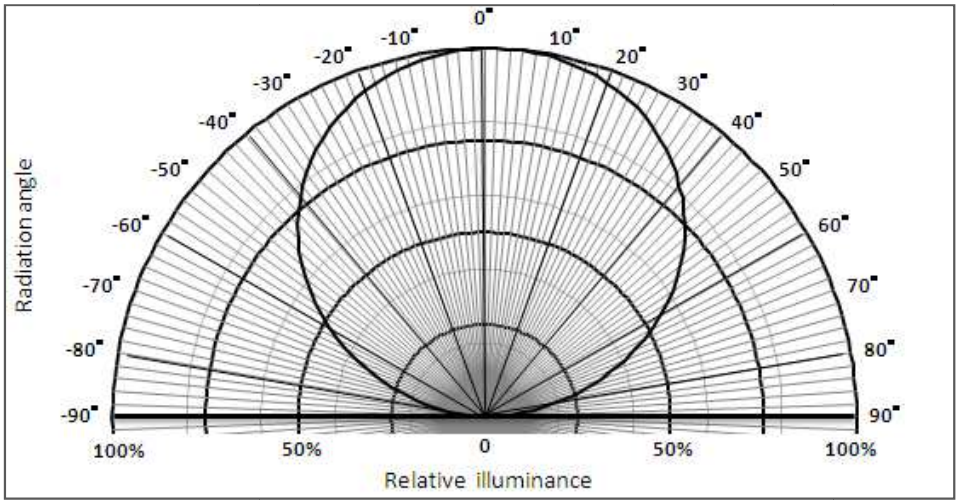
Lextar

ation

Spectrum

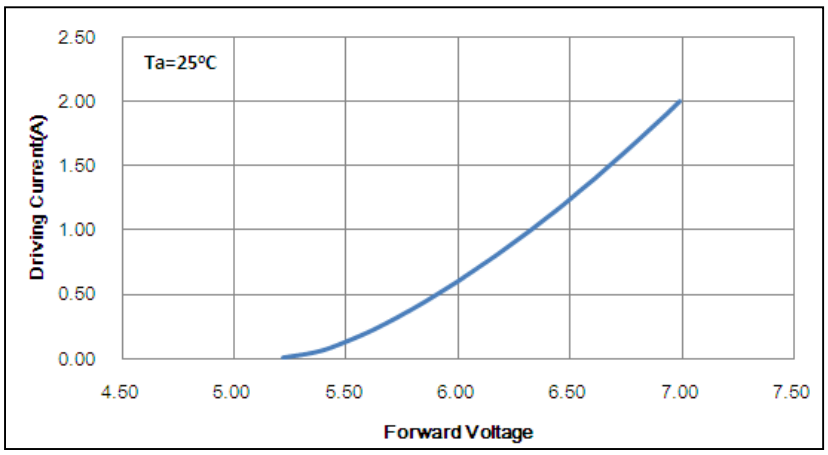


Radiation Pattern

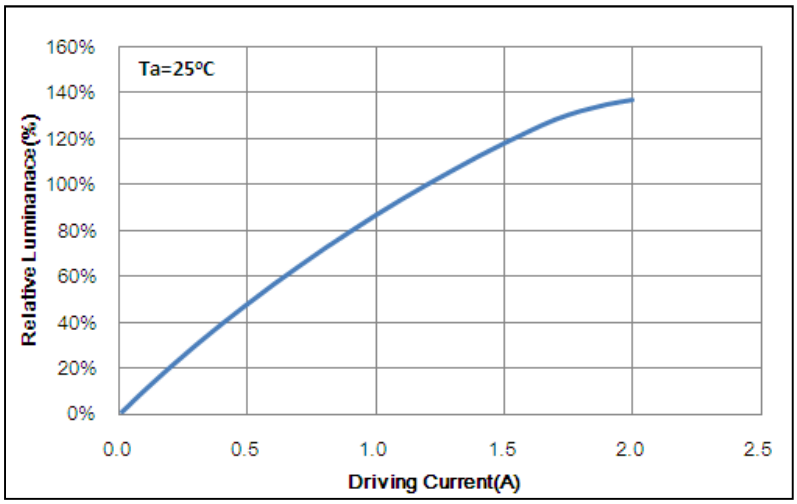


No. 3, Gongye E. 3rd Road, Hsinchu Science Park, Hsinchu 30075, Taiwan
TEL：886-3-565-8800

Forward Voltage vs. Forward Current

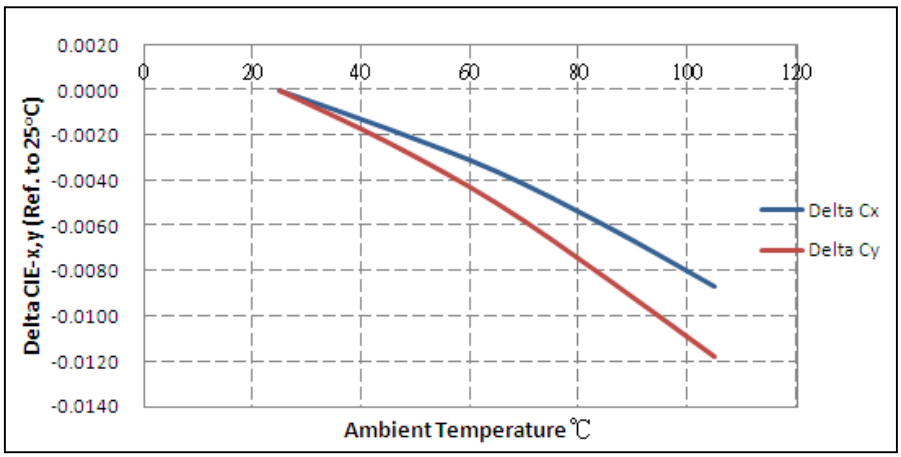


Forward Current vs. Relative Luminosity

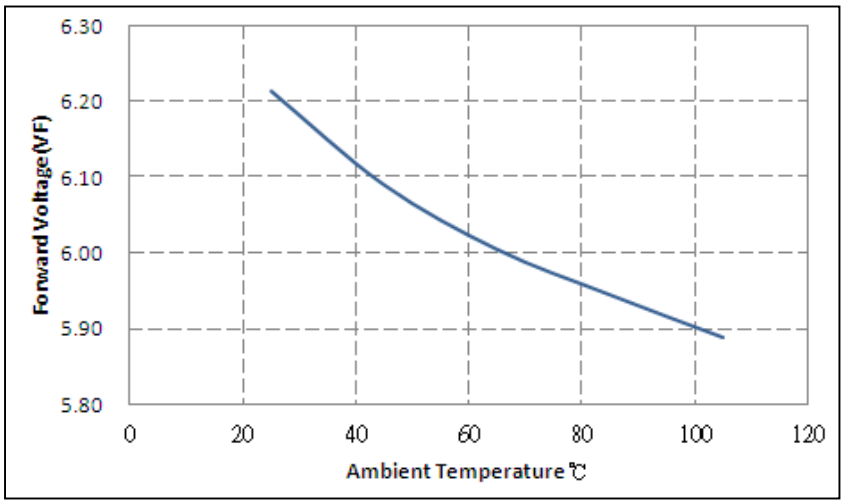


No. 3, Gongye E. 3rd Road, Hsinchu Science Park, Hsinchu 30075, Taiwan
TEL：886-3-565-8800

Chromaticity Coordinate vs. Ambient Temperature

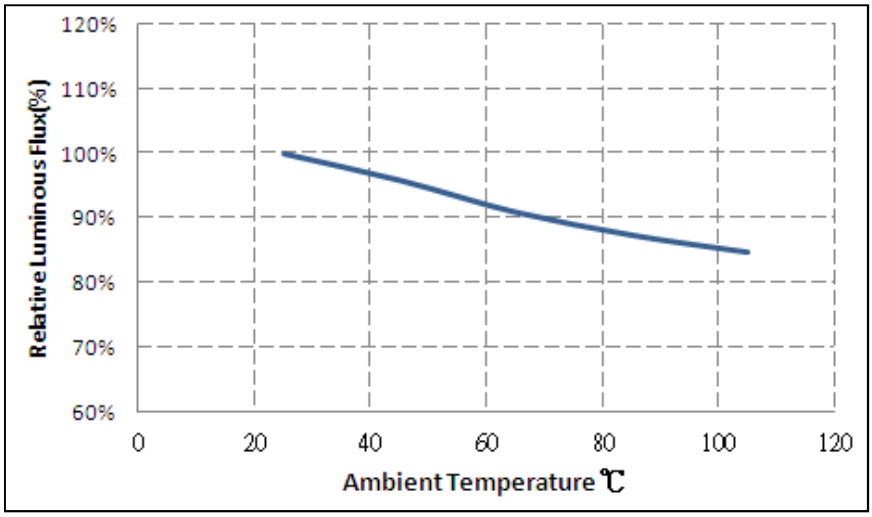


Relative Forward Voltage vs. Ambient Temperature

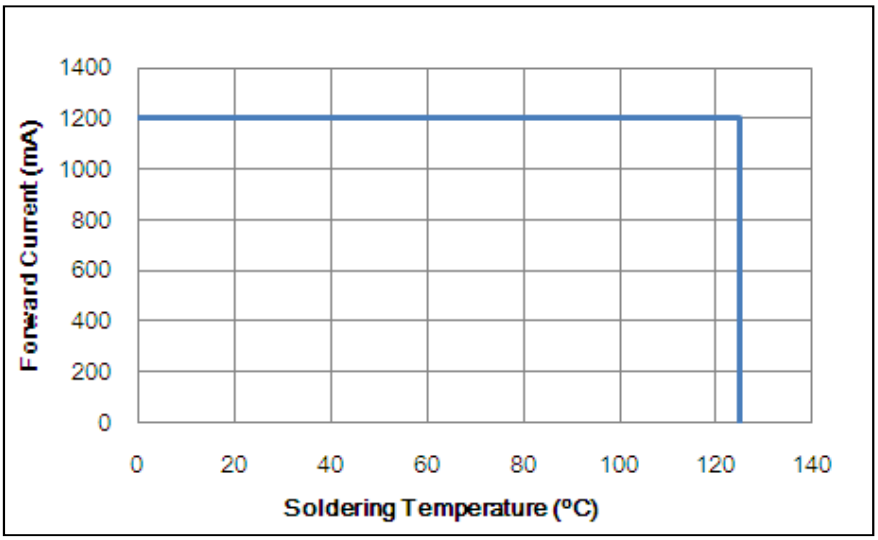


No. 3, Gongye E. 3rd Road, Hsinchu Science Park, Hsinchu 30075, Taiwan
TEL：886-3-565-8800

Relative Luminous Intensity vs. Ambient Temperature



Forward Current Derating Curve



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

Reliability test

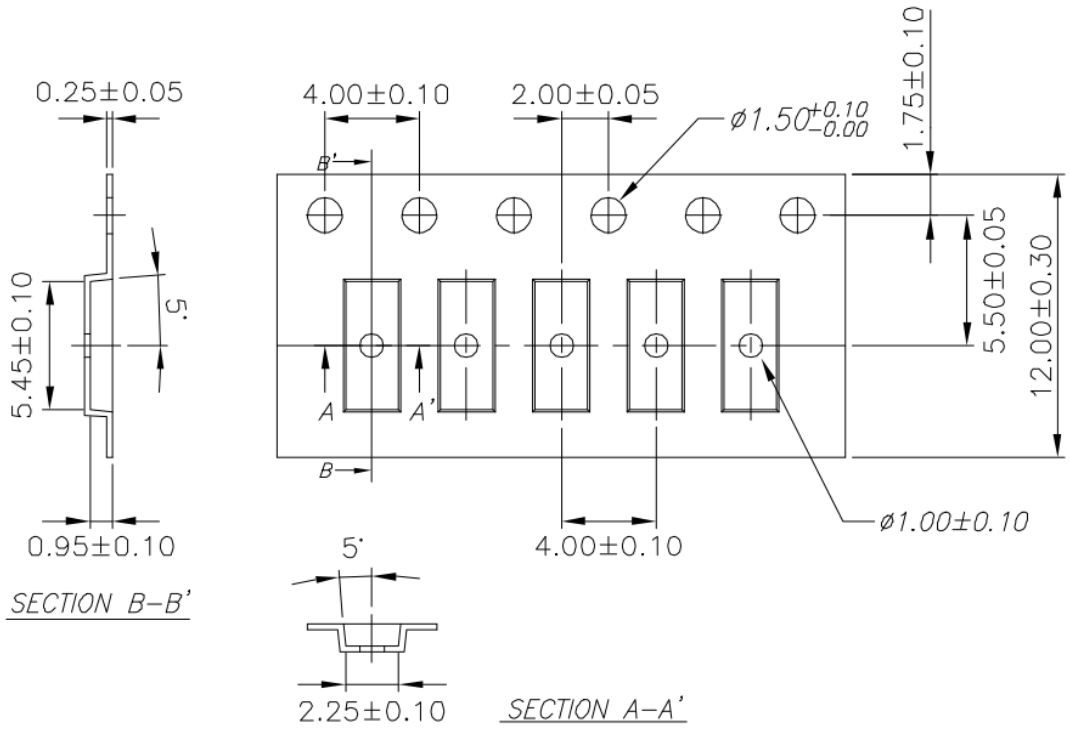
Item	Condition	Current	Time/Cycle
High Temperature Operation Life Test	Ts=100°C	1200mA	1000 Hrs
Low Temperature Operation Life Test	Ta=-40°C	1200mA	1000 Hrs
High Temperature and High Humidity Operation Life Test	Ts=85°C , 85%RH	1200mA	1000 Hrs
High Temperature Storage	Ta=100°C	NA	1000 Hrs
Low Temperature Storage	Ta=-40°C	NA	1000 Hrs
High Temperature High Humidity Storage	Ta=85°C , 85%RH	NA	1000 Hrs
Thermal shock	-40℃/20minr ~5minr ~ 125℃/20min	NA	100 Cycles

Judgment Criteria

Item	Symbol	Test Condition	Judgment Criteria
Forward Voltage	Vf	1200 mA	ΔVf< 10 %
Luminous Flux	Iv	1200 mA	ΔIv< 20 %

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

Emitter Pocket Tape Packing

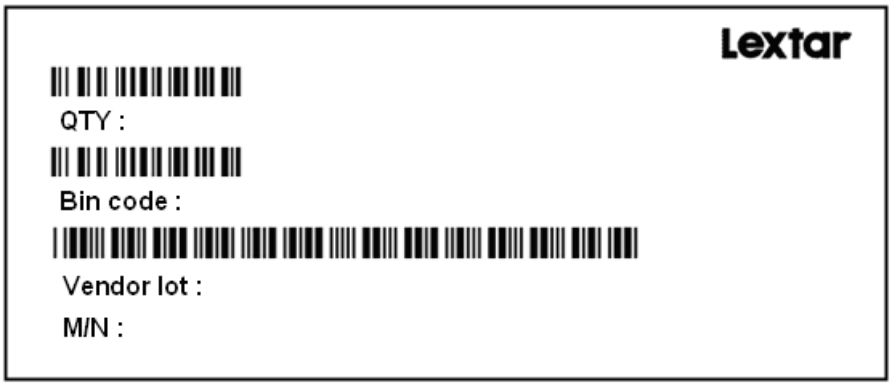


Unit : mm

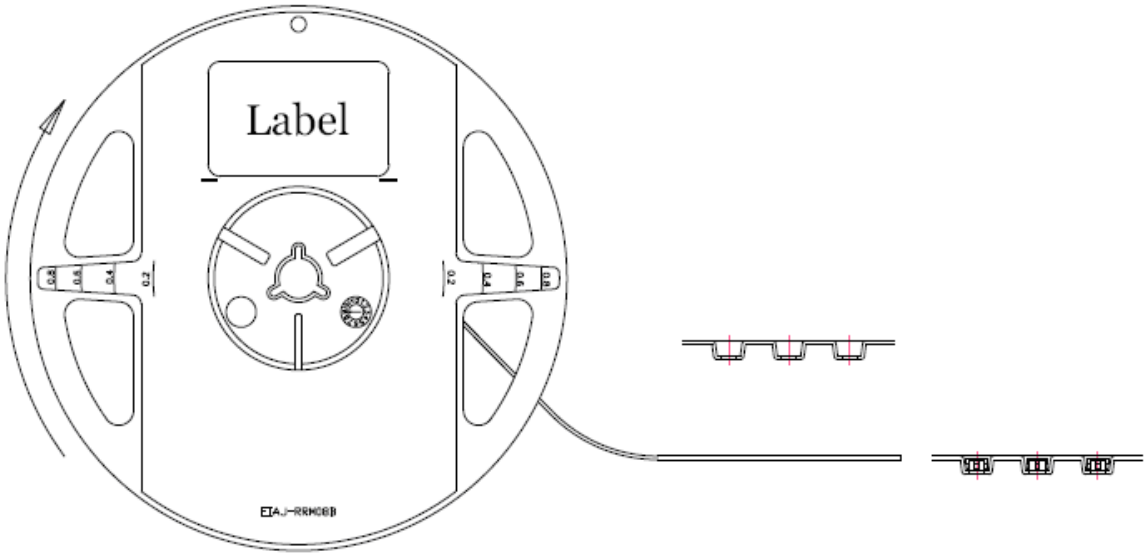
Item	Spec	Tol(+/-)	Item	Spec	Tol(+/-)
W	12.00	±0.30	P2	2.00	±0.05
E	1.75	±0.10	P0 x 10	40.00	±0.10
F	5.50	±0.05	T	0.25	±0.05
D0	1.50	±0.1	A0	2.25	±0.10
D1	1.50	±0.25	B0	5.45	±0.10
P0 P1	4.00	±0.10	K0	0.95	±0.10

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

Label



Carrier Taping

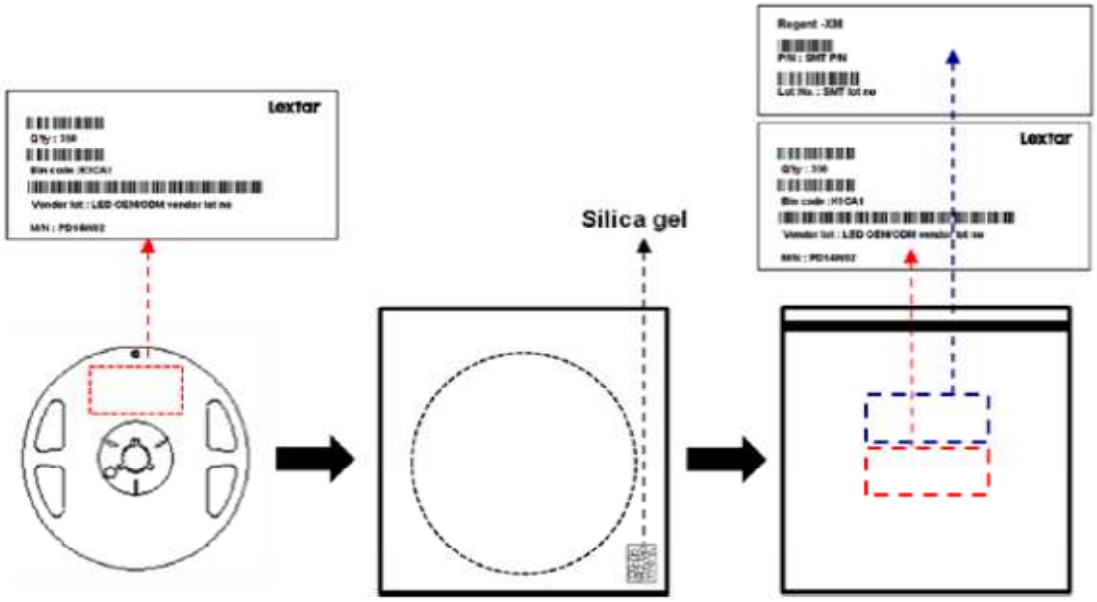


Notice:

1. 10 Sprocket hole pitch cumulative tolerance is ±0.20mm.
2. Carrier camber shall be not more than 1mm per 100mm through a length of 250mm.
3. Ao & Bo measured on a place in the middle of the corner radii.
4. Ko measured from a place on the inside bottom of the pocket to top surface of carrier.
5. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.
6. Surface resisivity 10^4 ~10^8 ohm/sq.

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

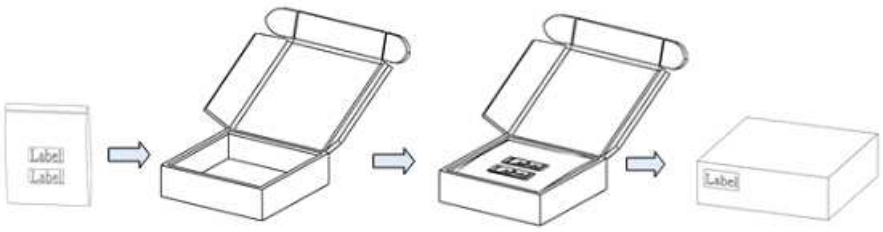
Shield Bag Taping



Packing Box

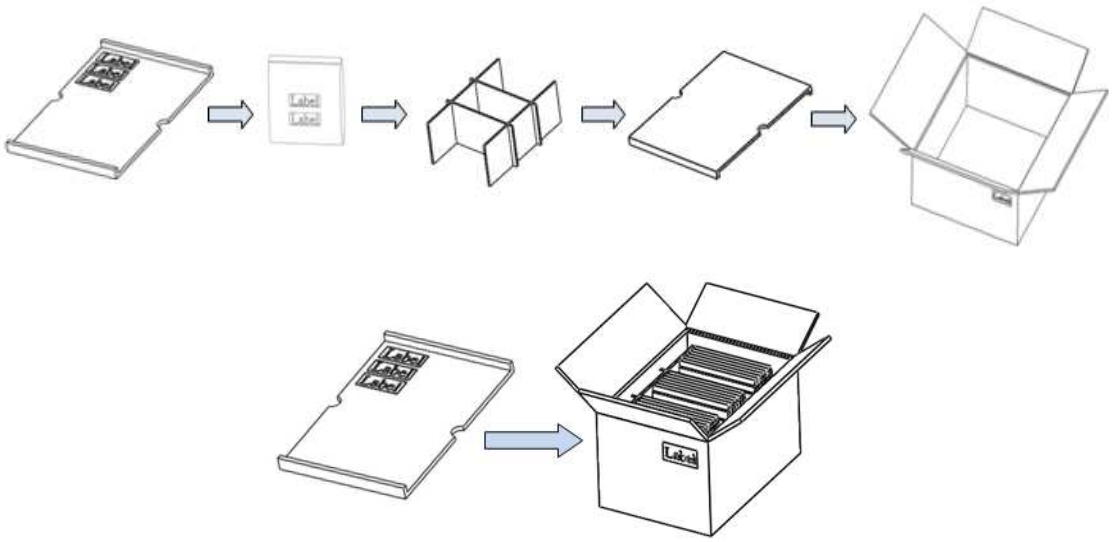
Type	Large Box		Medium Box		Small Box	
Dimension	541X511X276mm		385X303X260mm		283X235x70mm	
Maximum Reels	7"X12mm Reel	64/R	7"X12mm Reel	21/R	7"X12mm Reel	4/R
Minimum Reels	7"X12mm Reel	32/R	7"X12mm Reel	9/R	7"X12mm Reel	1/R

Small Box

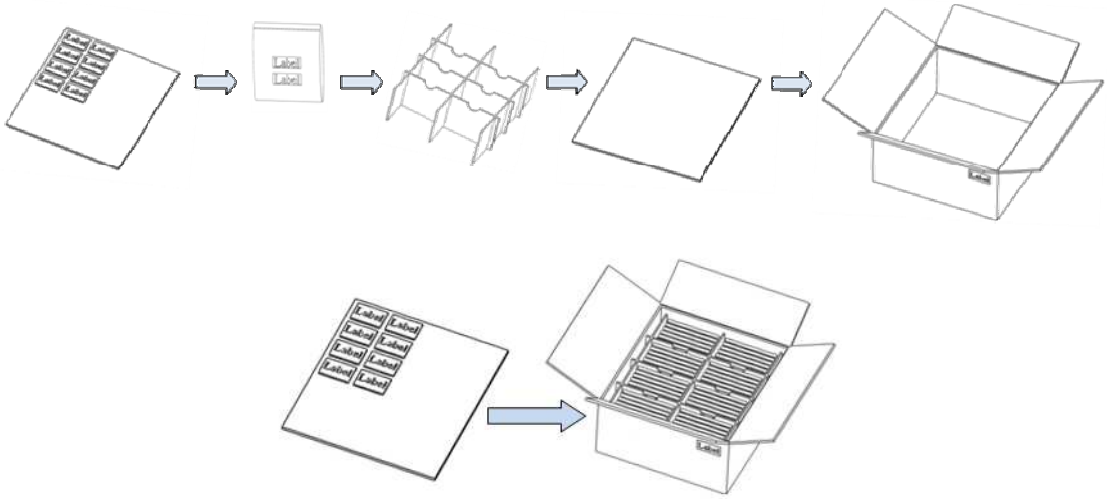


No. 3, Gongye E. 3rd Road, Hsinchu Science Park, Hsinchu 30075, Taiwan
TEL：886-3-565-8800

Medium Box



Large Box



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

Safety Precautions

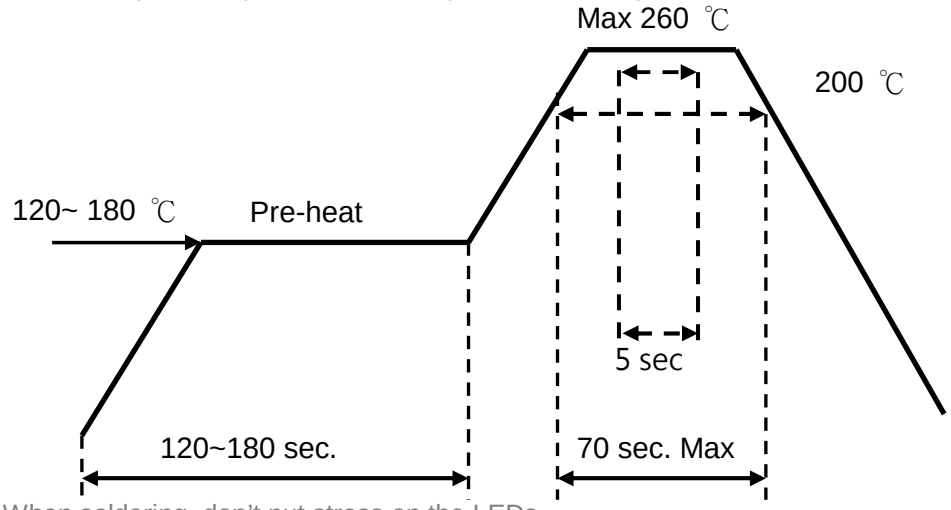
- The LED light output is too strong for human eyes without shield. Prevent eye contact directly more than seconds.
- Ensure operating under maximum rating.

Storage

- Before opening the package, the LEDs should storage under 30℃, 60% RH.
- After opening the package bag, the LEDs should be keep under 30℃, 60% RH. Recommend to use within 168 hrs. If unused LEDs remain, suggest to store into moisture proof bag or original package bag with moisture absorbent material such as silica gel. Reseal well is necessary.
- If the product exceeded the storage period or the moisture absorbent material faded away, baking treatment should be done by following conditions.
  Bake condition: 60℃, 12hours (One time only).

Soldering Notice and Conditions

- When soldering LEDs, do not solder/reflow the same LED over two times.
- Recommend soldering conditions:
  Hand soldering: 350 ℃ max , 3 sec. max.
  Reflow soldering: Pre-heat 150 ℃ max , 180 sec. max.
  Peak 260 ℃ max , 5 sec. max.
- Reflow temperature profile as below: (lead-free solder)



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

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

Revision History

Date	Contents	Writer	Approved
2017.04.07	Preliminary version	Jackyie Huang	SK Chen
2017.07.17	Renew word description	Jackyie Huang	SK Chen
2017.09.18	Revise flux min bin	Sean Tsai	SK Chen
2017.09.26	Page5: Revise flux bin code definition	SK Chen	Sean Tsai

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.