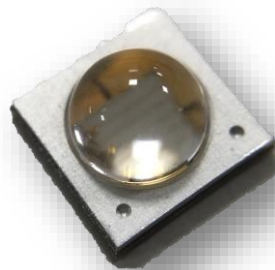


6868 UVA Datasheet

Part Number : 68XXXXXX10X000



Feature

- ◆ Super High power LED
- ◆ Customize 3 types circuit design:
- ◆ ALN substrate with anti-UV glasses Lens
- ◆ Customize peak wavelength from 365~210nm
- ◆ Compatible backside metal pad design
- ◆ Beam Angle 60/120D
- ◆ Storage Condition MSL4

■ Type1. Single Chip Maximum Rating (Ta : 25°C)

Characteristics	Symbol	Min.	Typical	Max.	Unit
DC Forward Current ¹	I _F			1,000	mA
Pulse Forward Current ²	I _{PF}			1,200	mA
Forward Voltage	V _F	3.0	3.6	4.4	V
Reverse Voltage	V _R		-5		V
Leakage Current (5V)	UV			10	μA
Junction Temperature ³	T _j		85		°C
Storage Temperature Range	T _{stg}	-40	–	100	°C
Soldering Temperature	T _{sol}		260		°C
Thermal Resistance Junction / Solder Point	R _{th}		5.7		°C/W
Viewing Angle	2θ _{1/2}		60/120		Deg
Electrostatic Discharge (HBM)	ESD		8		KV
Operating Temperature Range	Topr	-40°C		+80°C	°C

■ Type2. 2S2P Circuit Design Maximum Rating (Ta : 25°C)

Characteristics	Symbol	Min.	Typical	Max.	Unit
DC Forward Current ¹	I _F		1,000	1,400	mA
Pulse Forward Current ²	I _{PF}			2,000	mA
Forward Voltage	V _F	6.0	7.2	8.4	V
Reverse Voltage	V _R		-10		V
Leakage Current (5V)	UV			10	μA
Junction Temperature ³	T _j		85		°C
Storage Temperature Range	T _{stg}	-40	–	100	°C
Soldering Temperature	T _{sol}		260		°C
Thermal Resistance Junction / Solder Point	R _{th}		2.0		°C/W
Viewing Angle	2θ _{1/2}		60/120		Deg
Electrostatic Discharge (HBM)	ESD		8		KV
Operating Temperature Range	Topr	-40°C		+80°C	°C



6868 UVA Datasheet

■ Type3. 4S Circuit Design Maximum Rating (Ta : 25°C)

Characteristics	Symbol	Min.	Typical	Max.	Unit
DC Forward Current ¹	I _F		500	1,000	mA
Pulse Forward Current ²	I _{PF}			1,200	mA
Forward Voltage	V _F	12.0	14.0	16.8	V
Reverse Voltage	V _R		-20		V
Leakage Current (5V)	UV			10	μA
Junction Temperature ³	T _j		85		°C
Storage Temperature Range	T _{stg}	-40	–	100	°C
Soldering Temperature	T _{sol}		260		°C
Thermal Resistance Junction / Solder Point	R _{th}		2.0		°C/W
Viewing Angle	2θ _{1/2}		60/120		Deg
Electrostatic Discharge (HBM)	ESD		8		KV
Operating Temperature Range	T _{opr}	-40°C		+80°C	°C

Notes:

1. For other ambient, limited setting of current will depend on de-rating curves.
2. D=0.01s duty 1/10.
3. When drive on maximum current , T_j must be kept below 85°C.
4. Viewing angle (2θ_{1/2}) ± 10°.



6868 UVA Datasheet

■ Type.1 Single Chip Product Spec

Radiometric Power (mW) @1000mA			Peak Wavelength (nm@1000mA)	Forward Voltage (V@1000mA)		Part Number
Group	Min	Max		Min	Max	
P11	1100	1200	365-370	3.6	4.4	6868C36510K000 6868F36510K000
P12	1200	1300				
P13	1300	1400				
P14	1400	1500				
P16	1600	1700	380-390	3.2	4.2	6868C38510K000 6868F38510K000
P17	1700	1800				
P18	1800	1900				
P19	1900	2000				
P16	1600	1700	390-400	3.2	4.2	6868C39510K000 6868F39510K000
P17	1700	1800				
P18	1800	1900				
P19	1900	2000				
P16	1600	1700	400-410	3.2	4.2	6868C40510K000 6868F40510K000
P17	1700	1800				
P18	1800	1900				
P19	1900	2000				
P16	1600	1700	410-420	3.2	4.2	6868C41510K000 6868F41510K000
P17	1700	1800				
P18	1800	1900				
P19	1900	2000				

Notes :

1. Tolerance of Forward voltage (V_F) $\pm 0.2V$
2. Tolerance of Radiometric Power (P_o) $\pm 10\%$
3. Tolerance of Wavelength $\pm 2nm$



6868 UVA Datasheet

■ Type.2 Circuit 2S2P Product Spec

Radiometric Power (mW) @1,400mA			Peak Wavelength (nm@1,400mA)	Forward Voltage (V@1,400mA)		Part Number
Bin code	Min	Max		Min	Max	
P35	3,000	3,500	365-370	6.0	8.4	68SPC36510H000 68SPF36510H000
P40	3,500	4,000				
P45	4,000	4,500				
P50	4,500	5,000				
P50	4,500	5,000	380-390	6.0	8.4	68SPC38510H000 68SPF38510H000
P55	5,000	5,500				
P60	5,500	6,000				
P65	6,000	6,500				
P50	4,500	5,000	390-400	6.0	8.4	68SPC39510H000 68SPF39510H000
P55	5,000	5,500				
P60	5,500	6,000				
P65	6,000	6,500				
P50	4,500	5,000	400-410	6.0	8.4	68SPC40510H000 68SPF40510H000
P55	5,000	5,500				
P60	5,500	6,000				
P65	6,000	6,500				
P50	4,500	5,000	410-420	6.0	8.4	68SPC41510H000 68SPF41510H000
P55	5,000	5,500				
P60	5,500	6,000				
P65	6,000	6,500				

Notes :

1. Tolerance of Forward voltage (VF) $\pm 0.5V$
2. Tolerance of Radiometric Power (Po) $\pm 10\%$
3. Tolerance of Wavelength $\pm 2nm$



6868 UVA Datasheet

■ Type.3 4S Circuit Product Spec

Radiometric Power (mW) @700mA			Peak Wavelength (nm@700mA)	Forward Voltage (V@700mA)		Part Number
Bin code	Min	Max		Min	Max	
P35	3,000	3,500	365-370	12.8	16.8	684SC36510F000 684SF36510F000
P40	3,500	4,000				
P45	4,000	4,500				
P50	4,500	5,000				
P50	4,500	5,000	380-390	12.0	16.8	684SC38510F000 684SF38510F000
P55	5,000	5,500				
P60	5,500	6,000				
P65	6,000	6,500				
P50	4,500	5,000	390-400	12.0	16.8	684SC39510F000 684SF39510F000
P55	5,000	5,500				
P60	5,500	6,000				
P65	6,000	6,500				
P50	4,500	5,000	400-410	12.0	16.8	684SC40510F000 684SF40510F000
P55	5,000	5,500				
P60	5,500	6,000				
P65	6,000	6,500				
P50	4,500	5,000	410-420	12.0	16.8	684SC41510F000 684SF41510F000
P55	5,000	5,500				
P60	5,500	6,000				
P65	6,000	6,500				

Notes :

1. Tolerance of Forward voltage (VF) $\pm 0.8V$
2. Tolerance of Radiometric Power (Po) $\pm 10\%$
3. Tolerance of Wavelength $\pm 2nm$



6868 UVA Datasheet

■ Type1. Forward Voltage Binning

Item	Forward Foltage @1000mA			Peak Wavelength (nm@1000mA)	Forward Voltage (V@1000mA)	
	Bin	Min	Max		Min	Max
Voltage	A0	3.0	3.4	365-420	3.0	4.2
	A1	3.4	3.8			
	A2	3.8	4.2			

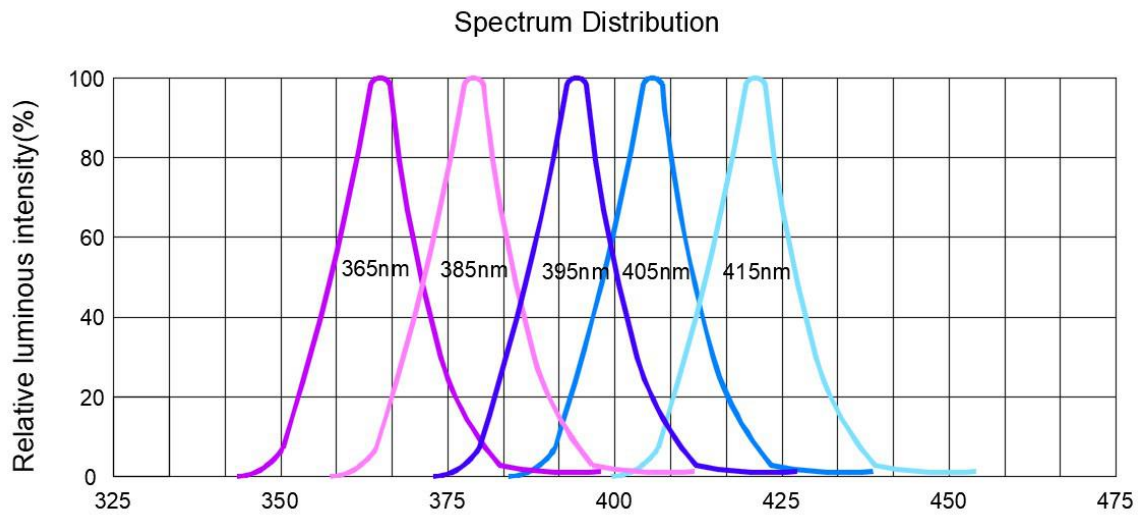
■ Type2. 2S2P Voltage Binning

Item	Forward Foltage @1,400mA			Peak Wavelength (nm@1,400mA)	Forward Voltage (V@1,400mA)	
	Bin	Min	Max		Min	Max
Voltage	B0	6.0	6.8	365-420	6.0	8.4
	B1	6.8	7.6			
	B2	7.6	8.4			

■ Type3. 4S Voltage Binning

Item	Forward Foltage @700mA			Peak Wavelength (nm@700mA)	Forward Voltage (V@700mA)	
	Bin	Min	Max		Min	Max
Voltage	C0	12.0	12.8	365-420	12.8	16.8
	C1	12.8	13.6			
	C2	13.6	14.4			
	C3	14.4	15.2			
	C4	15.2	16.0			
	C5	16.0	16.8			

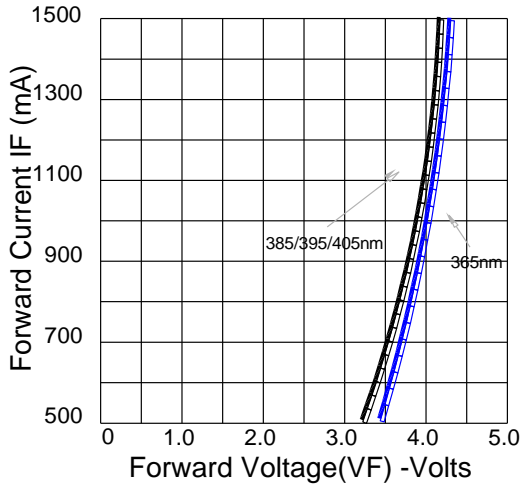
■ Relative spectral power distribution



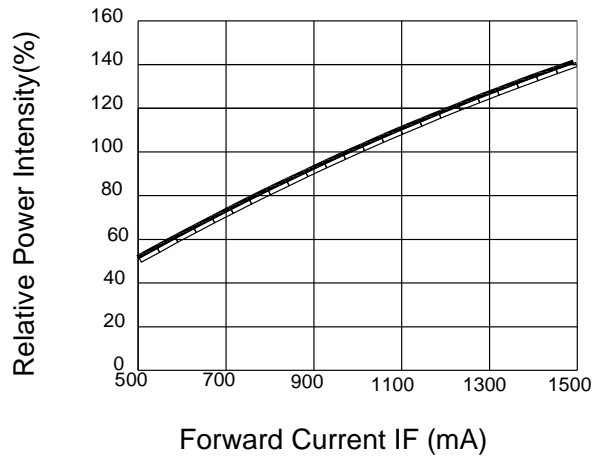
■ Characteristics

Single Chip

Forward Current VS. Forward Voltage

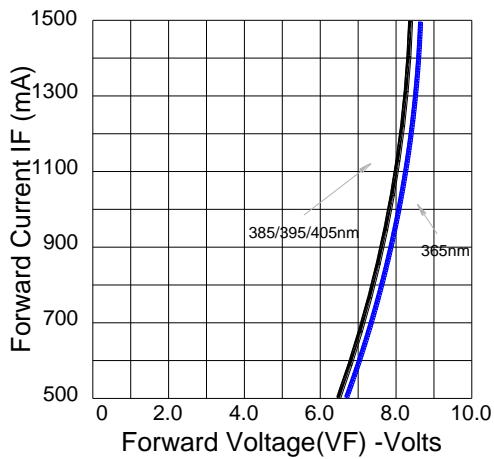


Relative Radiant Flux VS. Forward Current

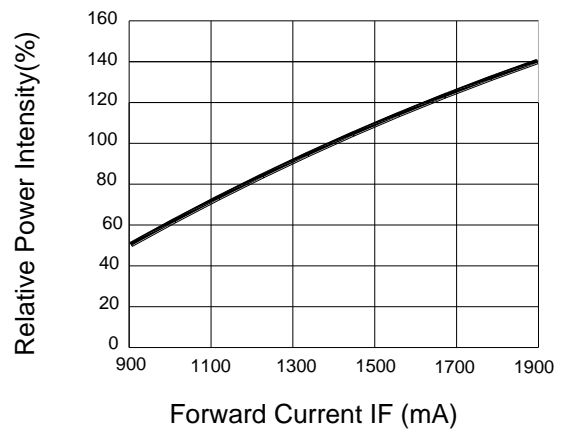


Type.2 2S2P

Forward Current VS. Forward Voltage

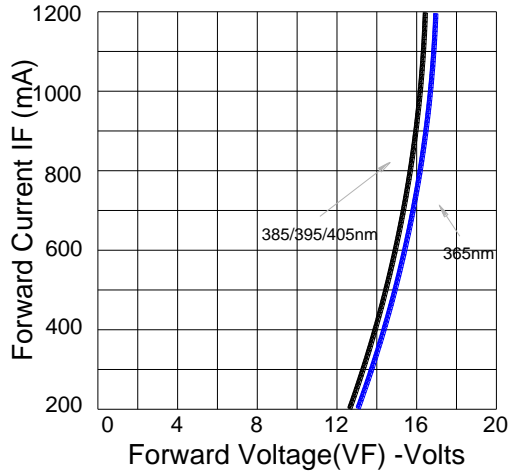


Relative Radiant Flux VS. Forward Current

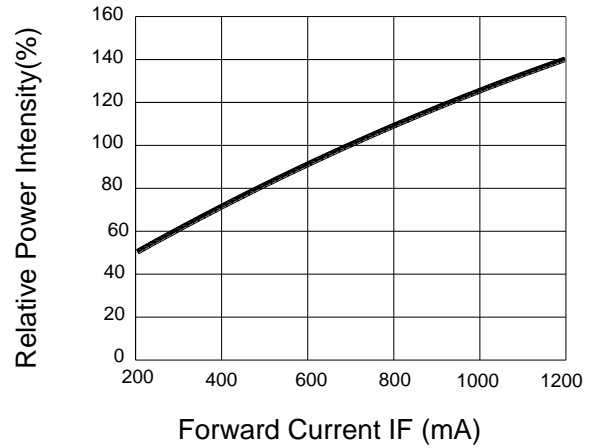


Type.3 4S

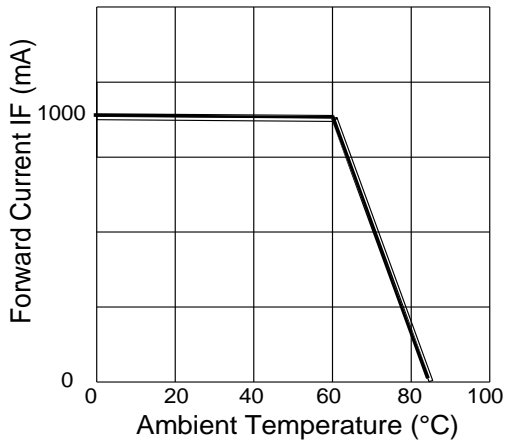
Forward Current VS. Forward Voltage



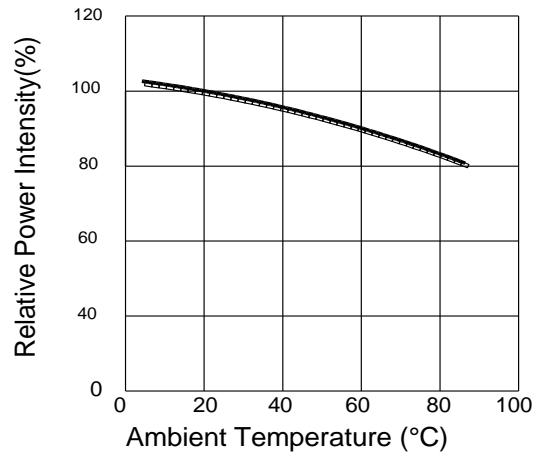
Relative Radiant Flux VS. Forward Current



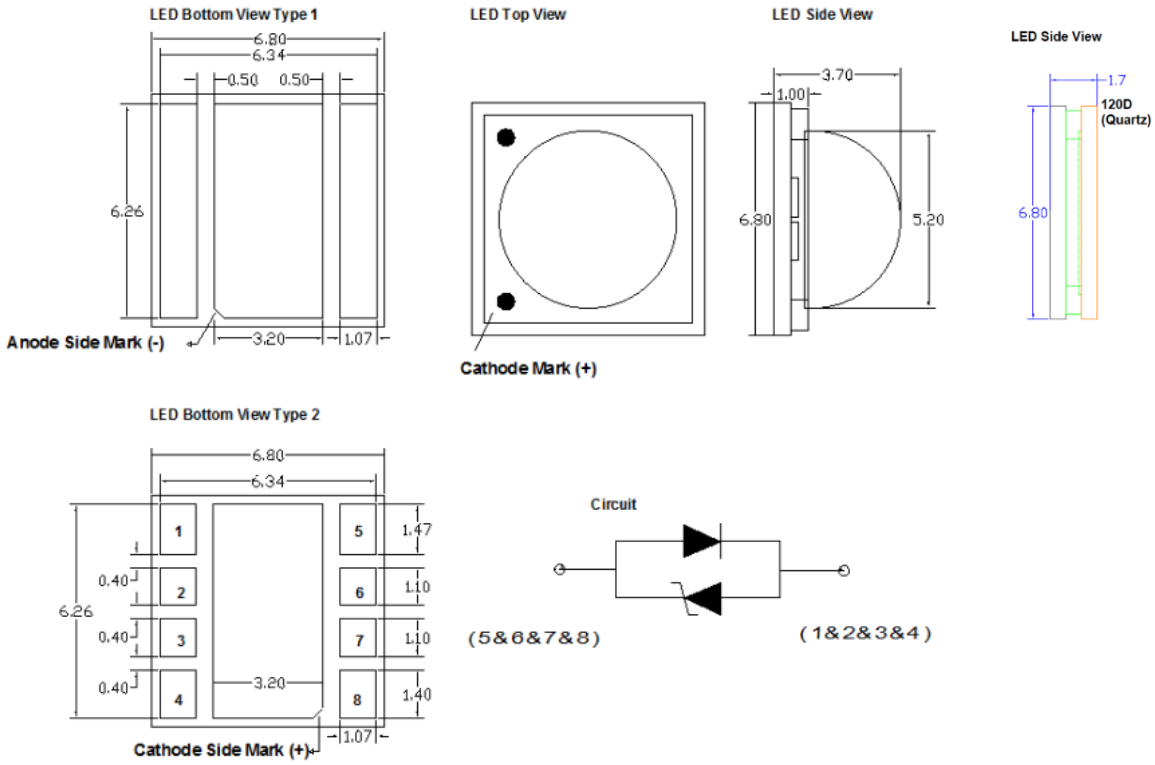
Forward Current VS. Ambient Temperature



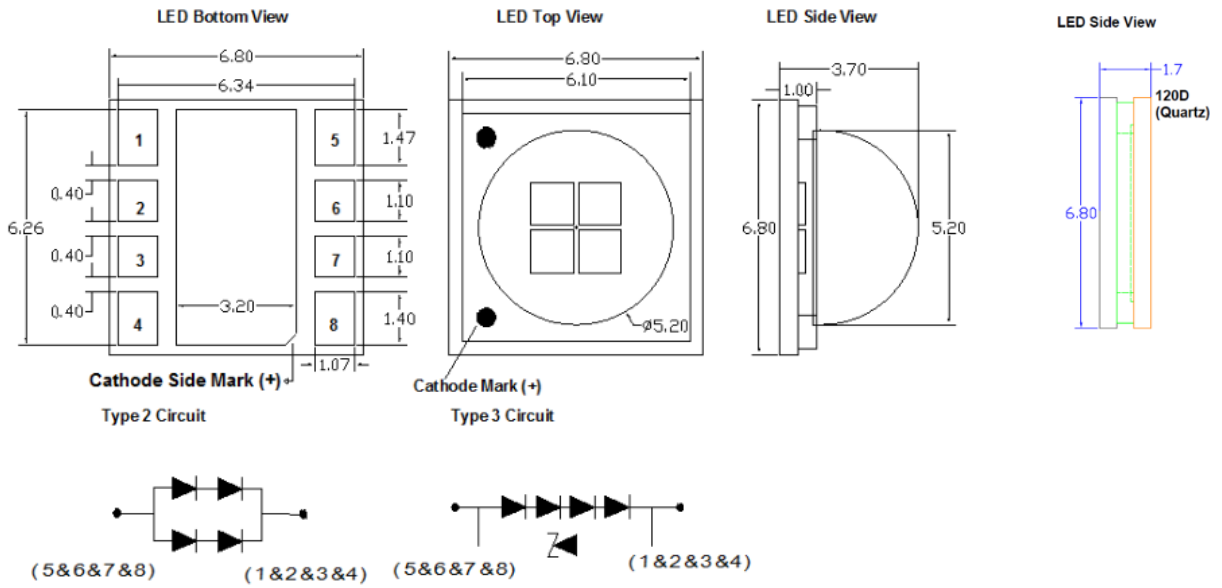
Radiant Power VS. Ambient Temperature



■ Type1 Dimensions & Circuit



■ Type 2&3 Dimensions & Circuit

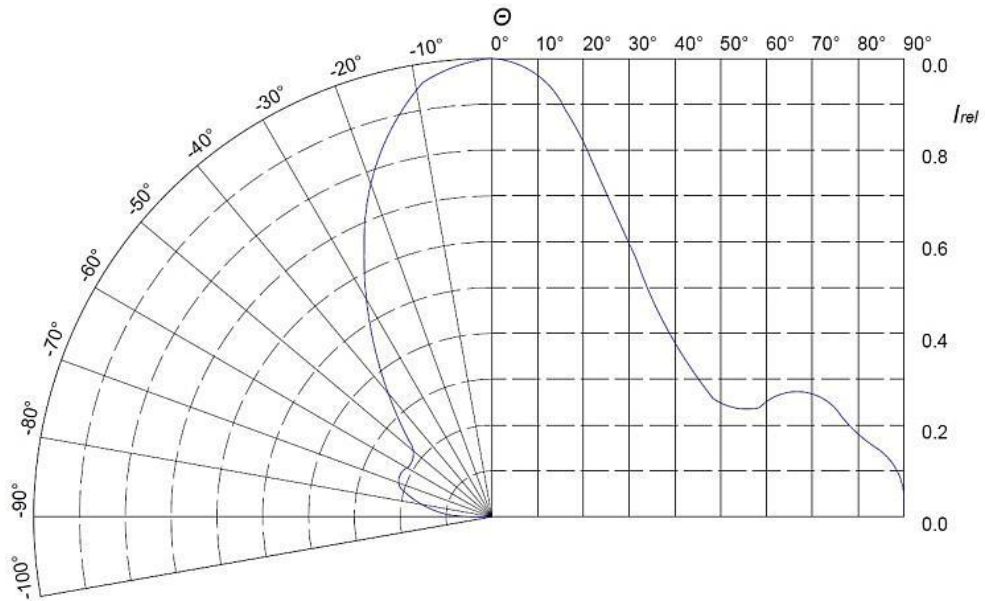


Notes:

§ All dimensions are in millimeters.

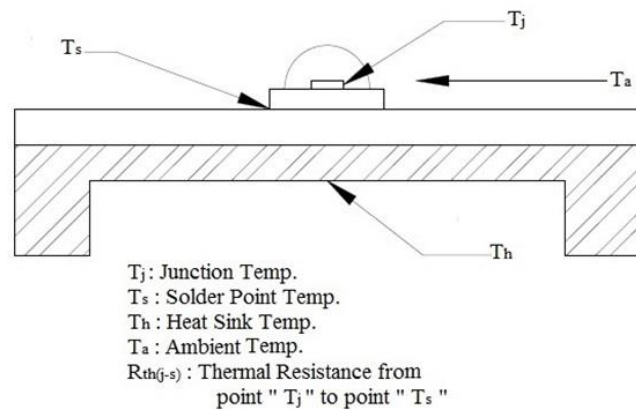
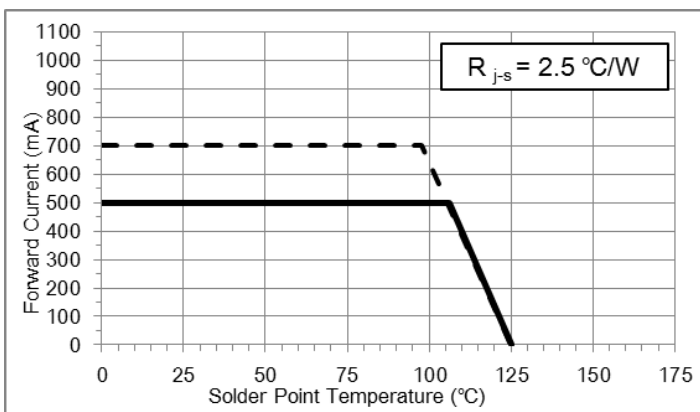
§ Tolerance is $\pm 0.13\text{mm}$ unless other specified.

Typical Spatial Distribution

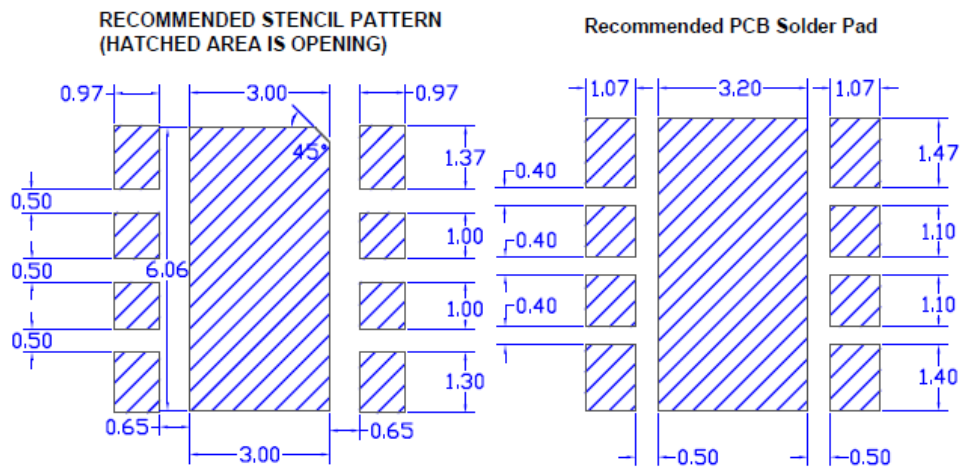


■ Thermal Design for De-rating

The maximum forward current is determined by the thermal resistance between the LED junctions and ambient. It is crucial for the end product to be designed in a manner that minimizes the thermal resistance from the solder point to ambient in order to optimize lamp life and optical characteristics.



■ Suggest Stencil Pattern

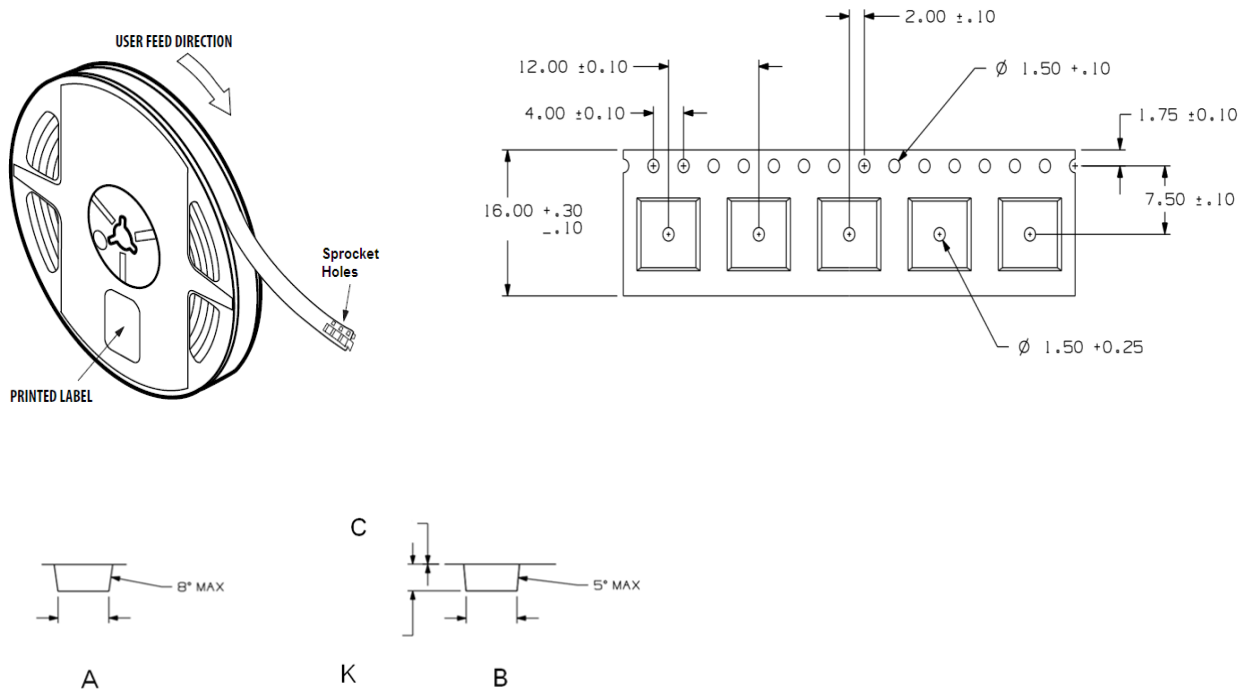


§ Suggest stencil $t = 0.12$ mm

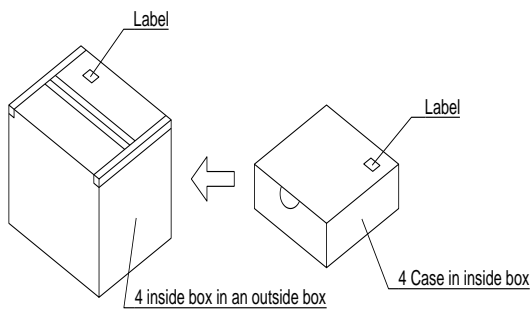
§ All dimensions are in millimeters.

§ Tolerance is ± 0.13 mm unless other specified.

■ Packing



Item	Dimension	Tolerance	Unit
A	7.30	± 0.10	mm
B	7.30	± 0.10	mm
C	0.30	± 0.05	mm
D	4.30	± 0.10	mm

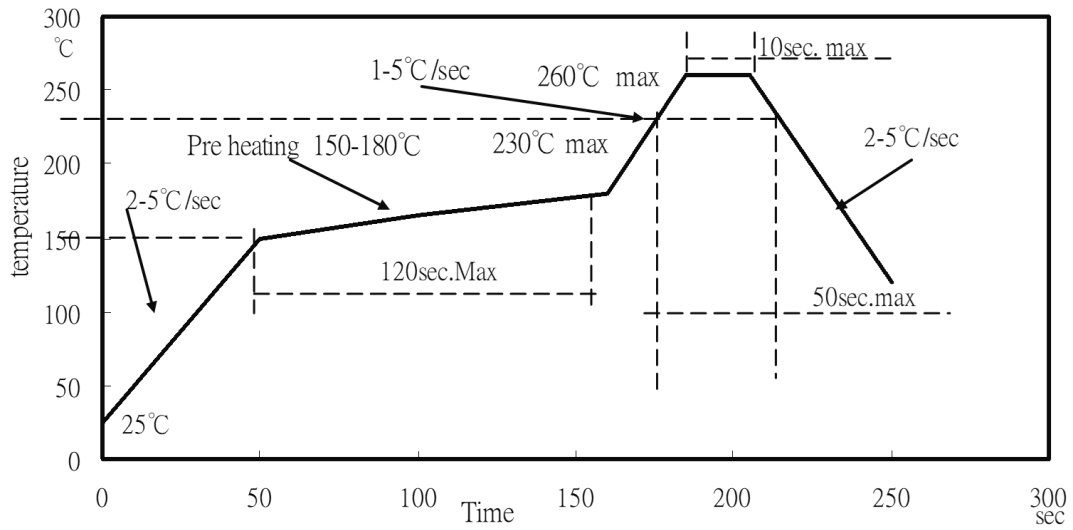


Notes:

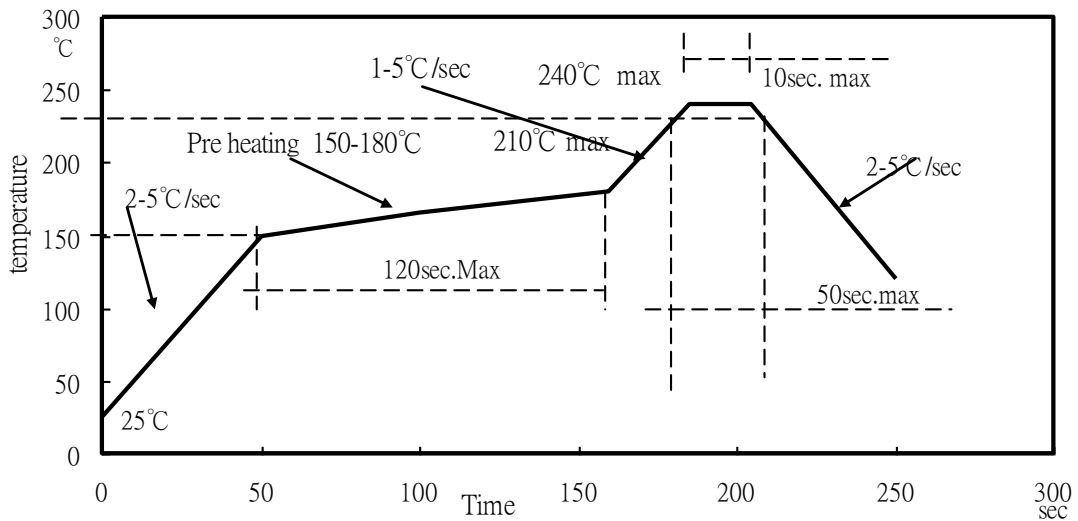
1. Each Reel (minimum 100 pcs and maximum 350 pcs) is packed in a moisture-proof bag along with 1 packs of desiccant and a humidity indicator card;
2. A maximum of 5 moisture-proof bags are packed in an inner box (size: 240mm x 200mm x 105mm ± 5 mm).
3. A maximum of 4 inner boxes are put in an outer box (size: 410mm x 255mm x 230mm ± 5 mm).
4. Part No., Lot No., quantity should be indicated on the label of the moisture-proof bag and the cardboard box.

■ Reflow Profile

Lead Free solder



Lead solder



Notes:

1. The recommended reflow temperature is 240°C(±5°C). The maximum soldering temperature should be limited to 260°C.
2. Do not stress the silicone resin while it is exposed to high temperature.
3. The number of reflow process should not exceed 3 times.

■ Test Items and Results of Reliability

Test Item	Test Conditions	Duration/ Cycle	Number of Damage	Reference
Thermal Shock	-40°C 30min ↑↓5min 125°C 30min	100 cycles	0/22	AECQ101
High Temperature Storage	T _a =100°C	1000 hrs	0/22	EIAJ ED-4701 200 201
Humidity Heat Storage	T _a =85°C RH=85%	1000 hrs	0/22	EIAJ ED-4701 100 103
Low Temperature Storage	T _a =-40°C	1000 hrs	0/22	EIAJ ED-4701 200 202
Life Test	T _a =25°C I _f =1,000mA	1000 hrs	0/22	Tested with UVTstandard
High Humidity Heat Life Test	85°C RH=85% I _f =1,000mA	1000 hrs	0/22	Tested with UVTstandard
High Temperature Life Test	T _a =85°C	1000 hrs	0/22	Tested with UVTstandard
ESD(HBM)	2KV at 1.5kΩ;100pf	3 Times	0/22	MIL-STD-883

Criteria for Judging the Damage				
Item	Symbol	Condition	Criteria for Judgment	
			Min	Max
Forward Voltage	V _F	I _f =1,000mA	—	USL ¹ ×1.1
Reverse Current	I _V	V _R =5V	—	100μA
Luminous Intensity	I _v	I _f =1,000mA	LSL ² ×0.7	—

Notes:

1. USL: Upper specification level
2. LSL: Lower specification level