LEDTRONICS, INC.®

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SML0805-G1K-TR

Super Green

0805 Profile Surface Mount LED
2.0 ×1.25 ×1.0 mm Chip LED
120° viewing angle

DWG BY:
BL / GP
09-26-06

CHK BY:
PL
11-02-06

QA:
__
11-__-06

MFG:
__
__-__-__

REVISION LTR: -
11-02-06

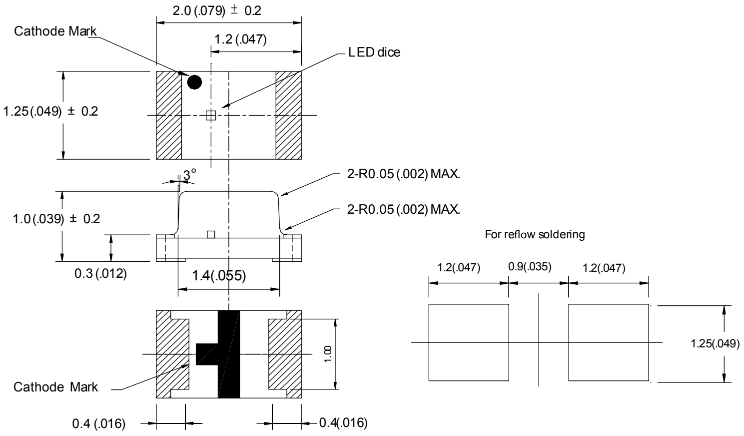
● Features:

1. Emitted Color : SuperGreen
2. Lens Appearance: Water Clear
3. Mono-color type.
4. 2.0x1.25x10mm (0805) standard package
5. Suitable for all SMT assembly methods.
6. Compatible with infrared and vapor phase reflow solder process.
7. Compatible with automatic placement equipment.
8. This product is RoHS compliant.

● Applications:

1. Automotive : Dashboards, stop lamps, turn signals.
2. Backlighting : LCDs,Keypads advertising.
3. Status indicators : Comsumer & industrial electronics.
4. General use.

● Package Dimensions:



NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.10mm (0.004”) unless otherwise specified.
3. Specifications are subject to change without notice.

● Absolute Maximum Ratings (Ta=25℃)

Parameter	Symbol	Rating	Unit
Power Dissipation	Pd	110	mW
Forward Current	I_F	30	mA
Peak Forward Current ＊1	I_{FP}	100	mA
Reverse Volage	V_R	5	V
Operating Temperature	Topr	-25℃ ~80℃	-
Storage Temperature	Tstg	-30℃ ~85℃	-
Soldeing Temperature	Tsol	See Page6	-

＊1 Condition for I_{FP} is pulse of 1/10 duty and 0.1msec width .

● Electrical and optical characteristics(Ta=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F=20mA	-	2.0	2.6	V
Luminous Intensity	Iv	I_F=20mA	-	50	-	mcd
Reverse Current	I_R	V_R=5V	-	-	100	μA
Peak Wave Length	λp	I_F=20mA	-	575	-	nm
Dominant Wave Length	λd	I_F=20mA	-	573	-	nm
Spectral Line Half-width	Δλ	I_F=20mA	-	17	-	nm
Viewing Angle	$2\theta_{1/2}$	I_F=20mA	-	120	-	deg
Radiant Intensity		I_F=20mA	-	-	-	μW/sr
Chromaticity Coordinates	X	I_F=20mA	-	0.46	-	
	Y		-	0.53	-	

● Typical Electro-Optical Characteristics Curves

Fig.1 Relative intensity vs. wavelength

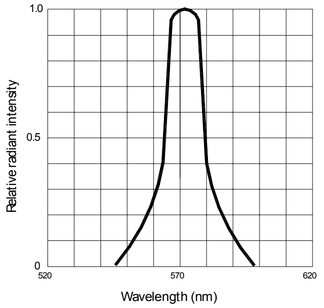


Fig.2 Forward current derating curve vs. ambient temperature

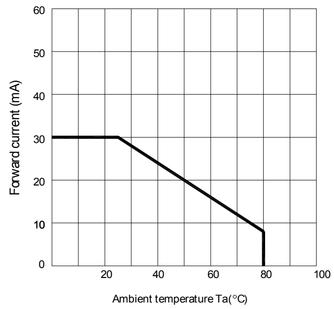


Fig.3 Forward current vs. forward voltage

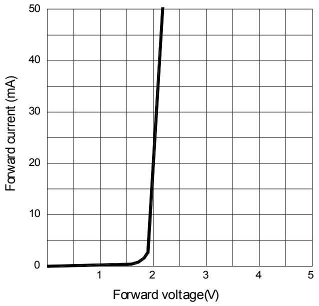


Fig.4 Relative luminous intensity vs. ambient temperature

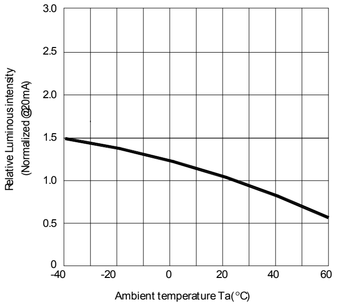


Fig.5 Relative luminous intensity vs. forward current

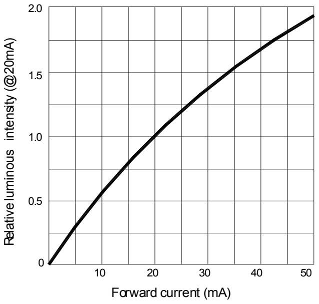
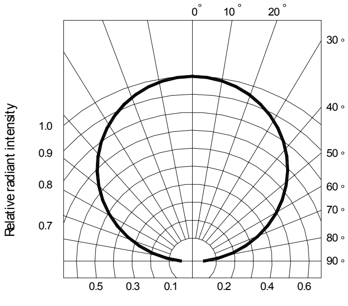
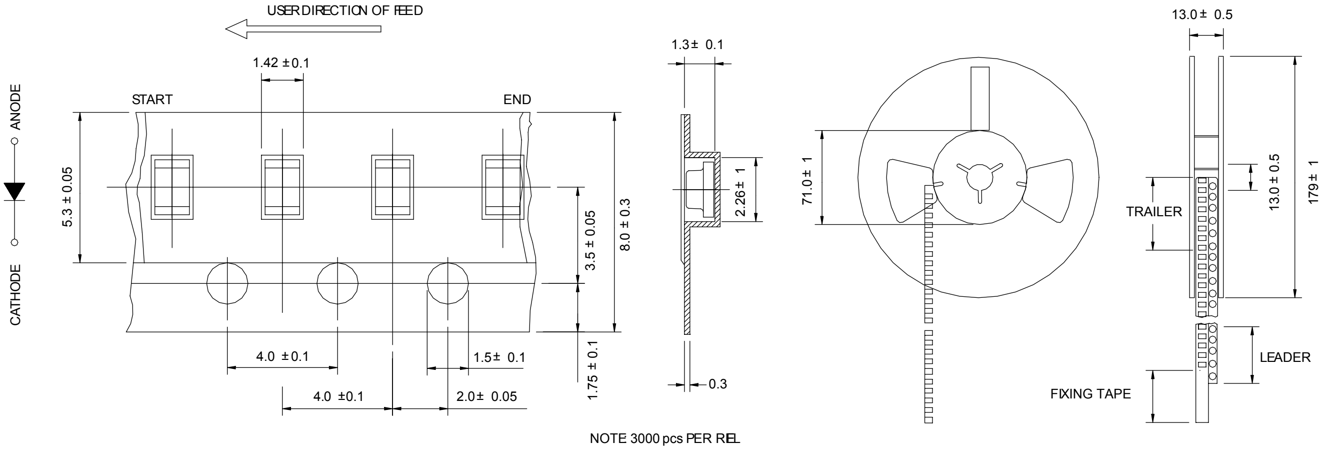


Fig.6 Radiation diagram



● Tape and reel packaging specifications (Units: mm)



NOTE 3000 pcs PER REEL

● Bin Limits

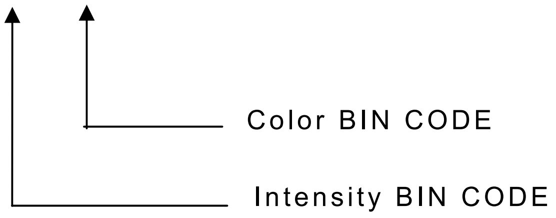
Intensity Bin Limits (At 20mA)

BIN CODE	Min. (mcd)	Max. (mcd)
L	16.0	32.0
M	24.0	48.0
N	37.0	72.0
P	55.0	110.0

Color Bin Limits (At 20mA)

BIN CODE	Min. (nm)	Max. (nm)
4	565	569
5	567	571
6	569	573
7	571	575
8	573	577

● BIN: x x



RELIABILITY TEST

Classification	Test Item	Reference Standard	Test Conditions	Result
Endurance Test	Operation Life	MIL-STD-750: 1026 MIL-STD-883: 1005 JIS C 7021: B-1	Connect with a power I = 20mA$_f$ T_a = Under room temperature Test time = 1,000hrs	0/20
	High Temperature, High Humidity Storage	MIL-STD-202: 103B JIS C 7021: B-11	T_a = +65°C±5°C RH = 90%-95% Test time = 240hrs	0/20
	High Temperature Storage	MIL-STD-202: 1008 JIS C 7021: B-10	High T_a = +85°C±5°C Test time = 1,000hrs	0/20
	Low Temperature Storage	JIS C 7021: B-12	Low T_a = -35°C±5°C Test time = 1,000hrs	0/20
Environmental Test	Temperature Cycling	MIL-STD-202: 107D MIL-STD-750: 1051 MIL-STD-883: 1010 JIS C 7021: A-4	-35°C ~ +25°C ~ +85°C ~ +25°C 60min. 20min. 60min. 20min. Test time = 5 cycles	0/20
	Thermal Shock	MIL-STD-202: 107D MIL-STD-750: 1051 MIL-STD-883: 1011	-35°C±5°C ~ +85°C±5°C 20min. 20min. Test time = 10 cycles	0/20
	Solder Resistance	MIL-STD-202: 201A MIL-STD-750: 2031 JIS C 7021: A-1	Preheating: 140°C - 160°C, within 2 minutes. Operation heating: 235°C (Max.), within 10 seconds. (Max.)	0/20

JUDGEMENT CRITERIA OF FAILURE FOR THE RELIABILITY TEST

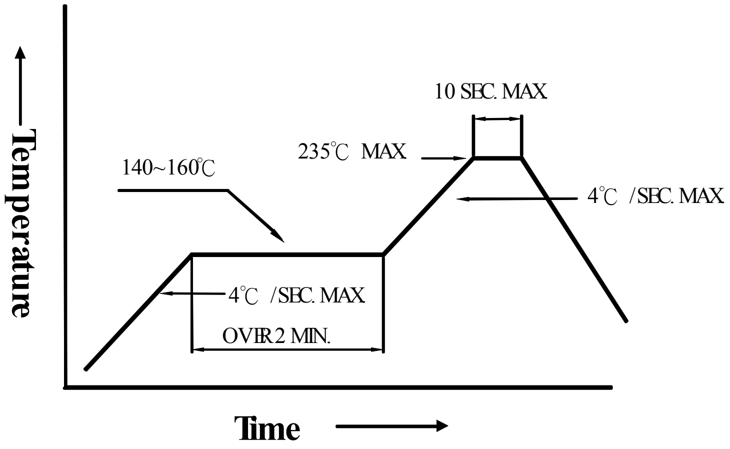
Measuring items	Symbol	Measuring conditions	Judgment criteria for failure
Forward voltage	V_f (V)	I_f = 20mA	Over Ux1.2
Reverse current	I_r (uA)	V_r = 5V	Over Ux2
Luminous intensity	I_V (mcd)	I_f = 20mA	Below Sx0.5

Note: 1. U means the upper limit of specific characteristics. S means initial value.
2. Measurement shall be taken between 2 hours and after the test pieces have been returned to normal ambient conditions after completion of each test.

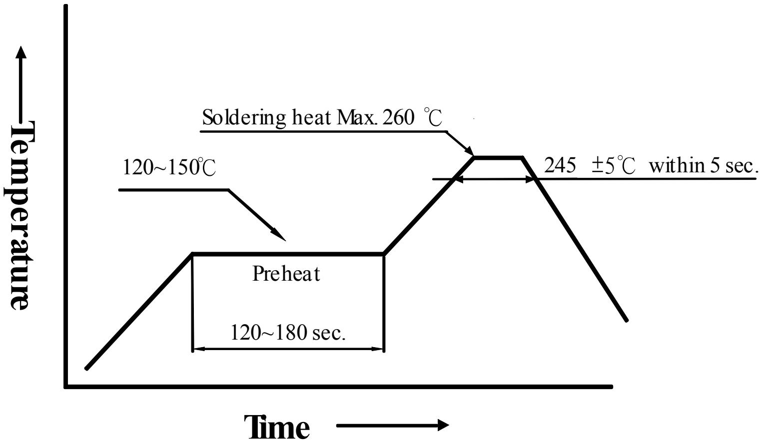
● Soldering :

1. Manual Of Soldering
   The temperature of the iron tip should not be higher than 300℃ (572°F) and Soldering within 3 seconds per solder-land is to be observed.

2. Reflow Soldering
   Preheating : 140℃ ~160℃ ±5℃ ,within 2 minutes.
   Operation heating : 235℃ (Max.) within 10 seconds.(Max)
   Gradual Cooling (Avoid quenching).



3. DIP soldering (Wave Soldering) :
   Preheating : 120℃~150℃,within 120~180 sec .
   Operation heating : 245℃±5℃ within 5 sec.260℃ (Max)
   Gradual Cooling (Avoid quenching).



● Handling :

Care must be taken not to cause damage to the epoxy resin portion of LEDs while it is exposed to high temperatures, or abrade the epoxy resin portion of LEDs with hard or sharp items as from sand blasting and the use of sharp metallic objects.