LEDTRONICS, INC.®

23105 Kashiwa Court, Torrance, CA 90505
Phone: (800) 579-4875 or (310) 534-1505 Fax: (310) 534-1424
E-mail: webmaster@ledtronics.com
Website: http://www.ledtronics.com

SML080CUB5-011

Super Blue
Axial Surface Mount LEDs
2.1×2.2×2.7mm, Z-bend leads
35° viewing angle

DWG BY: BL / GP 06-04-13
CHK BY: PL 06-04-13
REVISION LTR: - 06-04-13

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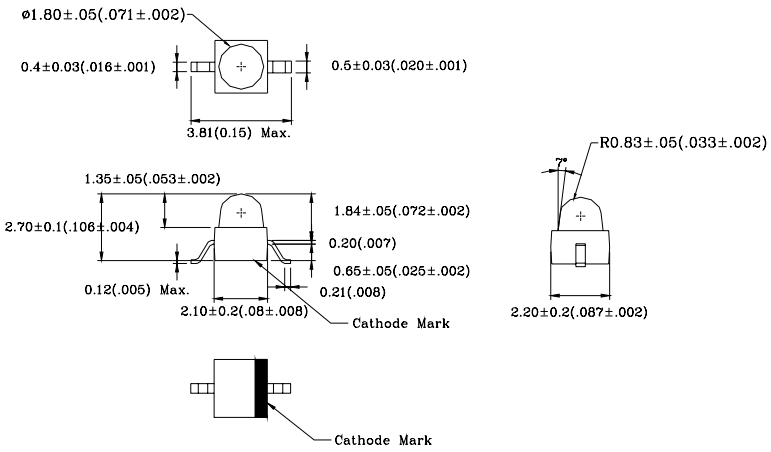
● Features:

1. Emitted Color: Super Blue.
2. Lens Appearance: Water Clear.
3. Low cost plastic package.
4. This product is RoHS compliant.

● 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.

● Applications:

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

● Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Rating	Unit
Power Dissipation	Pd	52	mW
Forward Current	I_F	20	mA
Peak Forward Current ＊1	I_{FP}	100	mA
Reverse Voltage	V_R	5	V
Operating Temperature	Topr	-40℃ ~85℃	-
Storage Temperature	Tstg	-40℃ ~85℃	-
Soldering Temperature	Tsol	See Page 5	-

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

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● Electrical and optical characteristics(Ta=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F=20mA	-	3.8	4.6	V
Luminous Intensity	Iv	I_F=20mA	12.3	80	-	mcd
Reverse Current	I_R	V_R=5V	-	-	1	μA
Peak Wave Length	λ p	I_F=20mA	-	422	-	nm
Dominant Wave Length	λ d	I_F=20mA	-	460	-	nm
Spectral Line Half-width	Δλ	I_F=20mA	-	59	-	nm
Viewing Angle	$2\theta_{1/2}$	I_F=20mA	-	35	-	deg
Radiant Intensity		I_F=20mA	-	1800	-	μW/sr
Chromaticity Coordinates	X	I_F=20mA	-	0.16	-	
	Y		-	0.05	-	

● Typical Electro-Optical Characteristics Curves

Fig.1 Relative intensity vs. wavelength

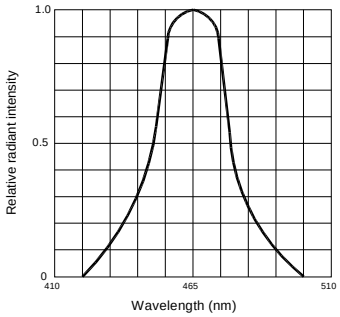


Fig.2 Forward current derating curve vs. ambient temperature

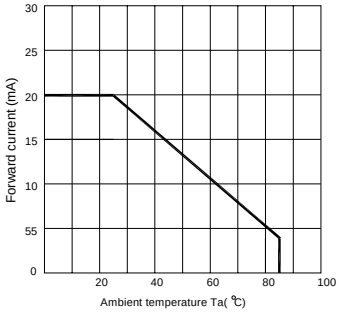


Fig.3 Forward current vs. forward voltage

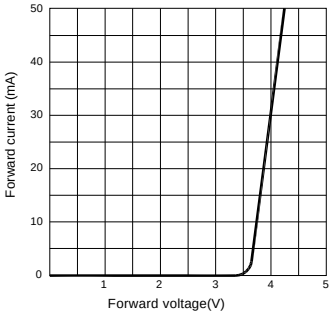


Fig.4 Relative luminous intensity vs. ambient temperature

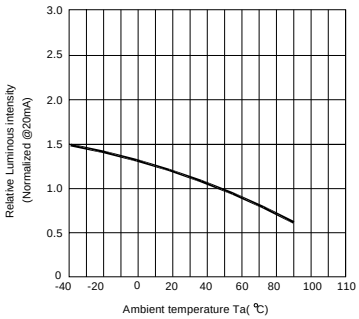


Fig.5 Relative luminous intensity vs. forward current

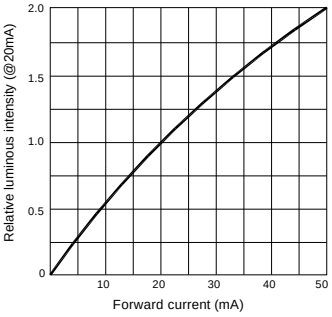
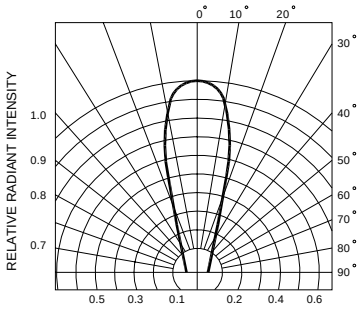


Fig.6 Radiation diagram



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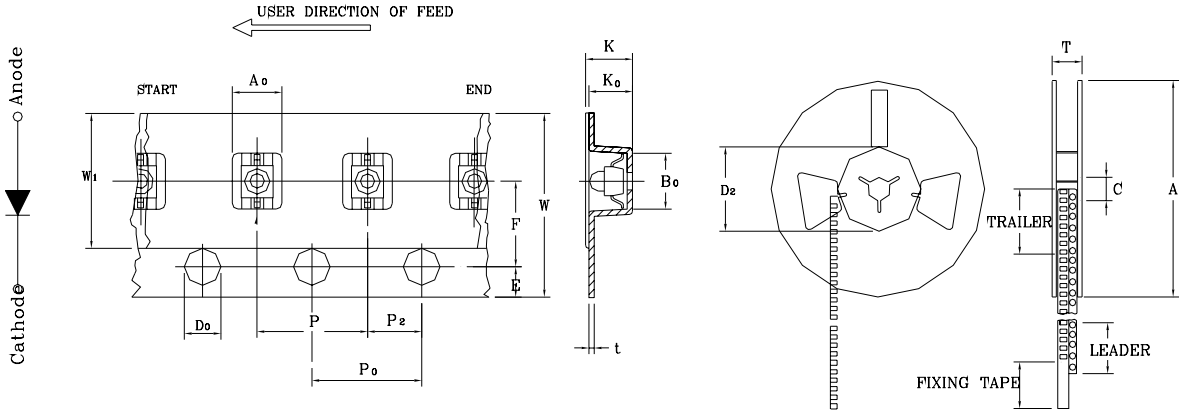
● Tapping and packaging specifications (Units: mm)
Quantity: 1500pcs



● Reliability Test

Classification	Test Item	Reference Standard	Test Conditions	Result
Endurance Test	Operation Life	MIL-STD-750D:1026 MIL-STD-883D:1005 JIS-C-7021 :B-1	Ta: Under room temperature Test time:1,000hrs IF=Product Recommended IF	0/32
	High Temperature High Humidity Storage	MIL-STD-202F:103B JIS-C-7021 :B-11	Ta:85±5℃ RH:90%-95% Test time:240hrs	0/32
	High Temperature Storage	MIL-STD-883:1008 JIS-C-7021 :B-10	Ta:100±5℃ Test time:1,000hrs	0/32
	Low Temperature Storage	JIS-C-7021 :B-11	Ta: -40±5℃ Test time=1,000hrs	0/32
Environmental Test	Temperature Cycling	MIL-STD-202F:107D MIL-STD-750D:1051 MIL-STD-883D:1010 JIS-C-7021 :A-2	Ta:-35±5℃ ~25±5℃ ~85±5℃ ~25±5℃ 30min 5min 30min 5min	0/32
	Thermal Shock	MIL-STD-202F:107D(1980) MIL-STD-750D:1051(1995) MIL-STD-883D:1011(1991)	Ta:-40±5℃ ~+85±5℃ 10min 10 min Time: 20min/cycle 10cycle	0/32
	Wetting balance	MIL-STD-883:2003 MIL-STD-202F:208D MIL-STD-883D:2003	Ta:230±5℃ Time:5±0.5s	0/32
	Solder Resistance	MIL-STD-202F:210A MIL-STD-883D:1011 JIS-C-7021 :A-1	Ta:260±10℃ Time:10±1s	0/32

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● Judgment criteria of failure for the reliability

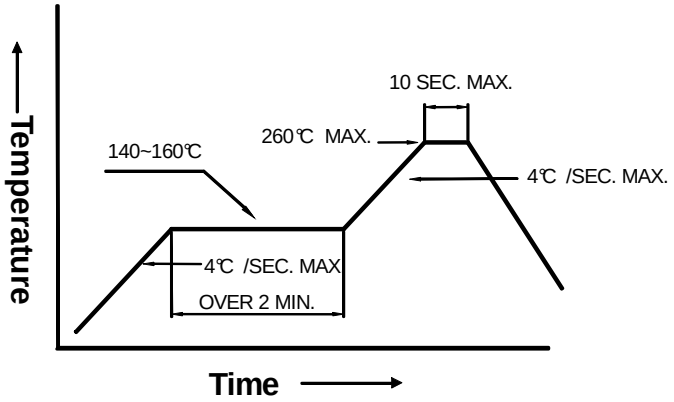
Measuring items	Symbol	Measuring conditions	Judgment criteria for failure
Forward voltage	V_F (V)	I_F=20mA	Initial Level*1.1
Reverse current	I_R(uA)	V_R=5V	Over U*2
Luminous intensity	Iv (mcd)	I_F=20mA	Initial Level*0.7

Note: 1.U means the upper limit of specified characteristics.
2. Measurment shall be taken between 2 hours and after the test pieces have been returned

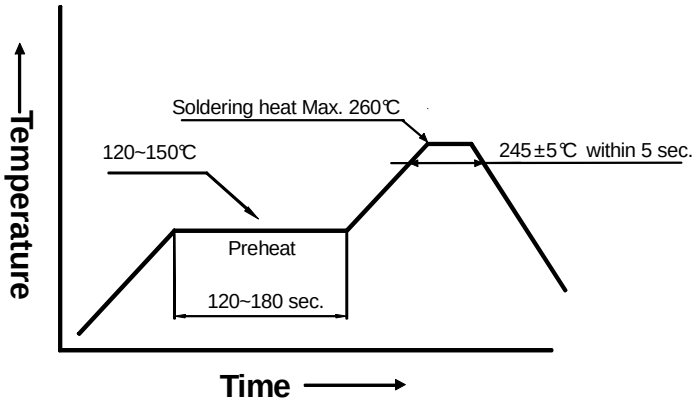
● Soldering :

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

2. Refold Soldering
Preheating : 140℃ ~160℃ ±5℃ ,within 2 minutes.
Operation heating : 260℃ (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 to the epoxy resin portion of LEDs while it is exposed to high temperature.
Care must be taken not rub the epoxy resin portion of LEDs with hard or sharp article such as the sand blast and the metal hook.