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
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SML10G3-TR

Hi-Eff Green

Surface Mount LED

3.0 ×3.0 ×1.0mm Chip LED

140° viewing angle

DWG BY: BL / GP 09-12-06
CHK BY: PL 09-11-07
QA: __ __-__-__
MFG: __ __-__-__
REVISION LTR: - 09-11-07

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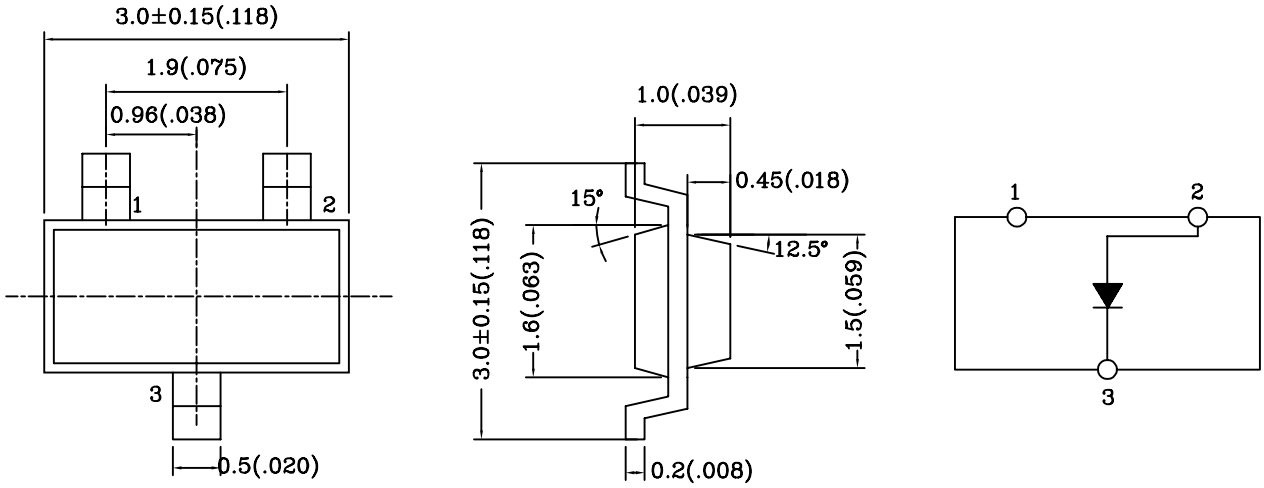
●PACKAGE DIMENSIONS



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.
4.Condition for IFp is pulse of 1/10 duty and 0.1msec width.

● Absolute Maximum Ratings(Ta=25℃)

Parameter	Symbol	Rating	Unit
Power Dissipation	Pd	100	mW
Forward Current	I_F	30	mA
Peak Forward Current ＊1	I_{FP}	150	mA
Reverse Volage	V_R	5	V
Operating Temperature	Topr	-25℃ ~80℃	-
Storage Temperature	Tstg	-30℃ ~85℃	-
Soldering Temperature	Tsol	See Page6	-

Remark：Viewing angle is the Off-axis angle at which the luminous intensity is half the axial luminous intensity.

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● Electrical and optical characteristics(Ta=25℃)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F=20mA	-	2.2	2.6	V
Luminous Intensity	Iv	I_F=20mA	-	10	-	mcd
Reverse Current	I_R	V_R=5V	-	-	100	μA
Peak Wave Length	λp	I_F=20mA	565	566	568	nm
Dominant Wave Length	λd	I_F=20mA	570	572	573	nm
Spectral Line Half-width	Δλ	I_F=20mA	-	30	-	nm
Viewing Angle	$2\theta_{1/2}$	I_F=20mA	-	140	-	deg
Radiant Intensity		I_F=20mA	-	-	-	μW/sr
Chromaticity Coordinates	X	I_F=20mA	-	0.46	-	
	Y		-	0.54	-	

● Typical Electro-Optical Characteristics Curves

Fig.1 RELATIVE INTENSITY VS. WAVELENGTH

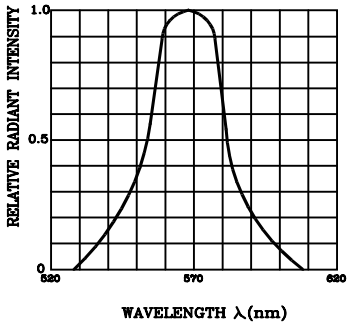


Fig.2 FORWARD CURRENT DERATING CURVE

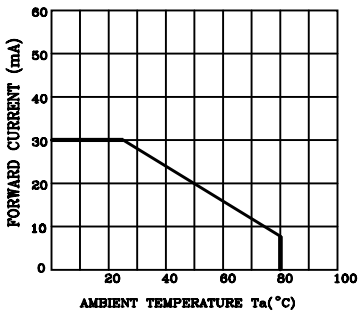


Fig.3 FORWARD CURRENT VS. FORWARD VOLTAGE

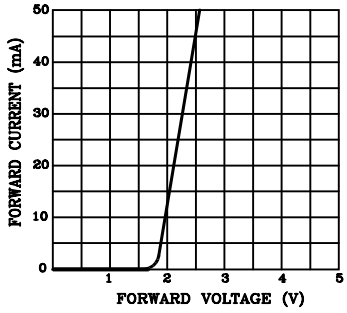


Fig.4 RELATIVE LUMINOUS INTENSITY VS. AMBIENT TEMPERATURE

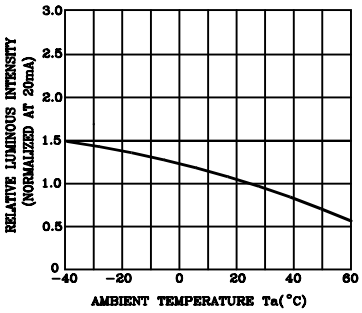


Fig.5 RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

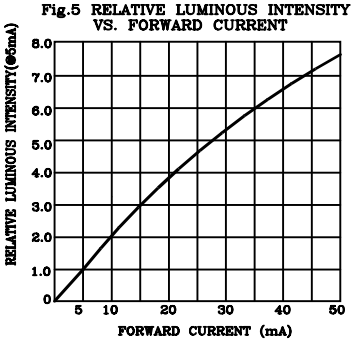
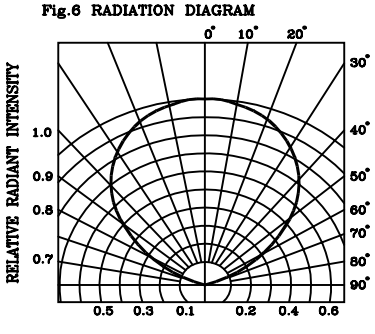


Fig.6 RADIATION DIAGRAM



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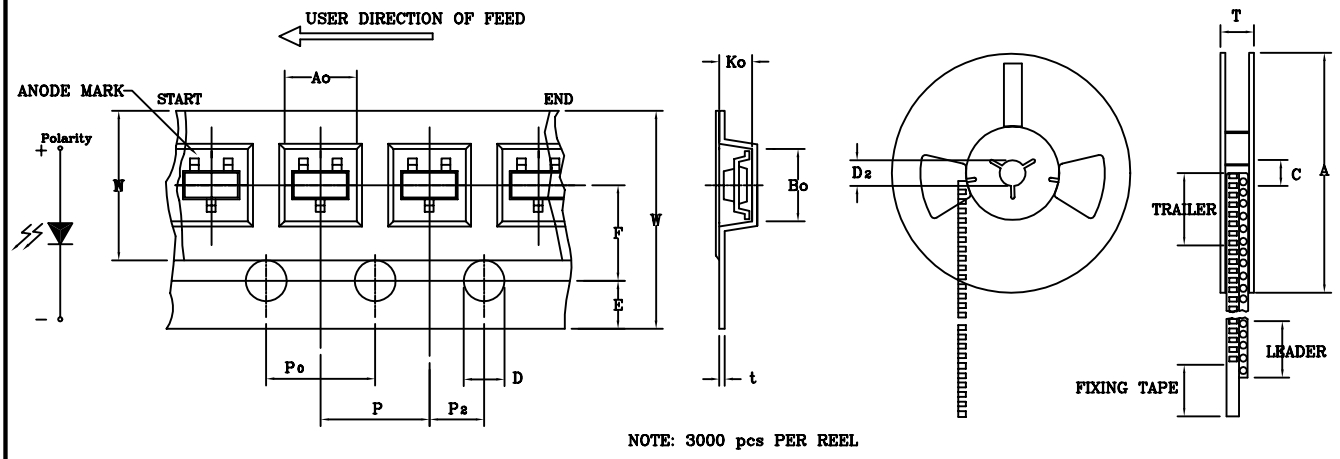
ITEM	SYMBOL	SPECIFICATION			
		Minimum		Maximum	
		mm	inch	mm	inch
Tape Feed Hole Diameter (DIA)	D	1.50	0.059	1.60	0.063
Feed Hole Location	E	1.65	0.064	1.85	0.073
Centers Line Dimensions Length Direction	F	3.45	0.135	3.55	0.139
Compartment Depth	K_0	1.40	0.049	1.60	0.057
Compartment Pitch	P	3.90	0.153	4.10	0.161
Sprocket Hole Diameter	P_0	3.90	0.153	4.10	0.161
Centers Line Dimensions Length Direction	P_2	1.95	0.076	2.05	0.080
Carrier Tape Thickness	t	—	—	0.30	0.012
Carrier Tape Width	W	7.70	0.303	8.30	0.326
Flange Diameter	A	176.0	6.928	180.0	7.087
Hub Spindle Hole	C	12.50	0.492	13.50	0.531
Hub Diameter	D_2	20.10	0.791	20.30	0.799
Fixing Tape Width	N	59.00	2.322	61.00	2.402
Flange Space Between Flanges	T	14.30	0.563	14.50	0.571
Compartment Length	A_0	3.10	0.122	3.20	0.130
Compartment Width	B_0	3.10	0.122	3.20	0.130



NOTE: 3000 pcs PER REEL

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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 If=20mA Ta=Under room temperature Test time=1,000hrs	0/20
	High Temperature High Humidity Storage	MIL-STD-202:103B JIS C 7021 :B-11	Ta=+65℃±5℃ RH=90%-95% Test time=1,000hrs	0/20
	High Temperature Storage	MIL-STD-883:1008 JIS C 7021 :B-10	High Ta=+85℃±5℃ Test time=1,000hrs	0/20
	Low Temperature Storage	JIS-C-7021 :B-12	Low Ta=-35℃±5℃ 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℃ ~+25℃ ~+85℃ ~+25℃ 60min 20min 60min 20min Test Time=5cycle	0/20
	Thermal Shock	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1011	+85℃±5℃ ~-35℃±5℃ 20min 20min Test Time=10cycle	0/20
	Solder Resistance	MIL-STD-202:201A MIL-STD-750:2031 JIS C 7021 :A-1	Preheating： 140℃-160℃,within 2 minutes. Operation heating： 235℃(Max.),within 10seconds.(Max.)	0/20

JUDGMENT CRITERIA OF FAILURE FOR THE RELIABILITY

Measuring items	Symbol	Measuring conditions	Judgement criteria for failure
Forward voltage	V_F (V)	If=20mA	Over Ux1.2
Reverse current	Ir(uA)	Vr=5V	Over Ux2
Luminous intensity	Iv (mcd)	If=20mA	Below SX0.5

Note: 1.U means the upper limit of specified characteristics. S means initial value.

2.Measurment shall be taken between 2 hours and after the test pieces have been returned to normal ambient conditions after completion of each test.

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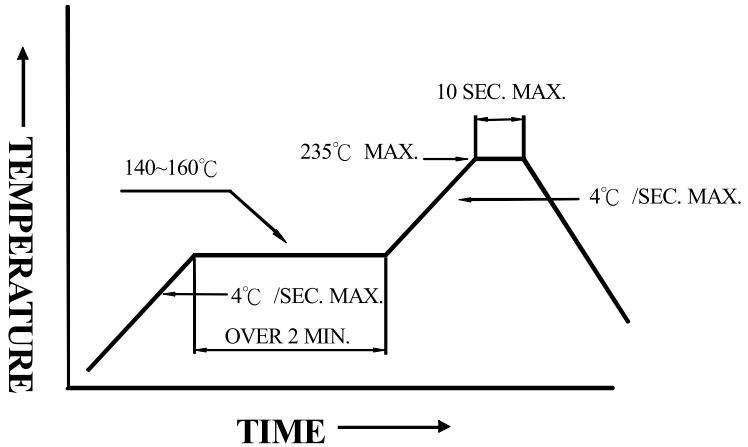
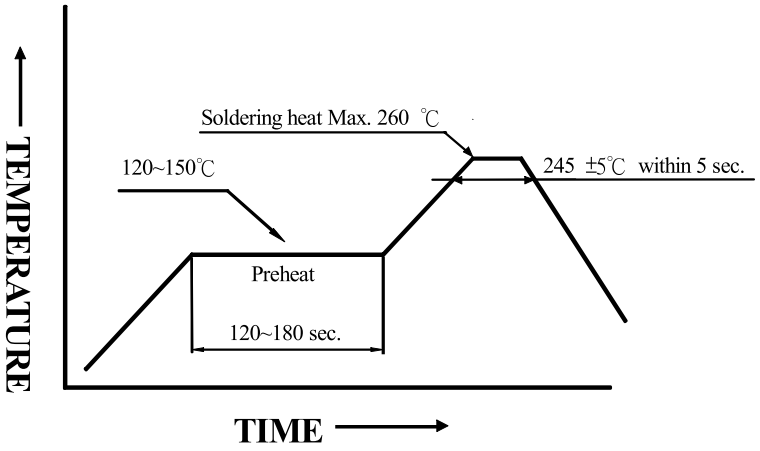
1. SOLDERING :

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



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



2. 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