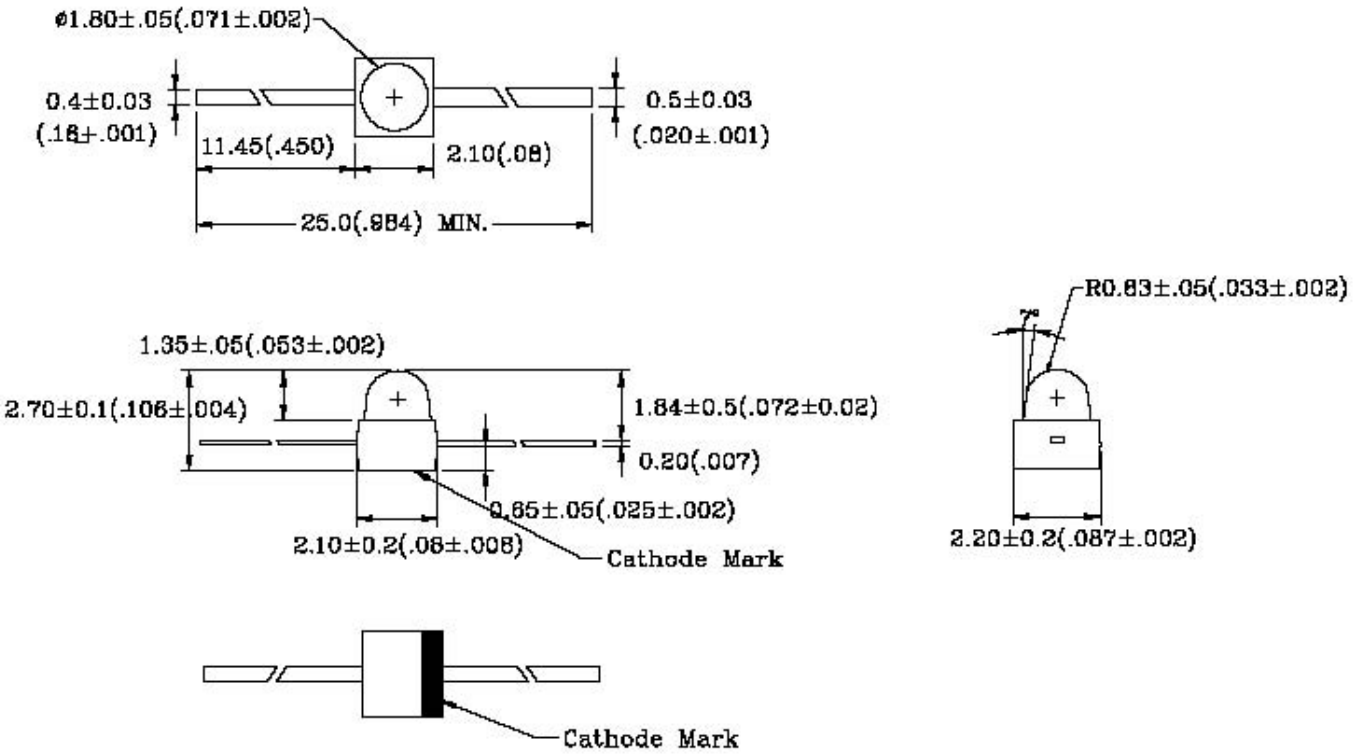
DIPTRONICS MANUFACTURING INC.
LED LAMPS SPECIFICATION

Axial Package LED Sheet

PAPT NO.：BG-S

● PACKAGE OUTLINE DIMENSIONS



Notes：

1. All dimensions are in millimeters.
2. Tolerance is ±0.1mm(.004”) unless otherwise noted.
3. Lead spacing measured where the leads emerge form the package.
4. Specifications are subject change without notice.

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● **Chip Materials**

＊ Dice Material ：AlGaInP

＊ Light Color：Ultra Yellow Green

＊ Lens Color：Water Clear

● **Absolute Maximum Ratings (Ta = 25℃)**

Parameter	Symbol	Value	Unit
Power Dissipation	Pd	100	mW
Peak Pulsing Current (1/8 Duty Cycle, f = 1kHZ)	Ifp	100	mA
Forward Current	If	30	mA
Reverse Voltage	Vr	5	V
Operating Temperature Range	Topr	-25~80	℃
Storage Temperature Range	Tstg	-30~85	℃
Lead Soldering Temperature	See Page 4		—

● **Electro-Optical Characteristics (Ta = 25℃)**

Parameter	Symbol	Test Condtion	Min.	Typ.	Max.	Unit
Wavelength at peak emission	λP	If=20mA		570		nm
Viewing Angle	2θ1/2	If=10mA		35		Deg.
Dominant Wavelength	λD	If=20mA	566		576	nm
Spectral Line Half-Width	Δλ	If=20mA		30		nm
Forward Voltage	Vf	If=20mA		2.0	2.6	V
Chip luminous intensity	Iv	If=20mA	42	100		mcd
Reverse Current	Ir	Vr=5V			100	μA

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● OPTICAL CHARACTERISITIC CURVES

Fig.1 Relative intensity vs. wavelength

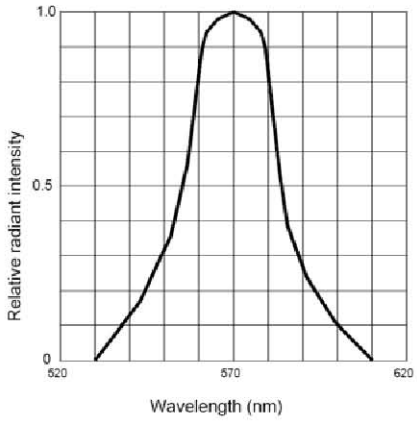


Fig.2 Forward current derating curve vs. ambient temperature

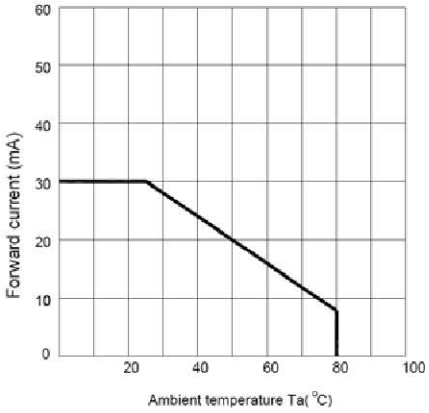


Fig.3 Forward current vs. forward voltage

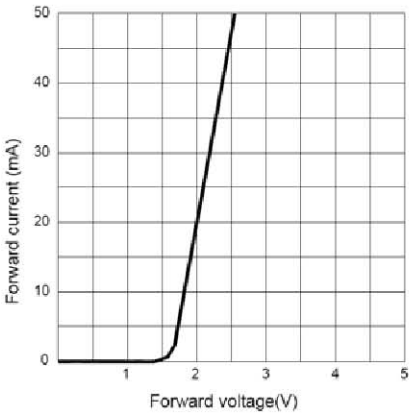


Fig.4 Relative luminous intensity vs. ambient temperature

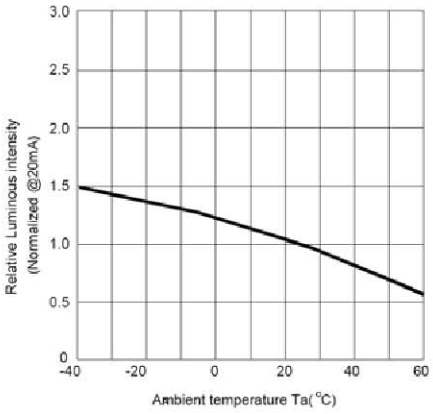


Fig.5 Relative luminous intensity vs. forward current

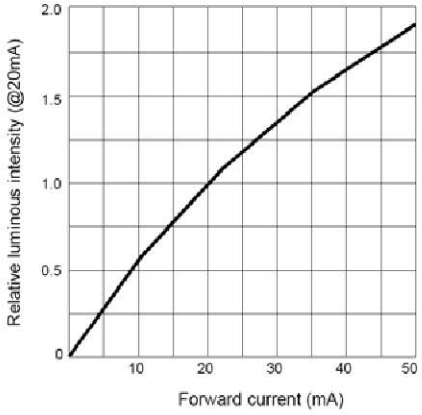
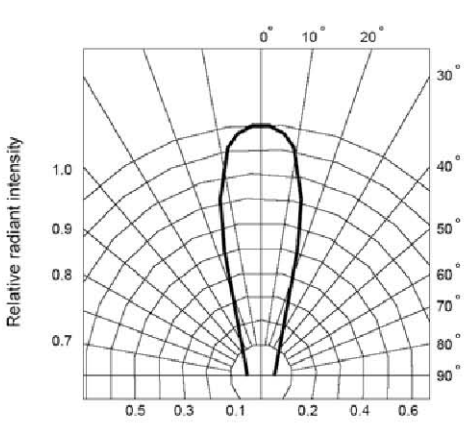


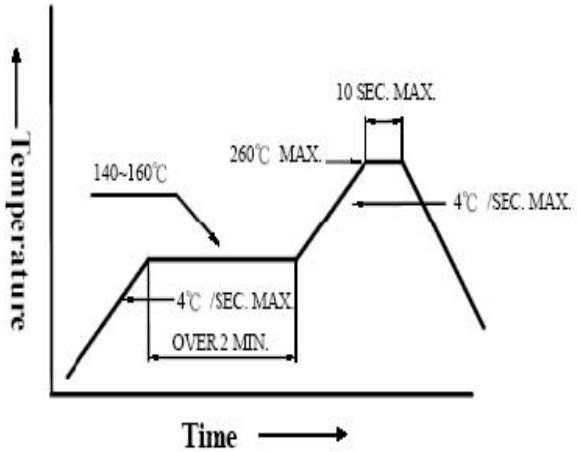
Fig.6 Radiation diagram



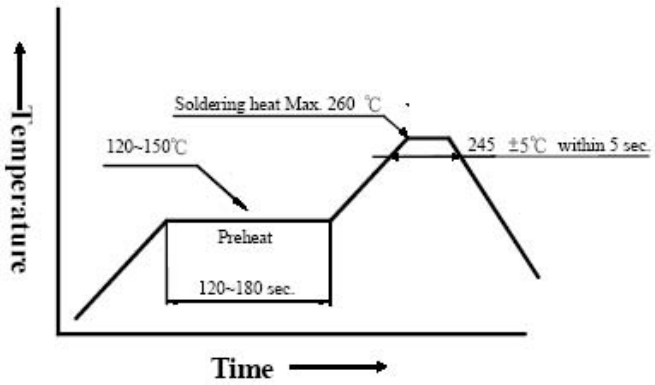
● **Soldering：**

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. Reflow soldering：
   Preheating：140℃~160℃±5℃ ，within 2 minutes.
   Operation heating：260℃(Max) within 10 seconds.(Max)



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



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● **Handing：**

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.

● **Notes for designing：**

Care must be taken to provide the current limiting resistor in the circuit so as drive the LEDs within the rated figures. Also, caution should be taken not to overload LEDs with instantaneous voltage ate the turning ON and OFF of the circuit.

When using the pulse drive care must be taken to keep the average current within the rated figures. Also, the circuit should be designed so as subjected to reverse voltage when turning off the LEDs.

● **Storage：**

In order to avoid the absorption of moisture, it is recommended to solder LEDs as soon as possible after unpacking the sealed envelop.

If the envelope is still packed, to store it in the environment as following：

(1) Temperature：5℃-30℃(41℉)Humidity：RH 60% Max.

(2) After this bag is opened, devices that will be applied to infared reflow, vapor-phase reflow, or equivalent soldering process must be：

a. Completed within 24 hours

b. Stored at less than 30%RH

(3) Devices require baking before mounting, if (2) a or (2) b is not met

(4) If baking is required, devices must be baked under below conditions

12 hours at 60℃±3℃

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● OPTICAL CHATACTERISTIC CURVES

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=240hrs	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-705：1051 MIL-STD-883：1010 JIS C 7021 ：A-4	-35℃-+25℃-+85℃-+25℃ 60min-20min- 60min-20min Test Time=5 cycle	0/20
	Thermal Shock	MIL-STD-202：107D MIL-STD-705：1051 MIL-STD-883：1011	-35℃±5℃~+85℃±5℃ 20min 20min Test Time=10 cycle	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.