



CHIP LED LAMPS GENERAL INFORMATION

QUALITY CONTROL AND ASSURANCE

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 $I_f = 20\text{mA}$ $T_a =$ Under room temperature Test time = 1,000hrs	0/20
	High Temperature High Humidity Storage	MIL-STD-202 : 103B JIS C 7021 : B-11	$T_a = +65 \pm 5$ RH = 90 % - 95 % Test time = 1,000hrs	0/20
	High Temperature Storage	MIL-STD-883 : 1008 JIS C 7021 : B-10	High $T_a = +85 \pm 5$ Test time = 1,000hrs	0/20
	Low Temperature Storage	JIS-C-7021 : B-12	Low $T_a = -35 \pm 5$ 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 , witgin 2 minutes. Operation heating: 235 (Max.), within 10 seconds. (Max)	0/20

JUDGMENT CRITERIA OF FAILURE FOR THE RELIABILITY

Measuring items	Symbol	Measuring conditions	Judgement criteria for failure
Forward voltage	V_F (V)	$I_f = 20\text{mA}$	Over $U \times 1.2$
Reverse current	I_r (μA)	$V_r = 5\text{V}$	Over $U \times 2$
Luminous intensity	I_v (mcd)	$I_f = 20\text{mA}$	Below $S \times 0.5$

- 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

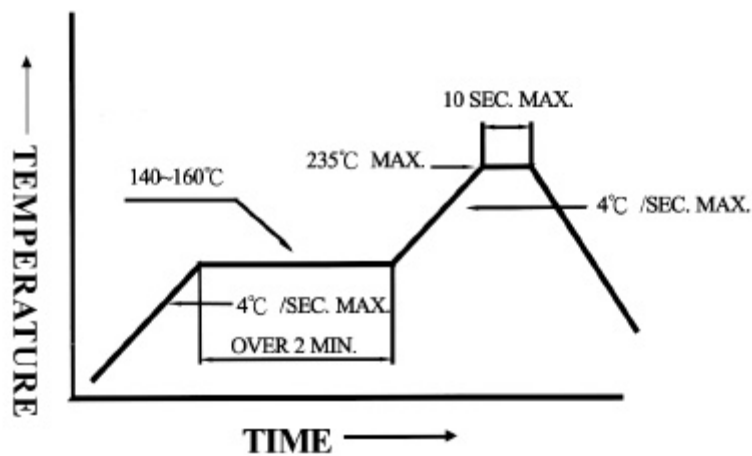
The temperature of the iron tip should not be higher than 300 (572) and Soldering within 3 seconds per solder-land is to be observed.

- Reflow Soldering

Preheating: 140 160 ±5 , within 2 minutes.

Operatin heating: 235 (MAX.) within 10 seconds. (Max)

Gradual Cooling (Avoid quenching).

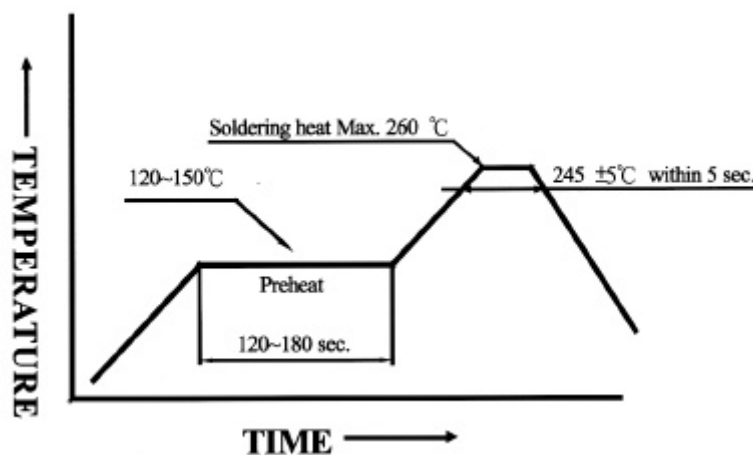


- DIP soldering (Wave Soldering)

Preheating : 120 150 , within 120 180 sec.

Operation heating : 245 ±5 within 5 sec. 260 (Max)

Gradual Cooling (Avoid quenching).





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2. Notes for designing :

Care must be taken to provide the current limiting resistor in the circuit so as to drive the LED within the rated figures.

Also, caution should be taken not to overload with instantaneous voltage at 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.

3. Storage :

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 infrared 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

4. Package of Products :

Products are packed in one bag of 3000 pcs (one taping reel) and a label is attached on each bag.



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ABSOLUTE MAXIMUM RATINGS

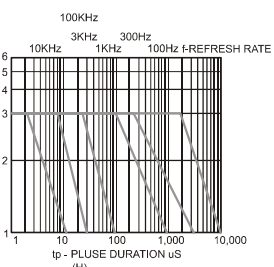
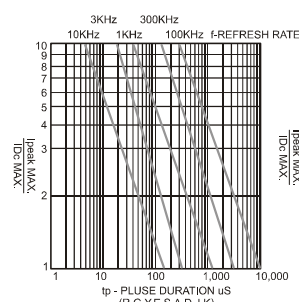
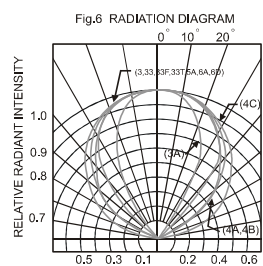
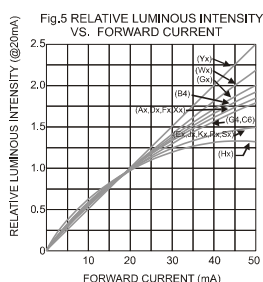
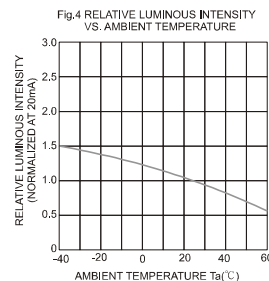
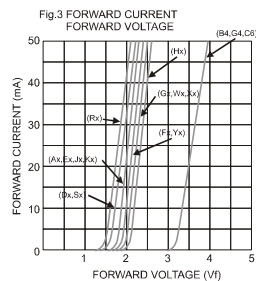
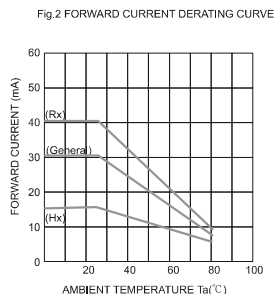
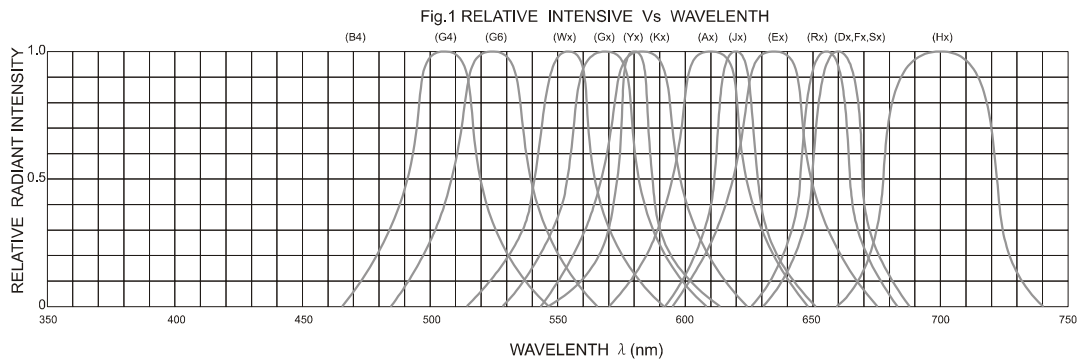
1. Test Condition For Each Parameter:

Parameter	Symbol	Unit	Test Condition
Reverse Voltage	V_R	V	$I_R = 100\mu A$
Reverse Current	I_R	μA	$V_R = 5V$
Forward Voltage	V_F	V	$I_F = 20mA$
Luminous Intensity	I_V	mcd	$I_F = 20mA$
Viewing Angle	$2\theta 1/2$	Degree	$I_F = 20mA$
Spectral Line Half-Width	λ	nm	$I_F = 20mA$
Power Dissipation	P_D	mw	$I_F = 20mA$
Peak Forward Current	I_{FP}	mA	Duty 1/10, Pulse width = 0.1ms

2. Absolute Maximum Ratings :

Reverse Voltage	5.0 Volt
Reverse Current ($V_R = 5V$)	100 μA
Operating Temperature Range	-25 +80
Storage Temperature Range	-30 +85

TYPICAL ELECTIEICAL-OPTICAL CHARACTERISTICS CURVES

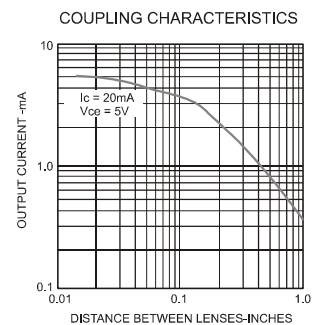
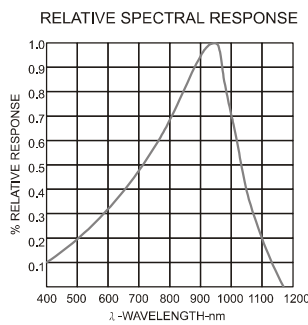
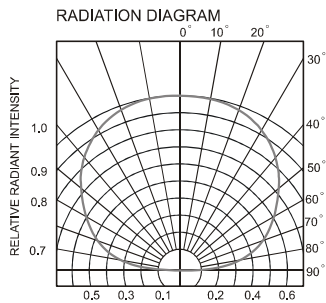
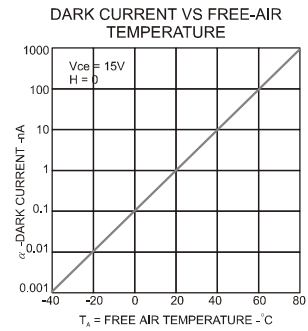
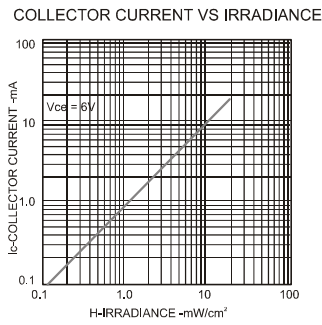
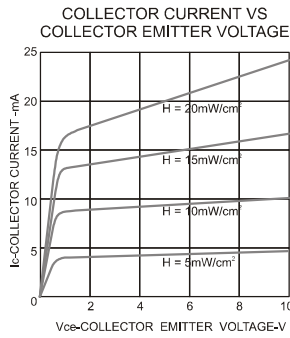




SELECTION GUIDE TO INFRARED SERIES

TYPICAL ELECTIEICAL-OPTOCAL CHARACTERISTICS CURVES

Photo transistors Series:



TYPICAL ELECTIEICAL-OPTICAL CHARACTERISTICS CURVES

Photo diodes Series

