HOW TO USE LED

●FORMING:

1. Please do not form the LED after soldering. If forming is necessary, it must be done before soldering.
2. Any unsuitable stress applied to the epoxy may break bonding wires in LED.

●SOLDERING:

1. Soldering Bath -- 260℃ ± 5℃ within 5 seconds: Soldering Iron - Under 30W within 5 seconds. (1.6mm from epoxy body)
2. Do not apply any force or mechanical stress onto the leads or epoxy body during soldering heat is remained.
3. If soldering one line of LED on a P.C. board by using a soldering iron, don t solder both the leads of the LED at same time.

●CLEANING:

1. Use Alcohol, Freon TE or Chlorosen to clean LED at normal temperature for less than 1 minute.
2. Do not use unspecified chemical liquid because it may cause crack or haze on the surface of the epoxy body.

●PREVENTING OVER CURRENT:

1. In order to operate LED in stable condition, please put protective resistors in series.
2. Resistor value can be determined by the formula

$R = \frac{V_S - V_F}{I_F}$ WHERE:

V_S = Source Voltage
V_F = Forward Voltage of LED
I_F = Recommended Current of LED (10-20mA)

●BRIGHTNESS:

1. For the purpose of obtaining uniform brightness, LEDs shall be kept at the same current.
2. It is useful for uniform brightness if you use larger source voltage and protective resistor.

QUALITY CONTROL AND ASSURANCE

●SAMPLING PLAN

U.S.Ministry of defense MIL-STD-105D level II(single sampling plans)

●INSPECTION ITEMS AND CRITERIONS FOR JUDGEMENTS

"Measuring Methods for light Emitting Diodes(No.11830)"and "Light Emitting Diodes(No.11829)"
Stipulated by ministry of economical affairs of R.O.C. and by reference to Q.C. standards prevailing in prominent LED plants worldwide.

●RELIABILITY TESTS

"General Provisions for Environmental Tests of CNS-Categorized Electronic Parts", 3623-3634, 5637, 11233~11238, and U.S.Ministry of National Defense MIL-STD-750 Specifications.

TEST	CONDITIONS
THERMAL SHOCK TEST	LED placed in a chamber (-35℃) for 20 minutes, temperature increased instantaneously to +85℃ for 20 minutes. The duration of the test shall be for 10 complete cycles.(MIL-STD-202:107D)
HUMIDITY TEST	LED placed in a humidity chamber which is maintained at 65℃, RH95% . The duration of the test is for 96 hours. (MIL-STD-202:103D)
LIFE TEST	LED connected to a source of power and charged with 20mA at room temperature (25℃) for 1000 hours. (MIL-STD-750:1026)
SOLDERABILITY TEST	The pins of LED (1.6mm from body) dipped into tin which is maintained at 260℃±5℃. The duration of the test is for 5 seconds.(MIL-STD-202:208D)
VIBRATION TEST	LED placed on a vibrator which is maintained at 10-55-10 Hz/minute. 0.82 mm amplitude. The duration of the test is for 30 minutes.
PACKING TEST	LED packed in a corrugated fiberboard box and fallen freely on 6 faces at a diagonal angle to the ground. The altitude of the fall will be in the range of 229 - 609 mm considering of the packed product.

THE MEASURING TERMS AFTER TEST AND FAILURE CRITERIA AS FOLLOWS:

MEASURE TERMS	FAILURE CRITERIA
LUMINOUS INTENSITY(I_V)	LOWER STANDARD LIMIT x 0.5
FORWARD VOLTAGE (V_F)	UPPER STANDARD LIMIT x 1.2
REVERSE CURRENT(I_R)	UPPER STANDARD LIMIT x 2.0