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LED ARRAY



Lead-Free Parts

**LA190B/DBK-2-PF**

**DATA SHEET**

DOC. NO : QW0905-LA190B/DBK-2-PF

REV. : A

DATE : 11 - Aug. - 2009





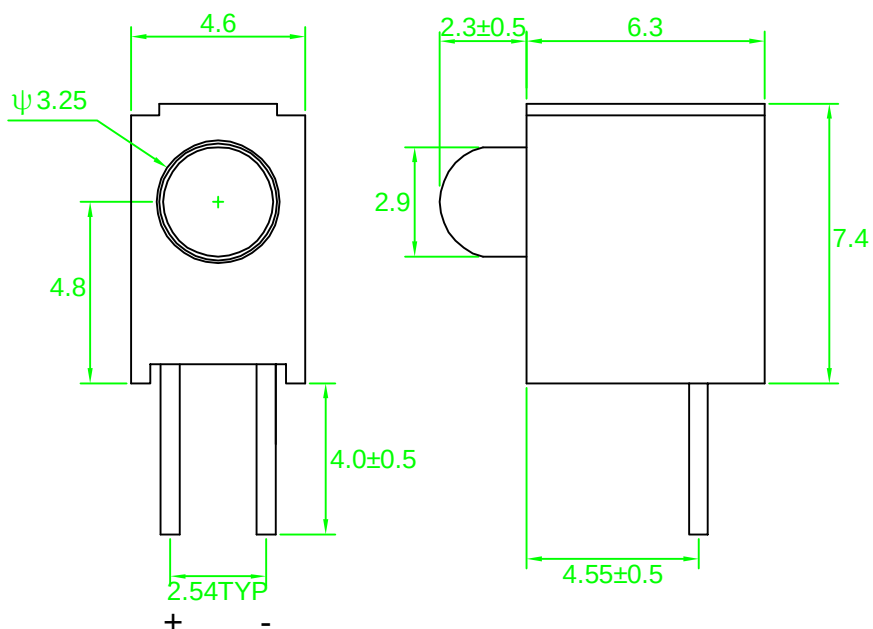
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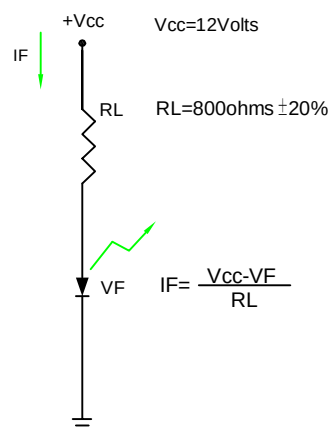
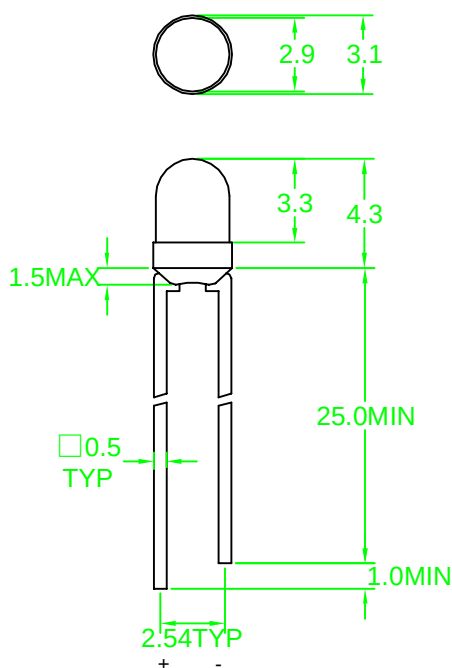
PART NO. LA190B/DBK-2-PF

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## Package Dimensions



## LDBK2643/HV12-1



Note : 1.All dimension are in millimeter tolerance is  $\pm 0.25\text{mm}$  unless otherwise noted.  
2.Specifications are subject to change without notice.



## Absolute Maximum Ratings at Ta=25 °C

| Parameter             | Symbol           | Ratings    | UNIT |
|-----------------------|------------------|------------|------|
|                       |                  | DBK        |      |
| Forward voltage       | V <sub>F</sub>   | 12         | V    |
| Reverse voltage       | V <sub>r</sub>   | 15         | V    |
| Operating Temperature | T <sub>opr</sub> | -20 ~ +80  | °C   |
| Storage Temperature   | T <sub>stg</sub> | -30 ~ +100 | °C   |

## Typical Electrical &amp; Optical Characteristics (Ta=25 °C)

| PART NO         | MATERIAL  | COLOR   |             | Dominant wave length<br>λ D nm | Spectral halfwidth<br>△ λ nm | Forward current (mA)<br>@ 12V |      | Luminous intensity (mcd)<br>@12V |      | Reverse current (uA)<br>VR=15V | Viewing angle<br>2 θ 1/2 (deg) |
|-----------------|-----------|---------|-------------|--------------------------------|------------------------------|-------------------------------|------|----------------------------------|------|--------------------------------|--------------------------------|
|                 |           | Emitted | Lens        |                                |                              | Min.                          | Max. | Min.                             | Typ. | Max.                           |                                |
| LA190B/DBK-2-PF | InGaN/GaN | Blue    | Water Clear | 470                            | 30                           | 8.0                           | 14   | 350                              | 700  | 100                            | 30                             |

Note : 1.The forward voltage data did not including  $\pm 0.1V$  testing tolerance.  
2. The luminous intensity data did not including  $\pm 15\%$  testing tolerance.



## Typical Electro-Optical Characteristics Curve

### DBK CHIP

Fig.1 Forward current vs. Forward Voltage

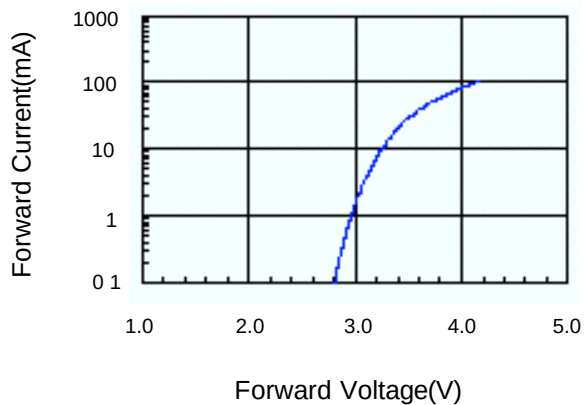


Fig.2 Relative Intensity vs. Forward Current

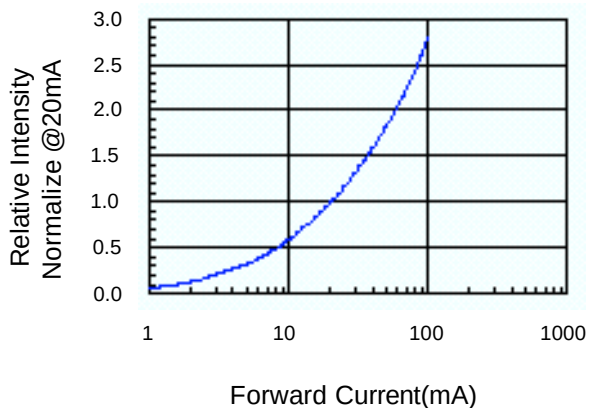


Fig.3 Forward Voltage vs. Temperature

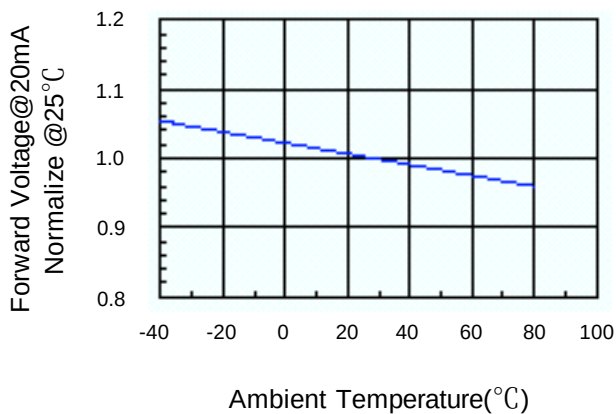


Fig.4 Relative Intensity vs. Temperature

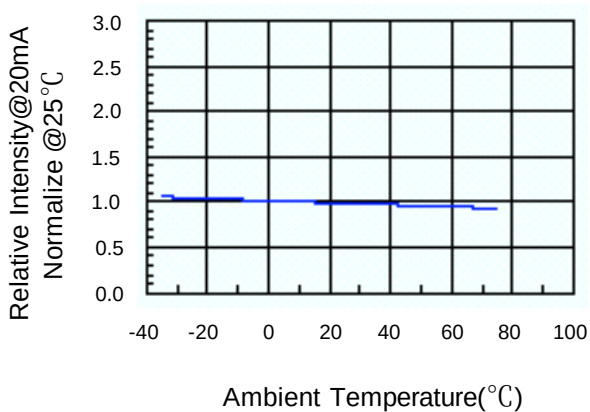
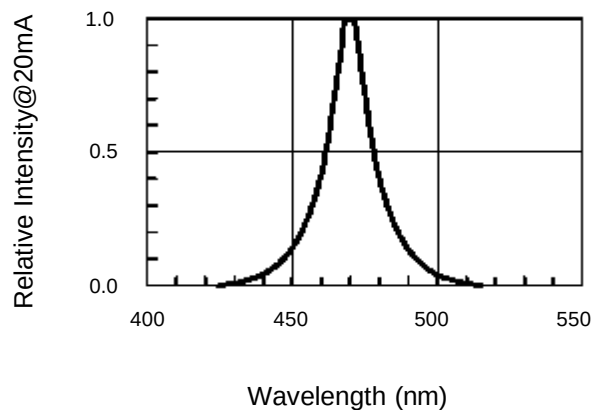


Fig.5 Relative Intensity vs. Wavelength



**Soldering Condition(Pb-Free)****1.Iron:**

Soldering Iron:30W Max

Temperature 350° C Max

Soldering Time:3 Seconds Max(One time only)

Distance:2mm Min(From solder joint to body)

**2.Wave Soldering Profile**

Dip Soldering

Preheat: 120° C Max

Preheat time: 60seconds Max

Ramp-up

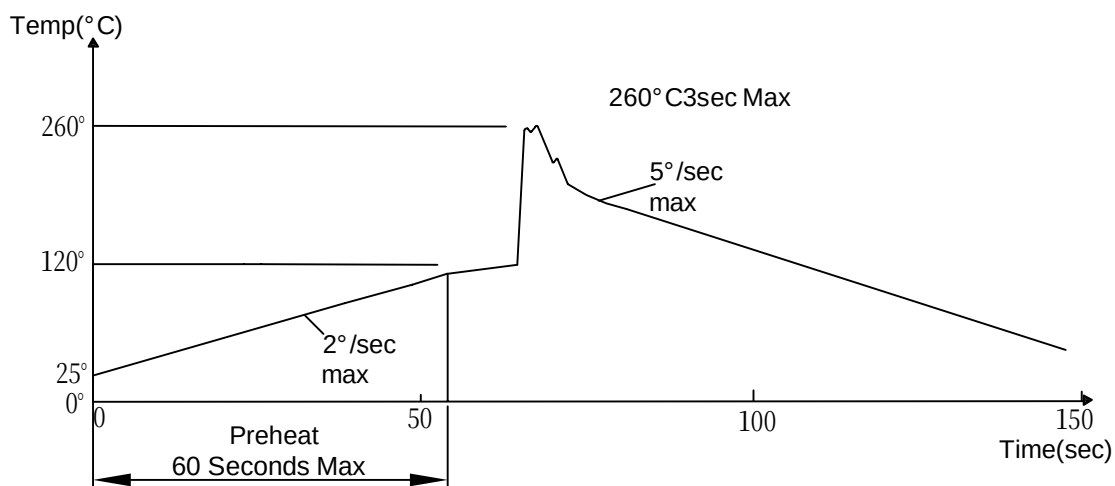
2° C/sec(max)

Ramp-Down:-5° C/sec(max)

Solder Bath:260° C Max

Dipping Time:3 seconds Max

Distance:2mm Min(From solder joint to body)



Note: 1.Wave solder should not be made more than one time.

2.You can just only select one of the soldering conditions as above.

## Reliability Test:

| Test Item                           | Test Condition                                                         | Description                                                                                                                                                             | Reference Standard                                                             |
|-------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Operating Life Test                 | 1.Under Room Temperature<br>2.If=20mA<br>3.t=1000 hrs (-24hrs, +72hrs) | This test is conducted for the purpose of determining the resistance of a part in electrical and thermal stressed.                                                      | MIL-STD-750: 1026<br>MIL-STD-883: 1005<br>JIS C 7021: B-1                      |
| High Temperature Storage Test       | 1.Ta=105 °C±5°C<br>2.t=1000 hrs (-24hrs, +72hrs)                       | The purpose of this is the resistance of the device which is laid under condition of high temperature for hours.                                                        | MIL-STD-883:1008<br>JIS C 7021: B-10                                           |
| Low Temperature Storage Test        | 1.Ta=-40 °C±5°C<br>2.t=1000 hrs (-24hrs, +72hrs)                       | The purpose of this is the resistance of the device which is laid under condition of low temperature for hours.                                                         | JIS C 7021: B-12                                                               |
| High Temperature High Humidity Test | 1.Ta=65 °C±5°C<br>2.RH=90%~95%<br>3.t=240hrs ±2hrs                     | The purpose of this test is the resistance of the device under tropical for hours.                                                                                      | MIL-STD-202:103B<br>JIS C 7021: B-11                                           |
| Thermal Shock Test                  | 1.Ta=105 °C±5°C & -40 °C±5°C (10min) (10min)<br>2.total 10 cycles      | The purpose of this is the resistance of the device to sudden extreme changes in high and low temperature.                                                              | MIL-STD-202: 107D<br>MIL-STD-750: 1051<br>MIL-STD-883: 1011                    |
| Solder Resistance Test              | 1.T.Sol=260 °C±5°C<br>2.Dwell time= 10 ±1sec.                          | This test intended to determine the thermal characteristic resistance of the device to sudden exposures at extreme changes in temperature when soldering the lead wire. | MIL-STD-202: 210A<br>MIL-STD-750: 2031<br>JIS C 7021: A-1                      |
| Solderability Test                  | 1.T.Sol=230 °C±5°C<br>2.Dwell time=5 ±1sec                             | This test intended to see soldering well performed or not.                                                                                                              | MIL-STD-202: 208D<br>MIL-STD-750: 2026<br>MIL-STD-883: 2003<br>JIS C 7021: A-2 |