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SINGLE DIGIT LED DISPLAY (2.3 Inch)

LSD2325/61-XX

DATA SHEET

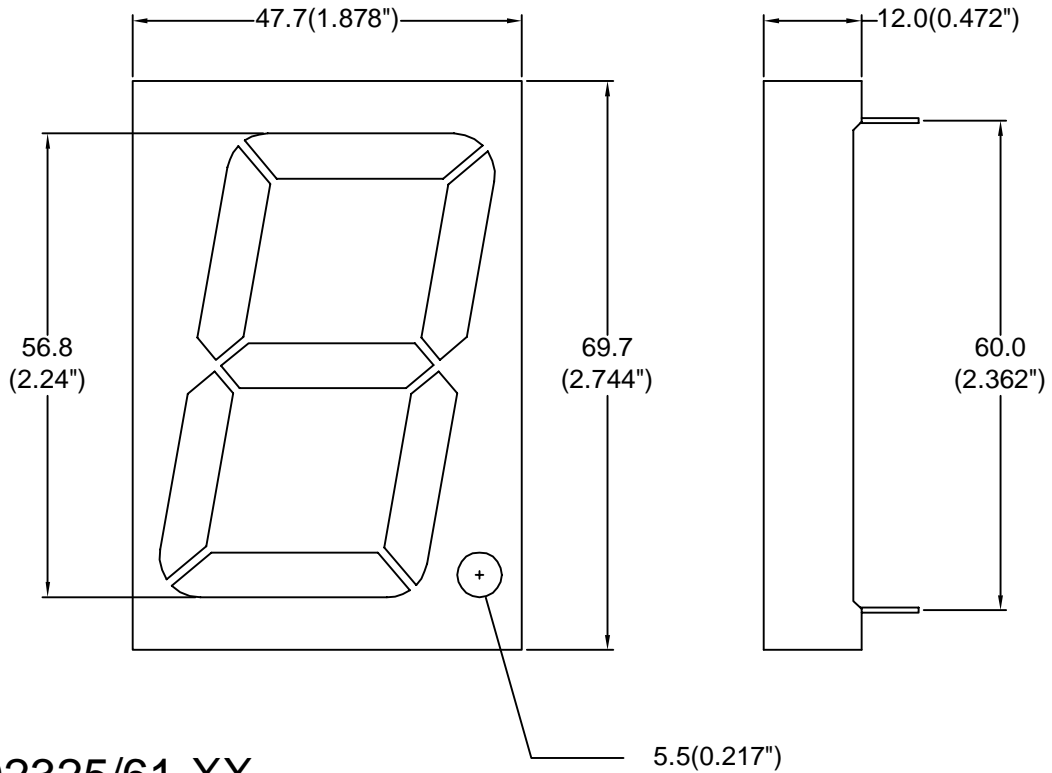
DOC. NO : QW0905-LSD2325/61-XX

REV. : A

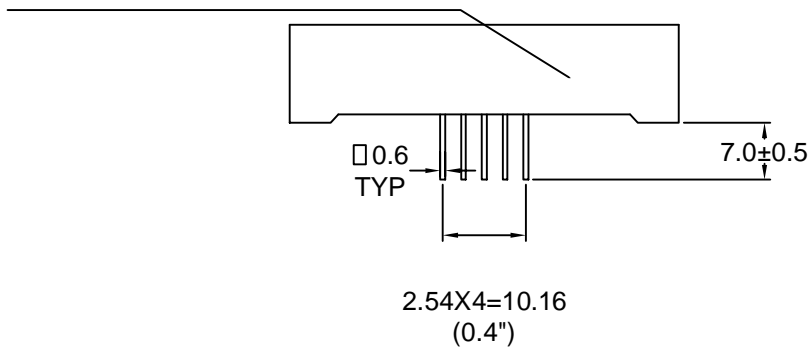
DATE : 17 - Mar. - 2005



Package Dimensions



LSD2325/61-XX
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PIN NO.1 →

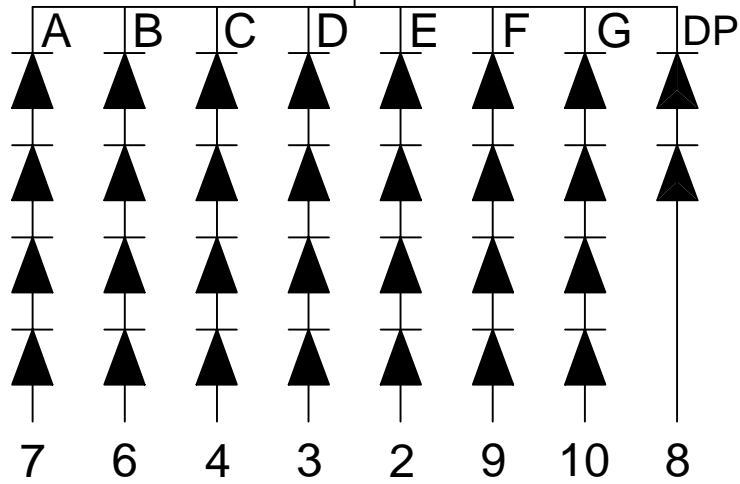
Note : 1.All dimension are in millimeters and (Inch) tolerance is ±0.25(0.01") unless otherwise noted.
 2.Specifications are subject to change without notice.



Internal Circuit Diagram

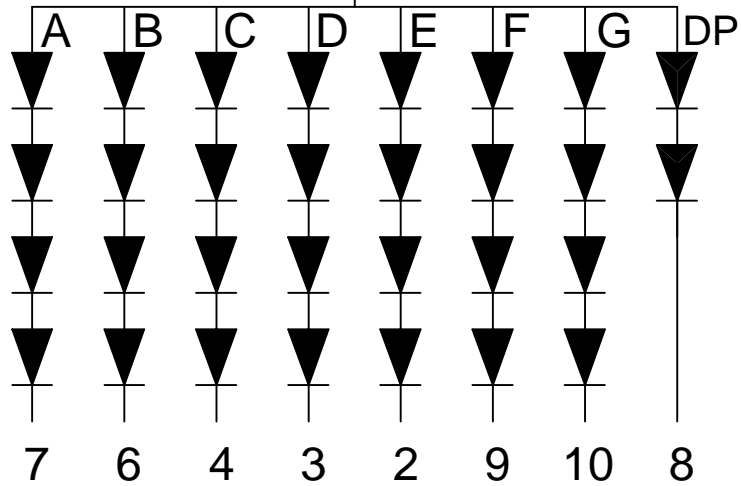
LSD23251-XX

1,5



LSD23261-XX

1,5



**Electrical Connection**

| PIN NO. | LSD23251-XX | PIN NO. | LSD23261-XX |
|---------|----------------|---------|--------------|
| 1 | Common Cathode | 1 | Common Anode |
| 2 | Anode E | 2 | Cathode E |
| 3 | Anode D | 3 | Cathode D |
| 4 | Anode C | 4 | Cathode C |
| 5 | Common Cathode | 5 | Common Anode |
| 6 | Anode B | 6 | Cathode B |
| 7 | Anode A | 7 | Cathode A |
| 8 | Anode DP | 8 | Cathode DP |
| 9 | Anode F | 9 | Cathode F |
| 10 | Anode G | 10 | Cathode G |



Absolute Maximum Ratings at Ta=25

| Parameter | Symbol | Ratings | UNIT |
|---|--------|-----------|------|
| | | H | |
| Forward Current Per Chip | IF | 15 | mA |
| Peak Forward Current Per Chip (Duty 1/10,0.1ms Pulse Width) | IFP | 60 | mA |
| Power Dissipation Per Chip | PD | 40 | mW |
| Reverse Current Per Any Chip | Ir | 10 | μA |
| Operating Temperature | Topr | -25 ~ +85 | |
| Storage Temperature | Tstg | -25 ~ +85 | |
| Solder Temperature 1-16 Inch Below Seating Plane For 3 Seconds At 260 | | | |

Part Selection And Application Information(Ratings at 25)

| PART NO | CHIP | | common cathode or anode | P (nm) | (nm) | Electrical | | | | | IV-M |
|-------------|----------|---------|-------------------------|--------|------|------------|------|------|---------|------|------|
| | Material | Emitted | | | | Vf(v) | | | Iv(mcd) | | |
| | | | | | | Min. | Typ. | Max. | Min. | Typ. | |
| LSD23251-XX | GaP | Red | Common Cathode | 697 | 90 | 6.8 | 8.4 | 10.4 | 4.0 | 7.2 | 2:1 |
| LSD23261-XX | | | Common Anode | | | | | | | | |

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

**Test Condition For Each Parameter**

| Parameter | Symbol | Unit | Test Condition |
|-----------------------------------|----------------|------|----------------------|
| Forward Voltage Per Chip | V _f | volt | I _f =20mA |
| Luminous Intensity Per Chip | I _v | mcd | I _f =10mA |
| Peak Wavelength | P | nm | I _f =20mA |
| Spectral Line Half-Width | | nm | I _f =20mA |
| Reverse Current Any Chip | I _r | μ A | V _r =5V |
| Luminous Intensity Matching Ratio | IV-M | | |



Typical Electro-Optical Characteristics Curve

H CHIP

Fig.1 Forward current vs. Forward Voltage

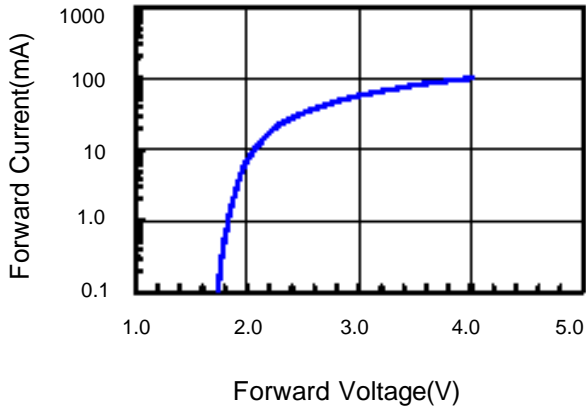


Fig.2 Relative Intensity vs. Forward Current

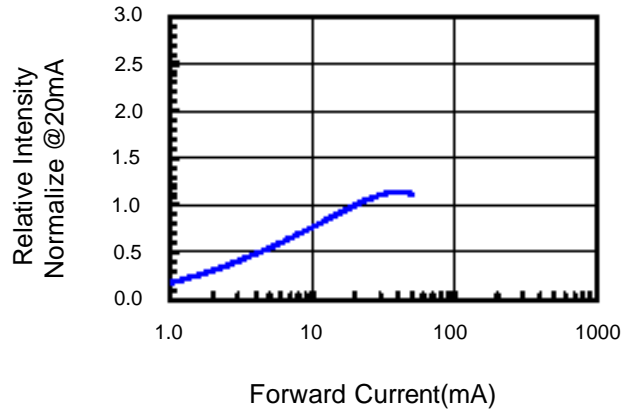


Fig.3 Forward Voltage vs. Temperature

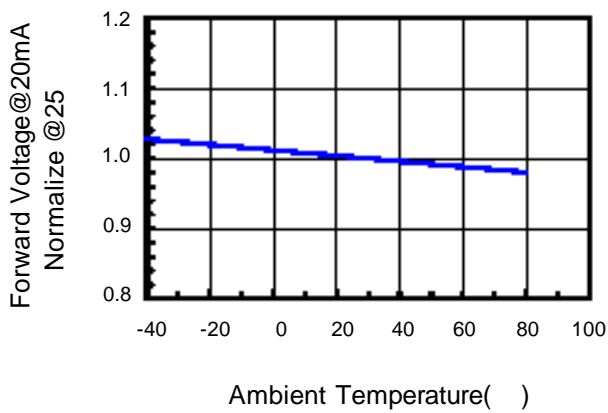


Fig.4 Relative Intensity vs. Temperature

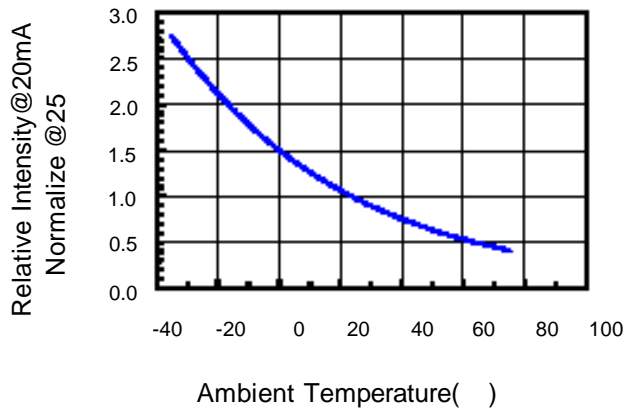
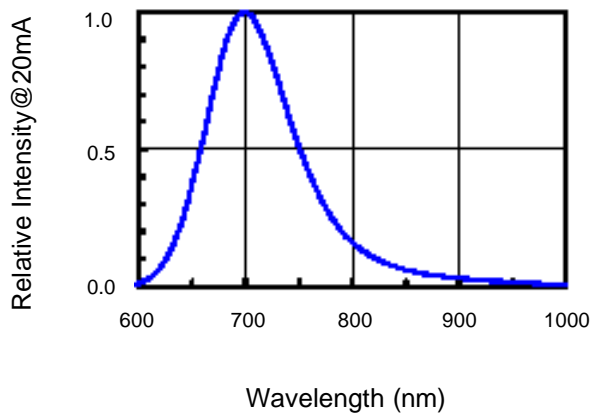


Fig.5 Relative Intensity vs. Wavelength





Reliability Test:

| Test Item | Test Condition | Description | Reference Standard |
|-------------------------------------|--|---|--|
| Operating Life Test | 1.Under Room Temperature 2.If=10mA 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 MIL-STD-883: 1005 JIS C 7021: B-1 |
| High Temperature Storage Test | 1.Ta=105 ±5 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 JIS C 7021: B-10 |
| Low Temperature Storage Test | 1.Ta=-40 ±5 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 ±5 2.RH=90%~95% 3.t=240hrs ±2hrs | The purpose of this test is the resistance of the device under tropical for hours. | MIL-STD-202:103B JIS C 7021: B-11 |
| Thermal Shock Test | 1.Ta=105 ±5 & -40 ±5 (10min) (10min) 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 MIL-STD-750: 1051 MIL-STD-883: 1011 |
| Solder Resistance Test | 1.T.Sol=260 ±5 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 MIL-STD-750: 2031 JIS C 7021: A-1 |
| Solderability Test | 1.T.Sol=230 ±5 2.Dwell time=5 ±1sec | This test intended to see soldering well performed or not. | MIL-STD-202: 208D MIL-STD-750: 2026 MIL-STD-883: 2003 JIS C 7021: A-2 |