



LED Display Product Data Sheet LTS-3361HR

Spec No.: DS30-2010-0072

Effective Date: 06/08/2011

Revision: A

LITE-ON DCC

RELEASE

BNS-OD-FC001/A4

LED DISPLAY**LTS-3361HR**
DATASHEET

| <u>Rev</u> | <u>Description</u> | <u>By</u> |
|--|---|--|
| 01 | ORIGINAL (Refer to contour drawing Revision (-)) | <u>KITTISAK B.</u> <u>March 12/2010</u> |
| 02 | Put wave soldering profile and reliability test item | <u>KITTISAK B.</u> <u>May 18/2010</u> |
| (Above data for PD and Customer tracking only) | | |
| - | NPPR Received and Upload on OPNC | <u>KITTISAK B.</u> <u>July 29/2010</u> |
| A | Change pin length to 3.0 mm +/- 0.3 mm. Change tolerance of pin length from +/- 0.3 mm. to +/- 0.5 mm. | <u>KITTISAK S.</u> <u>Mar 10/2011</u> <u>KITTISAK S.</u> <u>Mar 22/2011</u> |
| | | |
| | | |
| | | |

SPEC NO. : DS30-2010-0072

DATE : _____

REV. NO. : APAGE NO. : 0 OF 7

FEATURES

- * 0.3 inch (7.62 mm) DIGIT HEIGHT
- * CONTINUOUS UNIFORM SEGMENTS
- * LOW POWER REQUIREMENT
- * EXCELLENT CHARACTERS APPEARANCE
- * HIGH BRIGHTNESS & HIGH CONTRAST
- * WIDE VIEWING ANGLE
- * SOLID STATE RELIABILITY
- * CATEGORIZED FOR LUMINOUS INTENSITY
- * **LEAD-FREE PACKAGE (ACCORDING TO ROHS).**

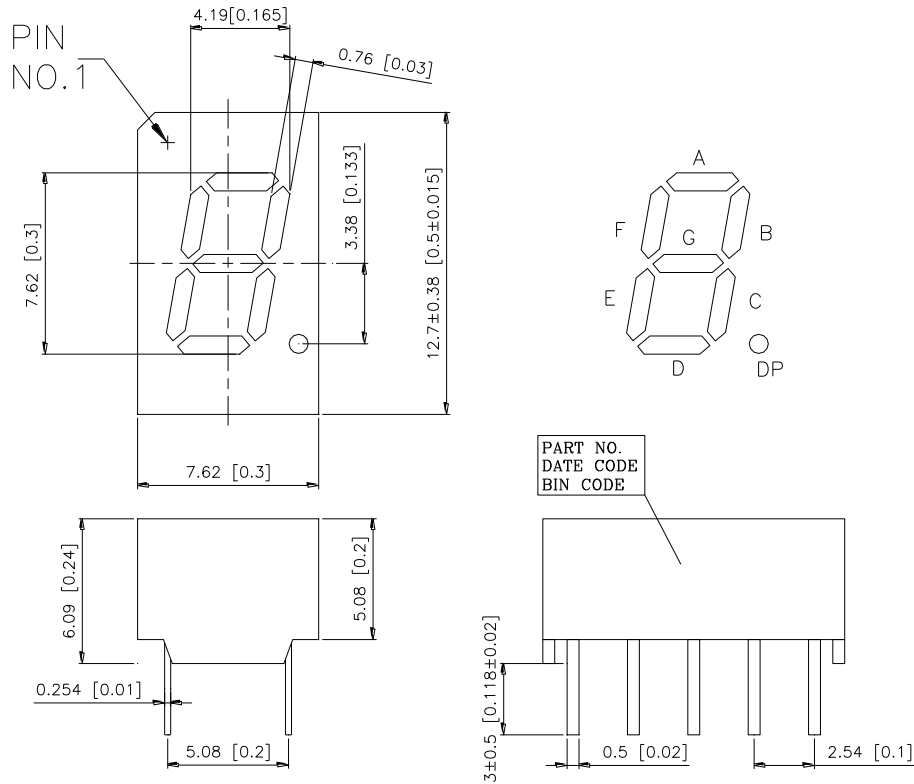
DESCRIPTION

The LTS-3361HR is a 0.3 inch (7.62 mm) height digit display. This device uses HI-EFF. RED LED chips (GaAsP epi on GaP substrate). The display has black face and red segments.

DEVICE

| PART NO. | DESCRIPTION |
|-----------------|--------------------|
| HI-EFF. RED | Common Cathode |
| LTS-3361HR | Rt. Hande Decimal |

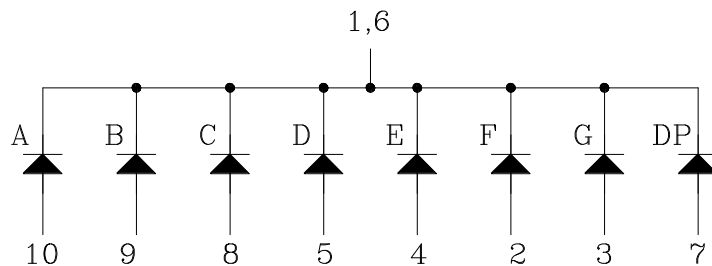
PACKAGE DIMENSIONS



NOTES: 1. All dimensions are in millimeters. Tolerances are ± 0.25 mm (0.01") unless otherwise noted.

2. Pin tip's shift tolerance are ± 0.40 mm
3. Foreign material on segment $\cong 10$ mils
4. Ink contamination (surface) $\cong 20$ mils
5. Bending $\cong 1\%$ of reflector length
6. Bubble in segment $\cong 10$ mils

INTERNAL CIRCUIT DIAGRAM



PIN CONNECTION

| No. | CONNECTION |
|------------|-------------------|
| 1 | COMMON CATHODE |
| 2 | ANODE F |
| 3 | ANODE G |
| 4 | ANODE E |
| 5 | ANODE D |
| 6 | COMMON CATHODE |
| 7 | ANODE DP |
| 8 | ANODE C |
| 9 | ANODE B |
| 10 | ANODE A |

ABSOLUTE MAXIMUM RATING

| PARAMETER | MAXIMUM RATING | UNIT |
|--|---|--------------------|
| Power Dissipation Per Segment | 70 | mW |
| Peak Forward Current Per Segment (Frequency 1Khz, 18% duty cycle) | 100 | mA |
| Continuous Forward Current Per Segment | 25 | mA |
| Forward Current Derating from 25 ⁰ C | 0.28 | mA/ ⁰ C |
| Reverse Voltage Per Segment | 5 | V |
| Operating Temperature Range | -35 ⁰ C to +105 ⁰ C | |
| Storage Temperature Range | -35 ⁰ C to +105 ⁰ C | |
| Soldering Conditions : 1/16 inch below seating plane for 5 seconds at 260 ⁰ C Or of temperature unit (during assembly) not over max. temperature rating above. | | |

ELECTRICAL / OPTICAL CHARACTERISTICS AT Ta=25⁰C

| PARAMETER | SYMBOL | MIN. | TYP. | MAX. | UNIT | TEST CONDITION |
|--|-------------------|------|------|------|------|----------------------|
| Average Luminous Intensity Per Segment | I _v | 200 | 600 | | μcd | I _F =10mA |
| Peak Emission Wavelength | λ _p | | 635 | | nm | I _F =20mA |
| Spectral Line Half-Width | Δλ | | 40 | | nm | I _F =20mA |
| Dominant Wavelength | λ _d | | 623 | | nm | I _F =20mA |
| Forward Voltage Per Segment | V _F | | 2.1 | 2.6 | V | I _F =20mA |
| Reverse Current Per Segment | I _R | | | 100 | μA | V _R =5V |
| Luminous Intensity Matching Ratio | I _v -m | | | 2:1 | | I _F =10mA |

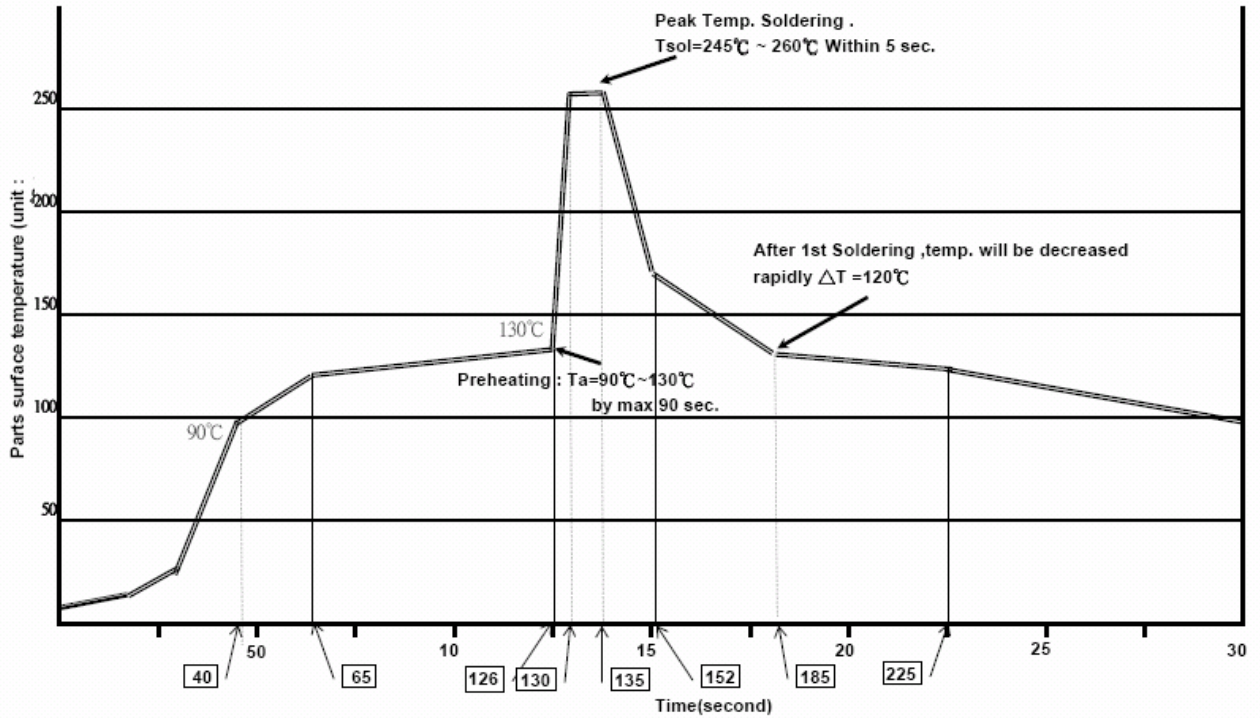
Note: 1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commision Internationale De L'Eclairage) eye-response curve.

2. Cross talk specification ≅ 2.5%



LITE-ON TECHNOLOGY CORPORATION

** Flow(=Wave soldering) condition with temperature for Pb free Soldering



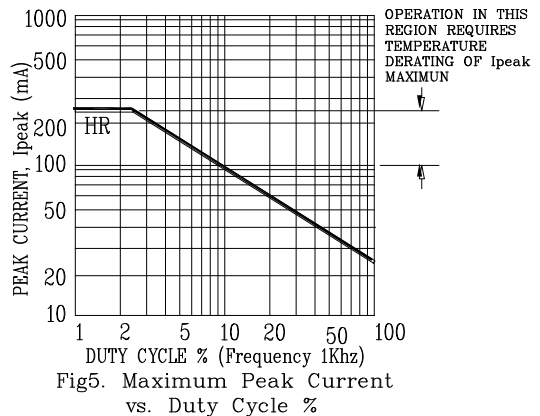
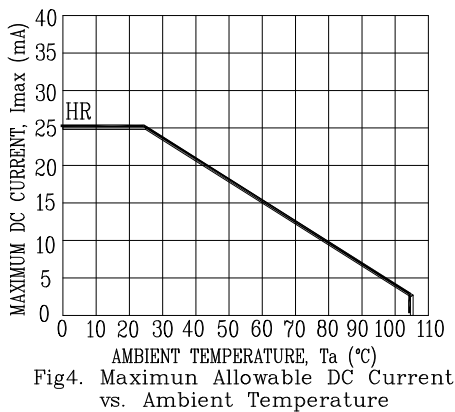
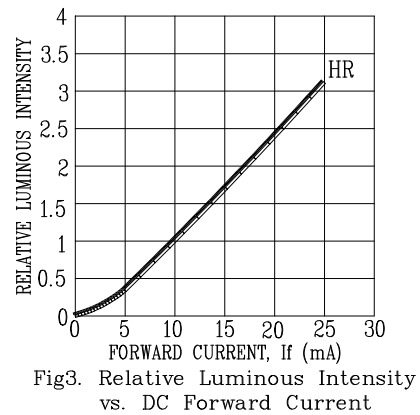
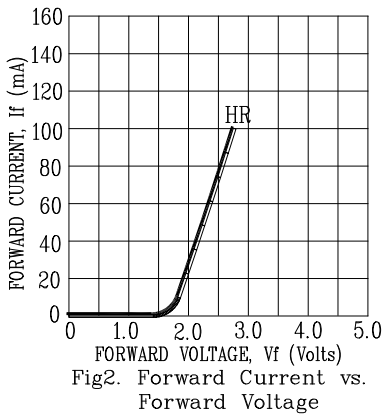
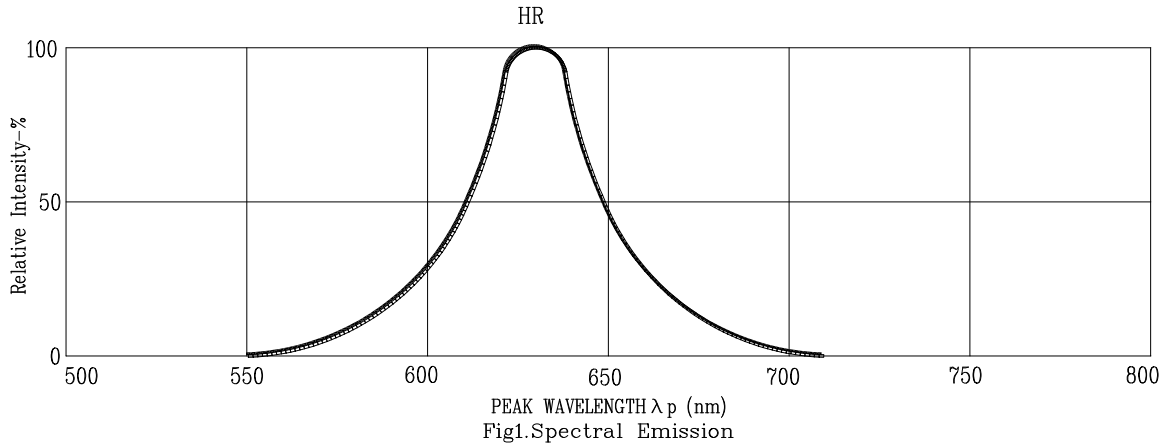
RELIABILITY TEST FOR N/D

| CALSSIFICATION | TEST ITEM | TEST CONDITION | REFERANCE STANDARD |
|-----------------------|---|---|--|
| ENDURANCE TEST | OPERATION LIFE | Ta= UNDER ROOM TEMPERATURE | MIL-STD-750D : 1026 (1995) |
| | | IF=AS PER DATA SHEET MAXIMUM RATING | MIL-STD-883D : 1005 (1991) |
| | | *TEST TIME= 1000HRS (-24HRS,+72HRS) | JIS C 7021 : B-1 (1982) |
| | HIGH TEMPERATURE | Ta= 65±5℃ | MIL-STD-202F : 103B(1980) |
| | HIGH HUMIDITY | RH= 90 ~ 95% | JIS C 7021 : B-11(1982) |
| | STORAGE | TEST TIME= 240HRS±2HRS | |
| | HIGH TEMPERATURE | Ta= 65±5℃ | JIS C 7021 : B-11(1982) |
| HIGH HUMIDITY | RH= 90 ~ 95% VR=5V | | |
| REVERSE BIAS | TEST TIME= 500HRS (-24HRS,+48HRS) | | |
| HIGH TEMPERATURE | Ta= 85±5℃ | MIL-STD-883D : 1008 (1991) | |
| STORAGE | TEST TIME= 1000HRS (-24HRS,+72HRS) | JIS C 7021 : B-10 (1982) | |
| LOW TEMPERATURE | Ta= -35±5℃ | JIS C 7021 : B-12 (1982) | |
| STORAGE | TEST TIME= 1000HRS (-24HRS,+72HRS) | | |
| ENVIRONMENTAL TEST | TEMPERATURE | 85℃ ~ 25℃ ~ -35℃ ~ 25℃ | MIL-STD-202F : 107D (1980) |
| | CYCLING | 30mins 5mins 30mins 5mins | MIL-STD-750D : 1051(1995) |
| | | 30CYCLES | MIL-STD-883D : 1010 (1991) JIS C 7021 : A-4(1982) |
| | THERMAL SHOCK | 85 ± 5℃ ~ -35℃ ± 5℃ 30mins 30mins 30CYCLES | MIL-STD-202F : 107D(1980) MIL-STD-750D : 1051(1995) MIL-STD-883D : 1011 (1991) |
| SOLDER RESISTANCE | T.sol= 260 ± 5℃ DWELL TIME= 10 ± 1secs | MIL-STD-202F : 210A(1980) MIL-STD-750D : 2031(1995) JIS C 7021 : A-1(1982) | |
| SOLDERABILITY | T.sol= 230 ± 5℃ DWELL TIME= 5 ± 1secs | MIL-STD-202F : 208D(1980) MIL-STD-750D : 2026(1995) MIL-STD-883D : 2003(1991) JIS C 7021 : A-2(1982) | |

* (Check Point : 0th,168th,500th,800th,1000th Hr)

TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)



NOTE: HR=HL - EFF. RED