



**LED DISPLAY**

**LTC-8616KS**

**DATA SHEET**

| <b><u>Item</u></b> | <b><u>Description</u></b> | <b><u>By</u></b> | <b><u>DATE</u></b> |
|--------------------|---------------------------|------------------|--------------------|
| 01                 | RDR Original Spec         | Lucas            | 1/July /2010       |
|                    |                           |                  |                    |
|                    |                           |                  |                    |
|                    |                           |                  |                    |
|                    |                           |                  |                    |
|                    |                           |                  |                    |
|                    |                           |                  |                    |
|                    |                           |                  |                    |

## FEATURES

- \* 0.8-inch (20.32-mm ) DIGIT HEIGHT
- \* CONTINUOUS UNIFORM SEGMENTS
- \* LOW POWER REQUIREMENT
- \* EXCELLENT CHARACTERS APPEARANCE
- \* HIGH BRIGHTNESS AND HIGH CONTRAST
- \* WIDE VIEWING ANGLE
- \* SOLID STATE RELIABILITY
- \* CATEGORIZED FOR LUMINOUS INTENSITY
- \* **LEAD-FREE PACKAGE (ACCORDING TO RoHS)**

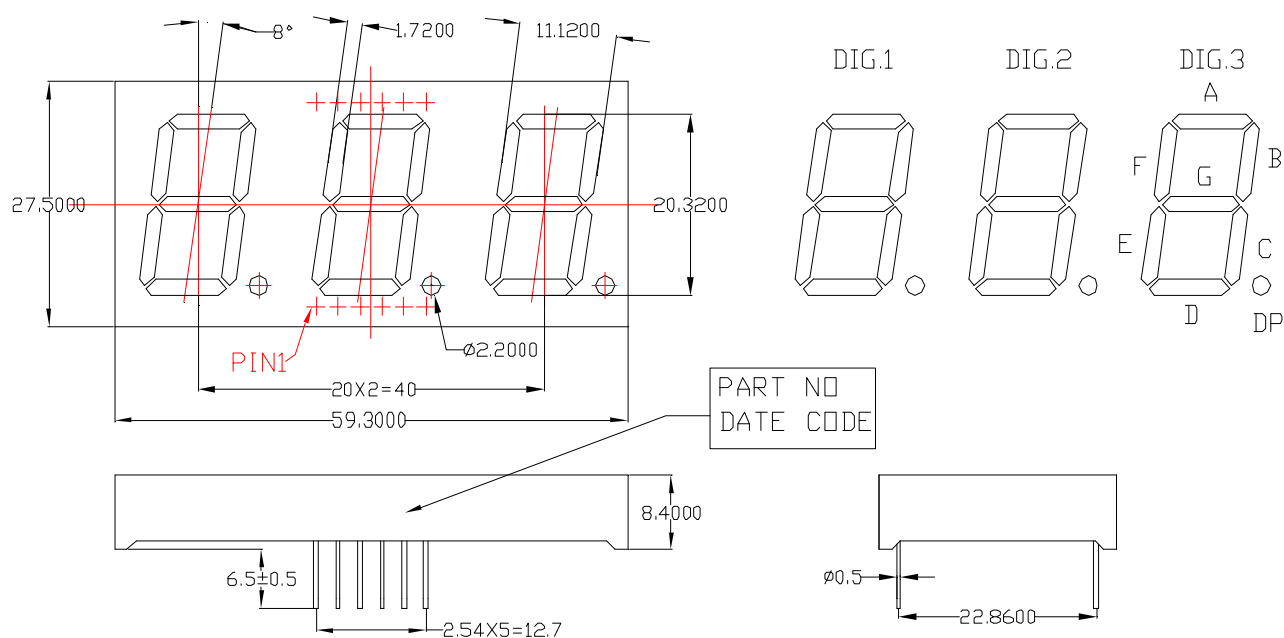
## DESCRIPTION

The LTC-8616KS is a 0.8-inch (20.32-mm) digit height triple digit display. The device is utilizes AlInGaP Yellow LED chips, which are made from AlInGaP on a non-transparent GaAs substrate, and has a black face and white segments.

## DEVICE

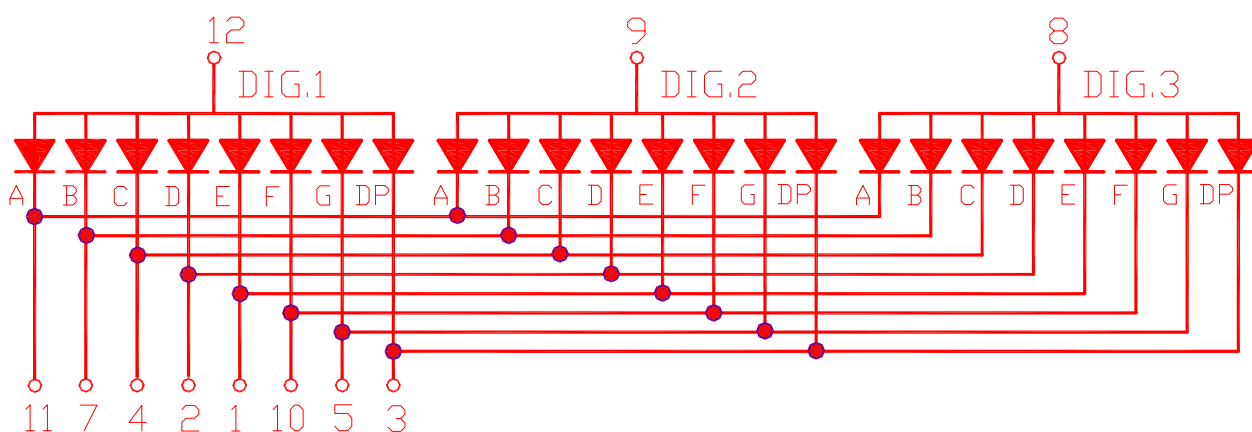
| PART NO.       | DESCRIPTION                      |
|----------------|----------------------------------|
| AlInGaP Yellow | Common Anode<br>Rt. Hand Decimal |
| LTC-8616KS     |                                  |

## PACKAGE DIMENSIONS



NOTES: All dimensions are in millimeters. Tolerances are  $\pm 0.25\text{mm}$  (0.01") unless otherwise noted.

## INTERNAL CIRCUIT DIAGRAM



**PIN CONNECTION**

| <b>No</b> | <b>CONNECTION</b>  |
|-----------|--------------------|
| 1         | CATHODE E          |
| 2         | CATHODE D          |
| 3         | CATHODE DP         |
| 4         | CATHODE C          |
| 5         | CATHODE G          |
| 6         | NO CONNECTION      |
| 7         | CATHODE B          |
| 8         | COMMON ANODE DIG.3 |
| 9         | COMMON ANODE DIG.2 |
| 10        | CATHODE F          |
| 11        | CATHODE A          |
| 12        | COMMON ANODE DIG.1 |

**ABSOLUTE MAXIMUM RATING AT Ta=25°C**

| PARAMETER                                                                                                                                                   | MAXIMUM RATING  | UNIT  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------|
| Power Dissipation Per Segment                                                                                                                               | 70              | mW    |
| Peak Forward Current Per Segment<br>( 1/10 Duty Cycle, 0.1ms Pulse Width )                                                                                  | 60              | mA    |
| Continuous Forward Current Per Segment                                                                                                                      | 25              | mA    |
| Derating Linear From 25°C Per Segment                                                                                                                       | 0.28            | mA/°C |
| Operating Temperature Range                                                                                                                                 | -35°C to +105°C |       |
| Storage Temperature Range                                                                                                                                   | -35°C to +105°C |       |
| Solder Temperature: 1/16inch below seating plane for 5 seconds at 260°C<br>or temperature of unit (during assembly) not over max. temperature rating above. |                 |       |

**ELECTRICAL / OPTICAL CHARACTERISTICS AT Ta=25°C**

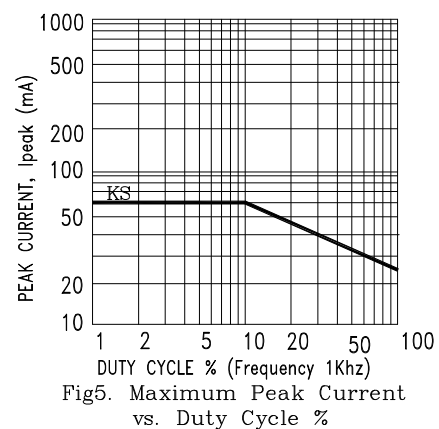
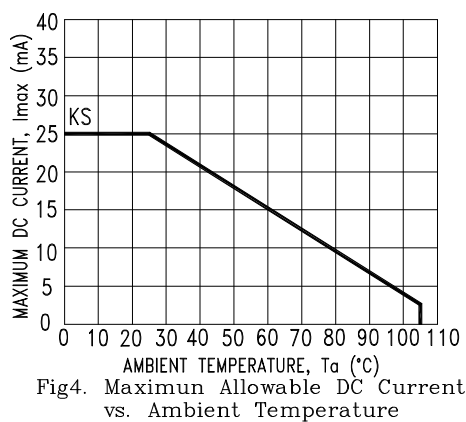
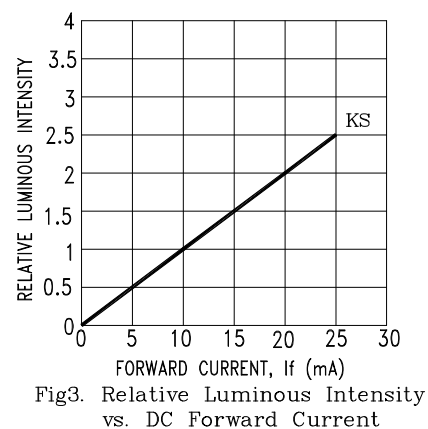
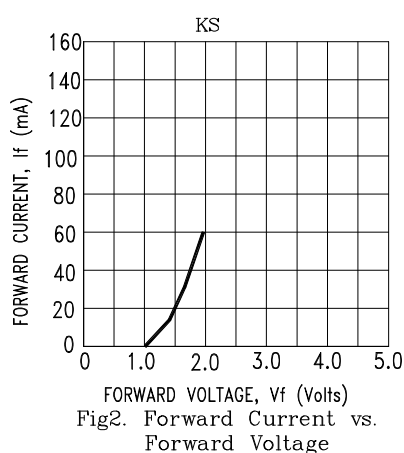
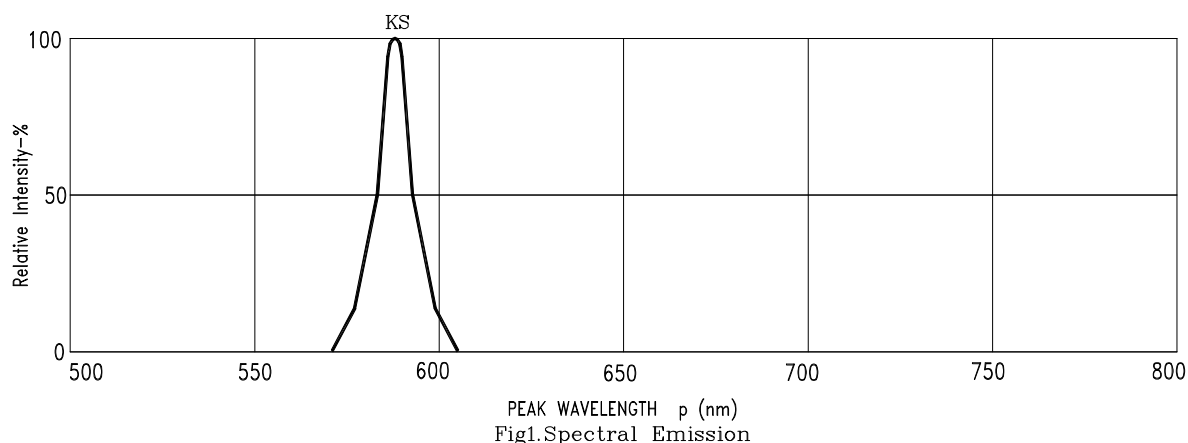
| PARAMETER                                                | SYMBOL            | MIN.          | TYP.           | MAX. | UNIT | TEST CONDITION                               |
|----------------------------------------------------------|-------------------|---------------|----------------|------|------|----------------------------------------------|
| Average Luminous Intensity                               | I <sub>v</sub>    | 8600<br>13700 | 18200<br>64200 |      | μcd  | I <sub>F</sub> =10mA<br>I <sub>F</sub> =20mA |
| Peak Emission Wavelength                                 | λ <sub>p</sub>    |               | 588            |      | nm   | I <sub>F</sub> =20mA                         |
| Spectral Line Half-Width                                 | Δλ                |               | 15             |      | nm   | I <sub>F</sub> =20mA                         |
| Dominant Wavelength                                      | λ <sub>d</sub>    |               | 587            |      | nm   | I <sub>F</sub> =20mA                         |
| Forward Voltage Per Segment                              | V <sub>F</sub>    |               | 2.05           | 2.6  | V    | I <sub>F</sub> =20mA                         |
| Reverse Current Per Segment                              | I <sub>R</sub>    |               |                | 100  | μA   | V <sub>R</sub> =5V                           |
| Luminous Intensity Matching<br>Ratio(Similar Light Area) | I <sub>v</sub> -m |               |                | 2:1  |      | I <sub>F</sub> =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. Reverse voltage is only for IR test. It can not continue to operate at this situation.

## TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)



NOTE : KS=AlInGaP YELLOW