LITEON®
OPTOELECTRONICS

LED Display

Product Data Sheet

LTC-46C5S

Spec No.: DS30-2013-0059

Effective Date: 10/03/2015

Revision: C

LITE-ON DCC

RELEASE

BNS-OD-FC001/A4

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LED DISPLAY

LTC-46C5S

Rev	Description	By	Date
01	Preliminary Spec.	Reo Lin	03/14/2013
Above data for PD and Customer tracking only			
-	NPPR Received and Upload on System	Reo Lin	07/06/2013
A	Revised error in Page 4 and 5: Pin 6 should be no connection not no pin	Reo Lin	08/08/2013
B	Add Protective tape in Finished good in Page 3	Reo Lin	07/03/2015
C	Change Pin 6 to no pin from customer request	Reo Lin	08/27/2015

LED DISPLAY
LTC-46C5S

1. Description

The LTC-46C5S is a 0.4 inch (10.2 mm) digit height triple digit seven-segment display. This device utilizes AlGaAs red LED chips, which are made from AlGaAs on a non-transparent GaAs substrate. The display has black face and white segments.

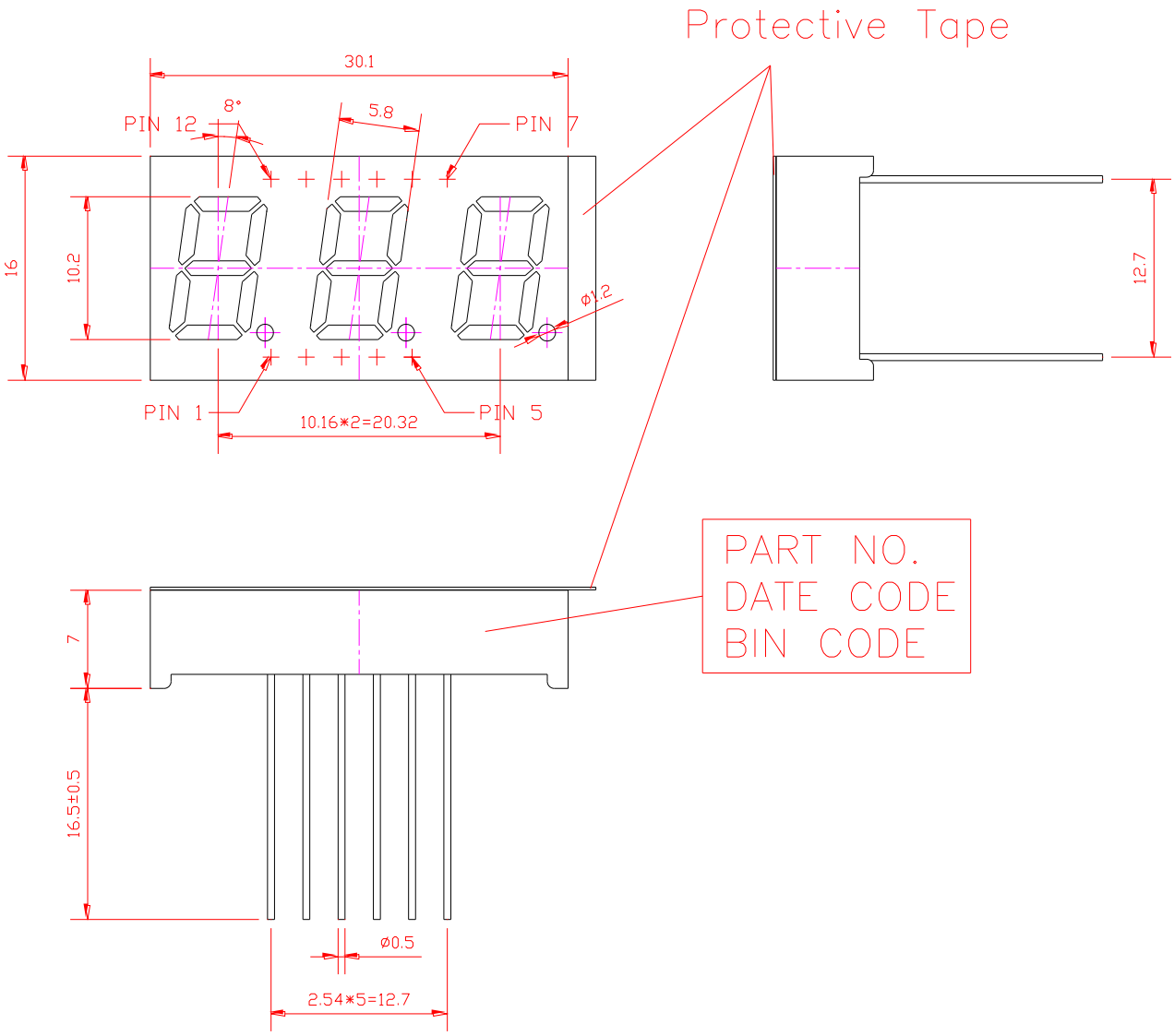
1.1 Features

- 0.4 inch (10.2 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)

1.2 Device

Part No	Description
AlGaAs RED	Multiplex Common Anode
LTC-46C5S	Rt. Hand Decimal

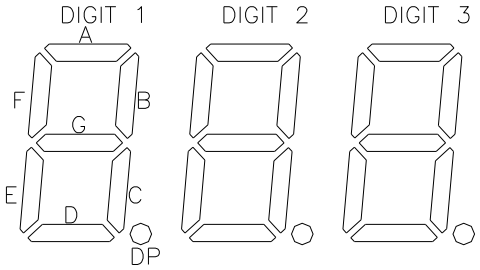
2. Package Dimensions

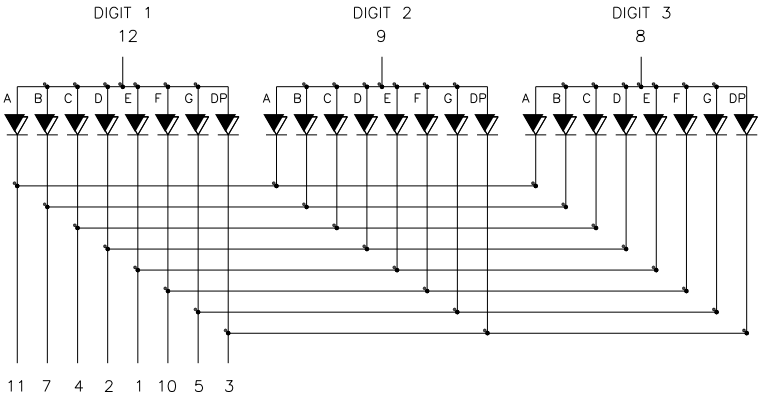


Notes :

1. All dimensions are in millimeters. Tolerances are ±0.25 mm (0.01“) unless otherwise noted
2. Pin tip’s shift tolerance is ± 0.4 mm
3. Foreign material on segment ≦10mil
4. Ink contamination (surface) ≦20mil
5. Bubble in segment ≦10mil
6. Bending ≦ 1% of reflector length
7. Recommend the best PCB hole: Diameter 1.0 mm

3. Internal Circuit Diagram





4. Pin Connection

No	Connection
1	CATHODE E
2	CATHODE D
3	CATHODE DP
4	CATHODE C
5	CATHODE G
6	NO PIN
7	CATHODE B
8	COMMON ANODE DIGIT 3
9	COMMON ANODE DIGIT 2
10	CATHODE F
11	CATHODE A
12	COMMON ANODE DIGIT 1

5. Rating and Characteristics

5.1. Absolute Maximum Rating at Ta=25°C

Parameter	Maximum Rating	Unit
Power Dissipation Per Segment	75	mW
Peak Forward Current Per Segment (1/10 Duty Cycle, 0.1ms Pulse Width)	125	mA
Continuous Forward Current Per Segment Derating Linear From 25°C Per Segment	30 0.4	mA mA/°C
Operating Temperature Range	-35°C to +85°C	
Storage Temperature Range	-35°C to +85°C	
Solder Condition: 1/16 inch below seating plane for 3 seconds at 260°C or temperature of unit (during assembly) not over max. temperature rating above		

5.2.Electrical / Optical Characteristics at Ta=25°C

Parameter	Symbol	MIN.	TYP.	MAX.	Unit	Test Condition
Average Luminous Intensity Per Segment	IV	1300	3800		μcd	IF=10mA
Peak Emission Wavelength	λp		660		nm	IF=20mA
Spectral Line Half-Width	Δλ		35		nm	IF=20mA
Dominant Wavelength	λd		638		nm	IF=20mA
Forward Voltage Per Chip	VF		1.8	2.6	V	IF=20mA
Reverse Current Per Segment(*2)	IR			100	μA	VR=5V
Luminous Intensity Matching Ratio (Similar Light Area)	IV-m			2:1		IF=10mA

Notes :

1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commission International De L'Eclariage) eye-response curve
2. Reverse voltage is only for IR test. It cannot continue to operate at this situation
3. Cross talk specification ≦ 2.5%

5.3. Typical Electrical / Optical Characteristics Curves

(25°C Ambient Temperature Unless Otherwise Noted)

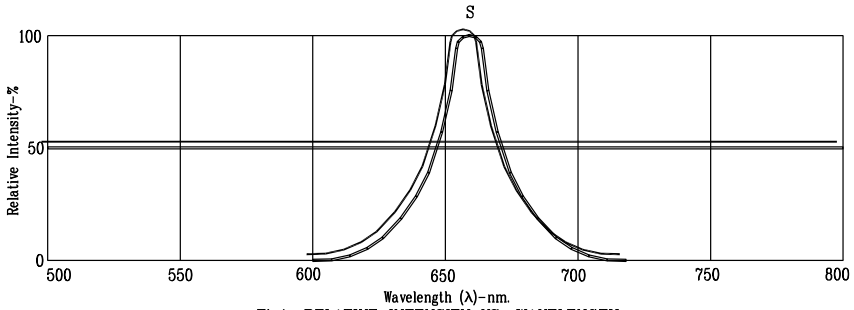


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

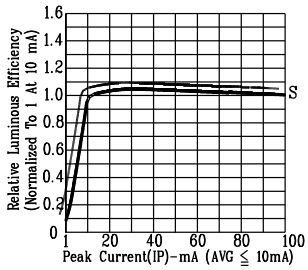


Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT (REFRESH RATE 1KHz)

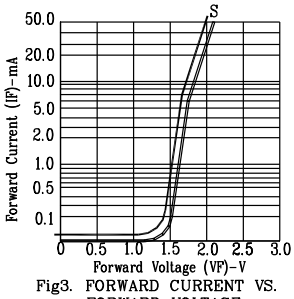


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

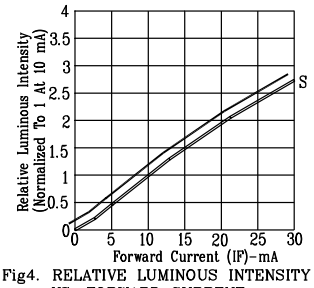


Fig4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

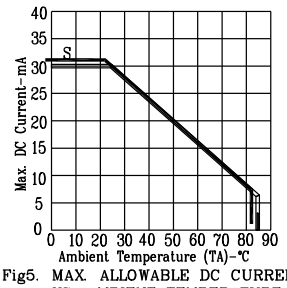


Fig5. MAX. ALLOWABLE DC CURRENT VS. AMBIENT TEMPERATURE.

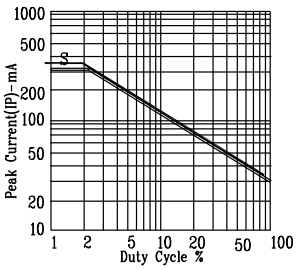


Fig6. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE: S=AlGaAs RED