



LED Display Product Data Sheet LTS-5824SW

Spec No.: DS30-2013-0027

Effective Date: 04/19/2013

Revision: -

LITE-ON DCC

RELEASE

BNS-OD-FC001/A4

LED DISPLAY**LTS-5824SW**

Item	Description	By	DATE
1	New Spec.	Reo Lin	12/14/2011
2	Revised WHITE CHIP HUE TABLE	Reo Lin	04/05/2012

FEATURES

- * 0.56 inch (14.25 mm) DIGIT HEIGHT
- * EXCELLENT SEGMENT UNIFORMITY
- * LOW POWER REQUIREMENT
- * HIGH BRIGHTNESS AND HIGH CONTRAST
- * WIDE VIEWING ANGLE
- * SOLID STATE RELIABILITY
- * BINNED FOR LUMINOUS INTENSITY
- * **LEAD-FREE PACKAGE (ACCORDING TO ROHS)**

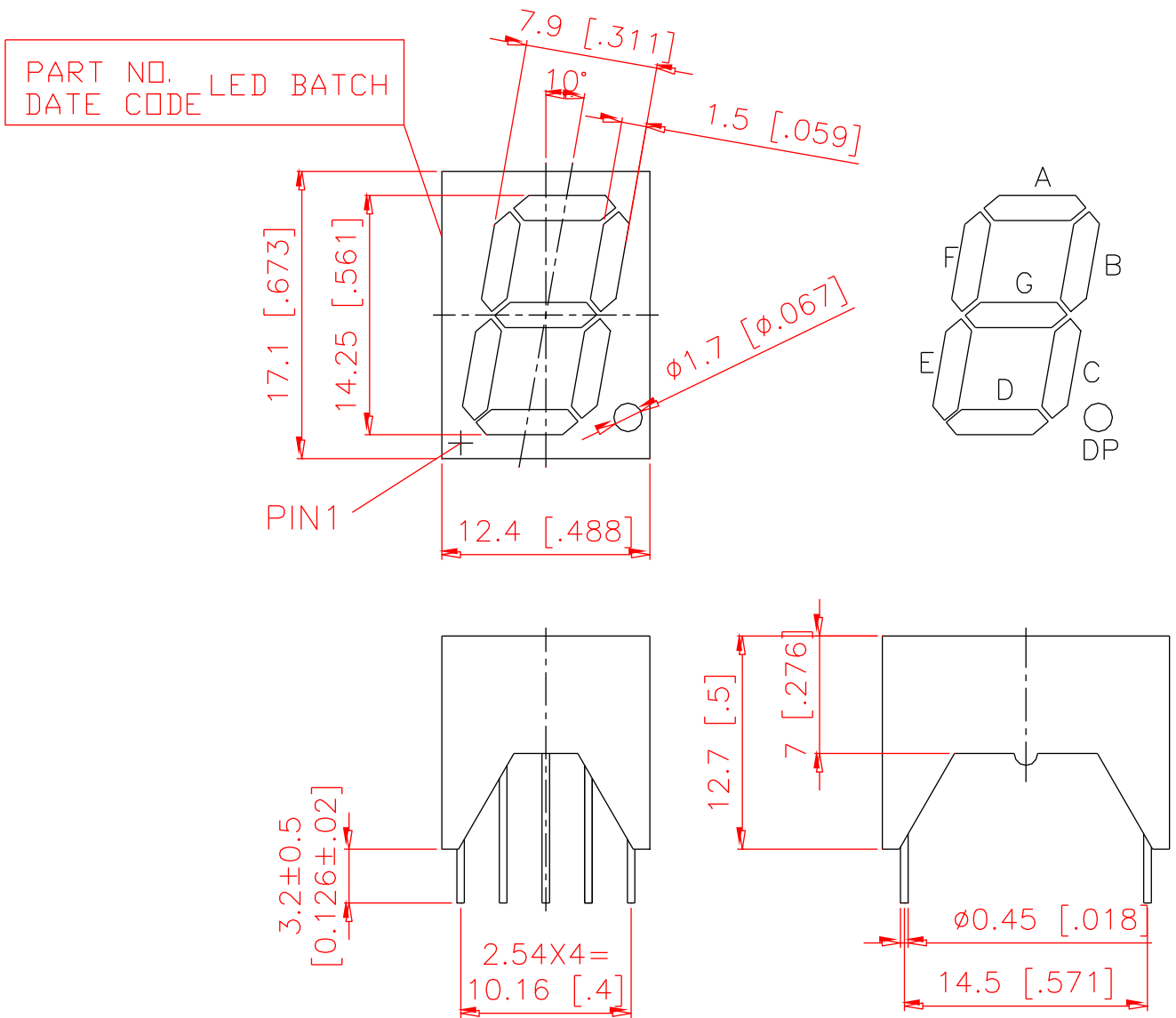
DESCRIPTION

The LTS-5824SW is a 0.56 inch (14.25 mm) digit height single digit display. This device uses InGaN White LED chips (InGaN on a transparent substrate). The display has black face and white segments.

DEVICE

PART NO.	DESCRIPTION
InGaN White	Common Anode
LTS-5824SW	Rt. Hand Decimal

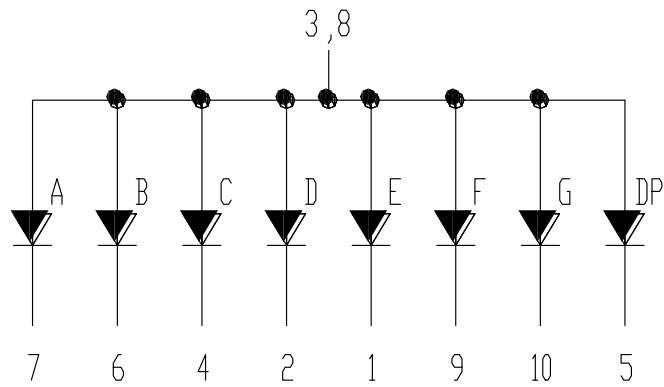
PACKAGE DIMENSIONS



NOTES:

1. All dimensions are in millimeters. Tolerances are ± 0.25 mm (0.01") unless otherwise noted.
2. Pin tip's shift tolerance is ± 0.4 mm.
3. Foreign material on segment ≅ 10mils
4. Ink contamination (surface) ≅ 20mils
5. Bending ≅ 1% of reflector length
6. Bubble in segment ≅ 10mils
7. Recommend the best pcb hole : diameter 0.9mm

INTERNAL CIRCUIT DIAGRAM



PIN CONNECTION

No	CONNECTION
1	Cathode E
2	Cathode D
3	Common Anode
4	Cathode C
5	Cathode DP
6	Cathode B
7	Cathode A
8	Common Anode
9	Cathode F
10	Cathode G

CHIP LED ABSOLUTE MAXIMUM RATING

PARAMETER	MAXIMUM RATING	UNIT
Power Dissipation Per Segment	35	mW
Peak Forward Current Per Segment (1/8 Duty Cycle, 0.25ms Pulse Width, 65 °C)	50	mA
Continuous Forward Current Per Segment	10	mA
Forward Current Derating from 25 °C	0.22	mA/°C
Operating Temperature Range	-20 °C to +80 °C	
Storage Temperature Range	-40 °C to +85 °C	

CHIP LED ELECTRICAL / OPTICAL CHARACTERISTICS AT Ta=25°C

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I _v	71		280	mcd	IF = 5mA Note 1, 2, 5
Viewing Angle	2θ 1/2		130		deg	Fig.6
Chromaticity Coordinates	x		0.339			IF = 5mA Note 3, 5 Fig.1
	y		0.3495			
Forward Voltage Per Segment	V _F	2.70		3.2	V	IF = 5mA
Reverse Current Per Segment ⁽⁶⁾	I _R			10	μA	VR=5V
Luminous Intensity Matching Ratio (Similar Light Area)	I _v -m			2:1		IF=5mA

Note :

1. Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
2. The chromaticity coordinates (x, y) is derived from the 1931 CIE chromaticity diagram.
3. Caution in ESD:
Static Electricity and surge damages the LED. It is recommend to use a wrist band or anti-electrostatic glove when handling the LED. All devices, equipment and machinery must be properly grounded.
4. Tester: CAS140B is for the chromaticity coordinates (x, y) and I_v.
5. The chromaticity coordinates (x, y) guarantee should be added ± 0.01 tolerance.
6. Reverse voltage is only for I_R test. It can not continue to operate at this situation.
7. Cross talk specification ≤ 2.5%

TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

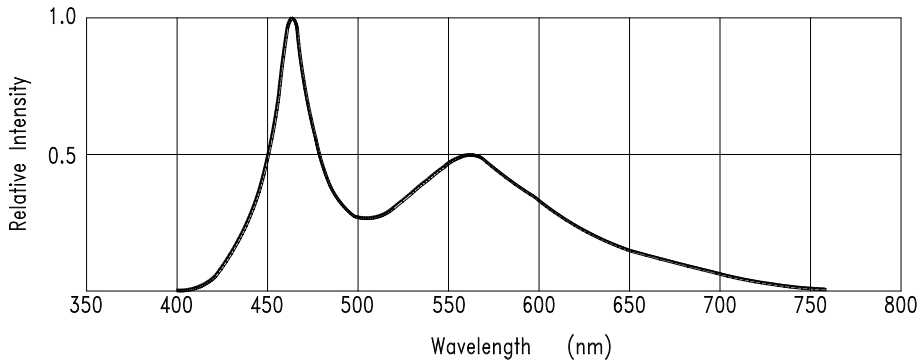


Fig.1 RELATIVE INTENSITY VS. WAVELENGTH

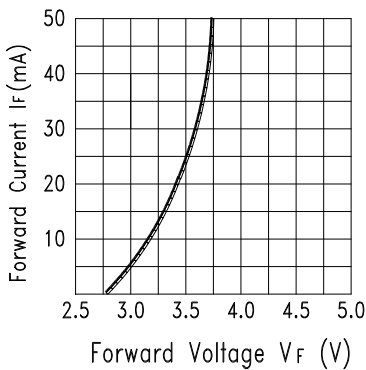


Fig.2 Forward Current vs. Forward Voltage

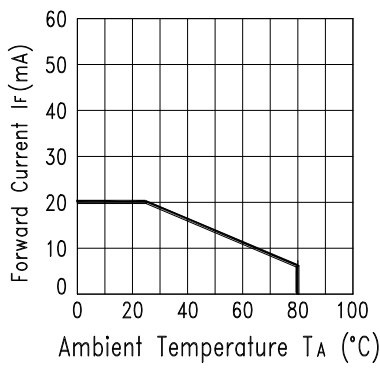


Fig.3 Forward Current Derating Curve

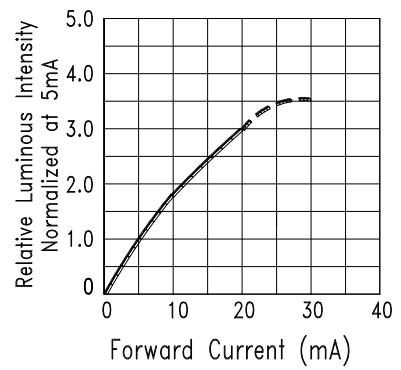


Fig.4 Relative Luminous Intensity vs. Forward Current

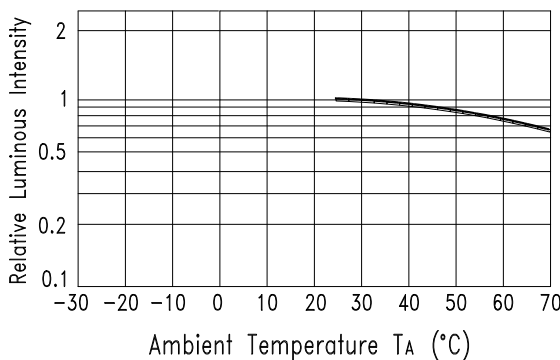


Fig.5 Luminous Intensity vs. Ambient Temperature

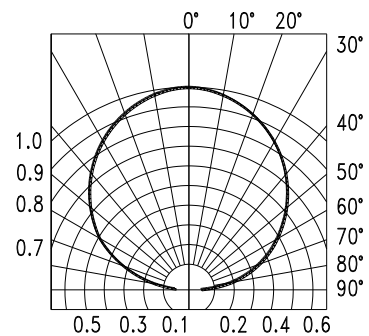


Fig.6 Spatial Distribution

Property of LITE-ON Only

Bin Code List

VF Spec. Table

VF Bin	Forward Voltage (V) at IF = 5mA	
	Min.	Max.
V1	2.55	2.65
V2	2.65	2.75
V3	2.75	2.85
V4	2.85	2.95
V5	2.95	3.05
V6	3.05	3.15

Tolerance on each Forward Voltage bin is +/-0.1 volt

IV Spec. Table

IV Bin	Luminous Intensity (mcd) at IF = 5mA	
	Min.	Max.
Q	71.0	112.0
R	1120	180.0
E	180.0	280.0

Tolerance on each Luminous Intensity bin is +/- 15%.

Hue Spec. Table

Hue Bin	Color bin limits at IF = 5mA				
	CIE 1931 Chromaticity coordinates				
		x	y	z	w
S7-1	x	0.324	0.324	0.334	0.334
	y	0.329	0.296	0.311	0.343
S7-2	x	0.324	0.324	0.334	0.334
	y	0.361	0.329	0.343	0.376
S8-1	x	0.334	0.334	0.344	0.344
	y	0.311	0.343	0.3573	0.324
S8-2	x	0.334	0.334	0.344	0.344
	y	0.343	0.376	0.389	0.3573
S9-1	x	0.344	0.344	0.354	0.354
	y	0.324	0.3573	0.372	0.338
S9-2	x	0.344	0.344	0.354	0.354
	y	0.3573	0.389	0.403	0.372

Tolerance on each Hue (x, y) bin is +/- 0.01.

