



LED Display

Product Data Sheet

LTC-4798SW

Spec No.: DS30-2013-0006

Effective Date: 04/19/2013

Revision: A

LITE-ON DCC

RELEASE

LED DISPLAY**LTC-4798SW**
DATA SHEET

Item	Description	By	DATE
1	New Spec.	Reo Lin	12/19/2012
2	2.1 Add Pin and Pin Pitch in Page 3 2.2 Modify LED Spec. In Page 5~8	Reo Lin	12/21/2012
3	3.1 Modify Pin length from 12 to 3 mm in Page 3 3.2 Add Packing Spec. In Page 9	Reo Lin	02/04/2013
4.	Revised symbol error in Page 3	Reo Lin	04/10/2013

FEATURES

- * 0.39 inch (9.9 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)**

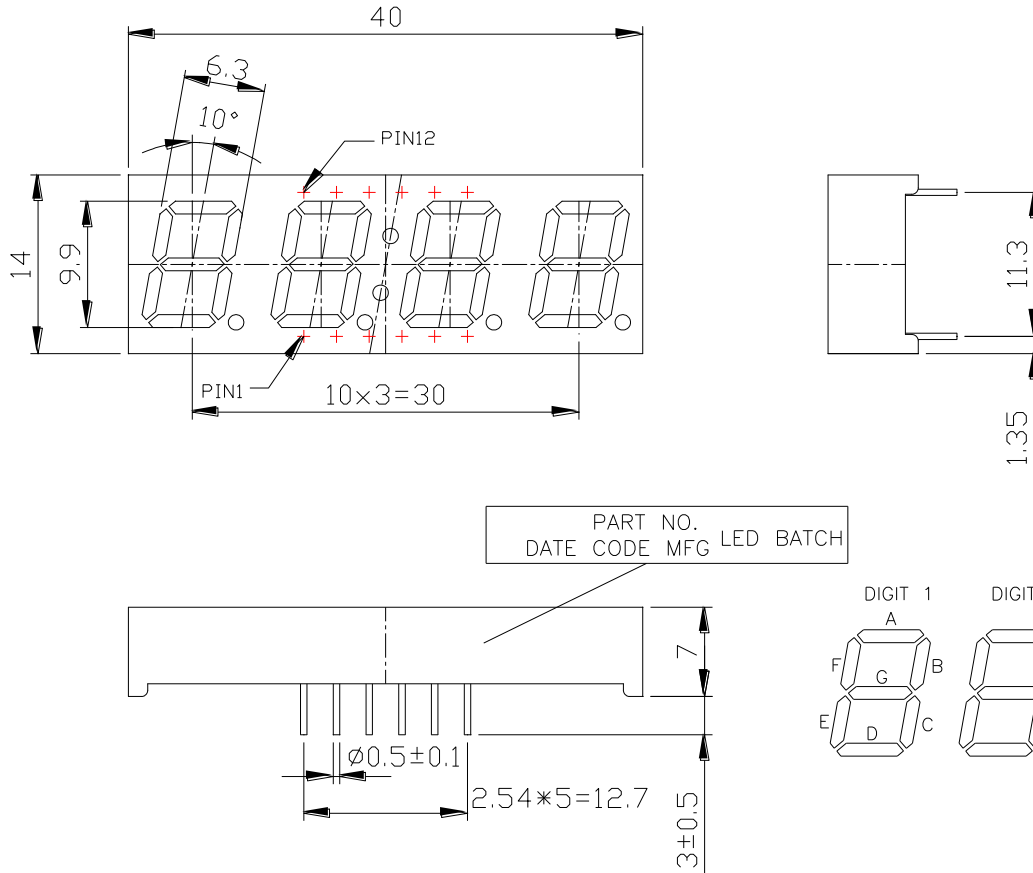
DESCRIPTION

The LTC-4798SW is a 0.39 inch (9.9 mm) digit height quadruple digit seven-segment display. This device uses InGaN White LED chips (InGaN on a transparent substrate), and has a white face and white segments.

DEVICE

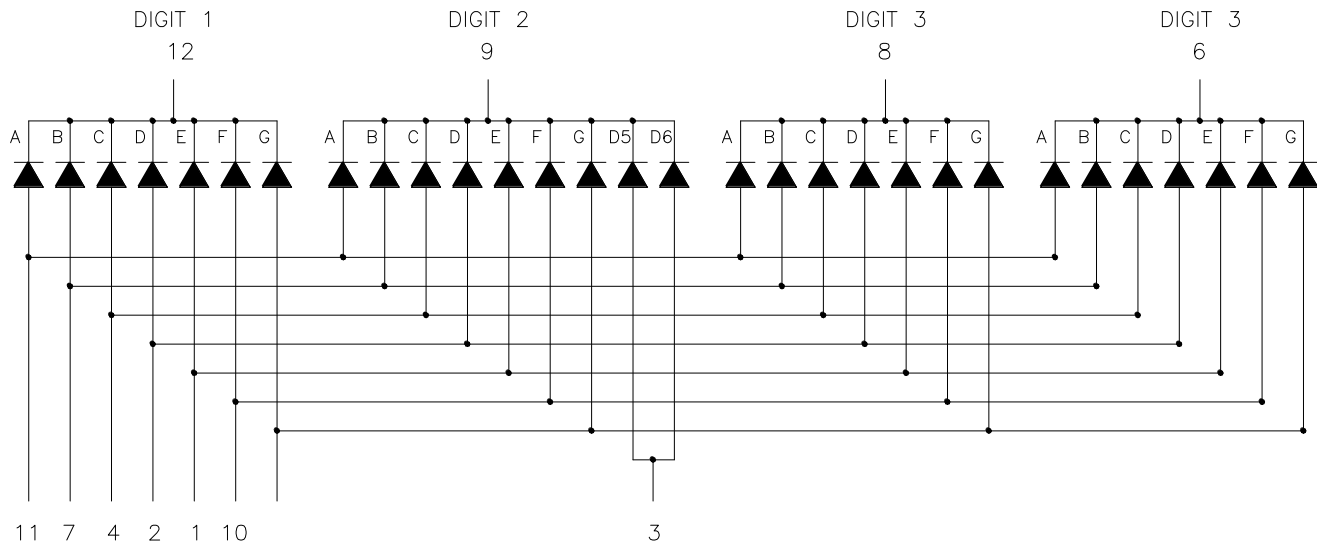
PART NO.	DESCRIPTION
InGaN White	Multiplex Common Cathode
LTC-4798SW	

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 ≤ 10 mils
 4. Ink contamination (surface) ≤ 20 mils
 5. Bending $\leq 1\%$ of reflector length
 6. Bubble in segment ≤ 10 mils
 7. Recommend the best pcb hole : diameter 1mm

INTERNAL CIRCUIT DIAGRAM



PIN CONNECTION

No.	CONNECTION
1	Anode E
2	Anode D
3	Anode D5,D6
4	Anode C
5	Anode G
6	Common Cathode Digit 4
7	Anode B
8	Common Cathode Digit 3
9	Common Cathode Digit 2
10	Anode F
11	Anode A
12	Common Cathode Digit 1

CHIP LED ABSOLUTE MAXIMUM RATING

PARAMETER	MAXIMUM RATING	UNIT
Power Dissipation Per Segment	35	mW
Peak Forward Current Per Segment (Frequency 1Khz, 10% duty cycle)	50	mA
Continuous Forward Current Per Segment	10	mA
Forward Current Derating from 25 °C	0.28	mA/°C
Operating Temperature Range	-35 °C to + 85 °C	
Storage Temperature Range	-35 °C to + 85 °C	
Soldering Conditions: 1/16 inch below seating plane for 3 seconds at 260 °C.		

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

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	Iv	71		146	mcd	IF = 5mA Note 1, 2, 5
Viewing Angle	2 θ 1/2		130		deg	Fig.6
Chromaticity Coordinates	x		0.304			IF = 5mA Note 3, 5 Fig.1
	y		0.3			
Forward Voltage Per Segment	VF	2.7		3.2	V	IF = 5mA
Reverse Current Per Segment ⁽⁷⁾	IR			100	μA	VR=5V
Luminous Intensity Matching Ratio (Similar Light Area)	Iv-m			2:1		IF=5mA

Note :

- Luminous intensity is measured with a light sensor and filter combination that approximates the CIE eye-response curve.
- Iv classification code is marked on each packing bag.
- The chromaticity coordinates (x, y) is derived from the 1931 CIE chromaticity diagram.
- 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.
- Tester:
CAS140B is for the chromaticity coordinates (x, y) and Iv.
- The chromaticity coordinates (x, y) guarantee should be added ± 0.01 tolerance
- 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)

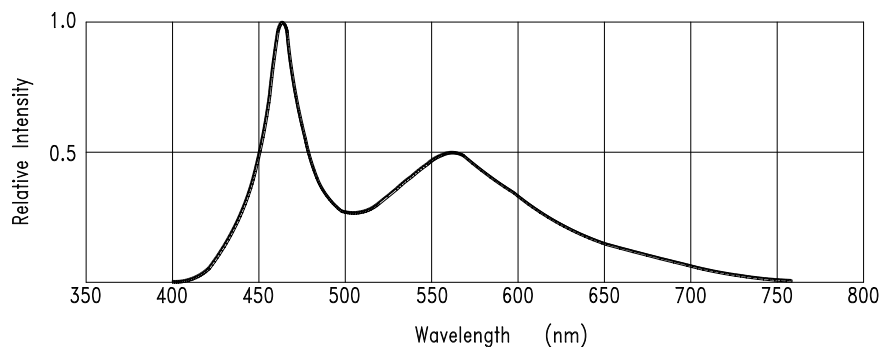


Fig.1 RELATIVE INTENSITY VS. WAVELENGTH

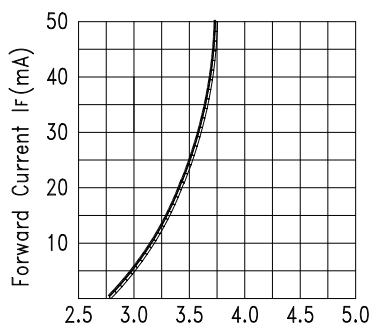


Fig.2 Forward Current vs.
Forward Voltage

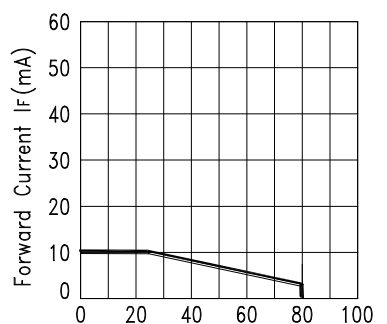


Fig.3 Forward Current
Derating Curve

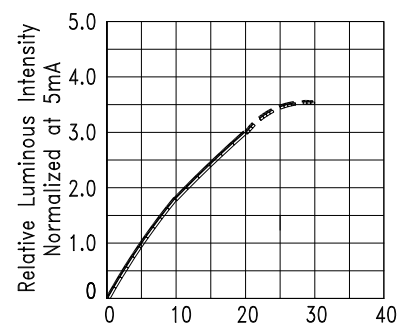


Fig.4 Relative Luminous Intensity
vs. Forward Current

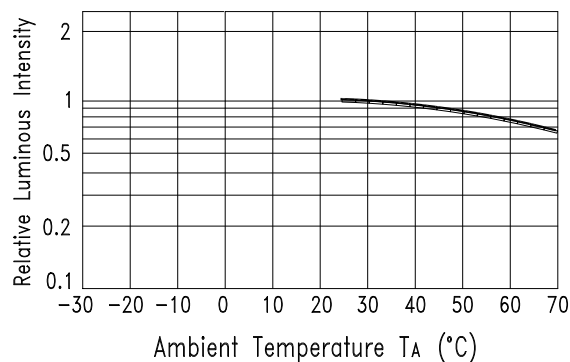


Fig.5 Luminous Intensity vs.
Ambient Temperature

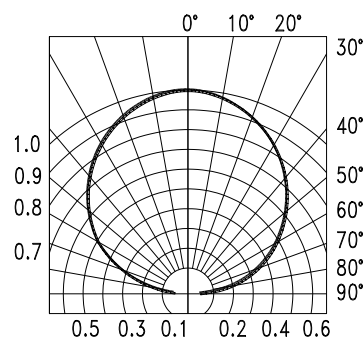


Fig.6 Spatial Distribution

Bin Code List

VF Spec. Table

VF Bin	Forward Voltage (V) at IF = 5mA	
	Min.	Max.
3	2.70	2.80
4	2.80	2.90
5	2.90	3.00
6	3.00	3.10
7	3.10	3.20

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

IV Spec. Table

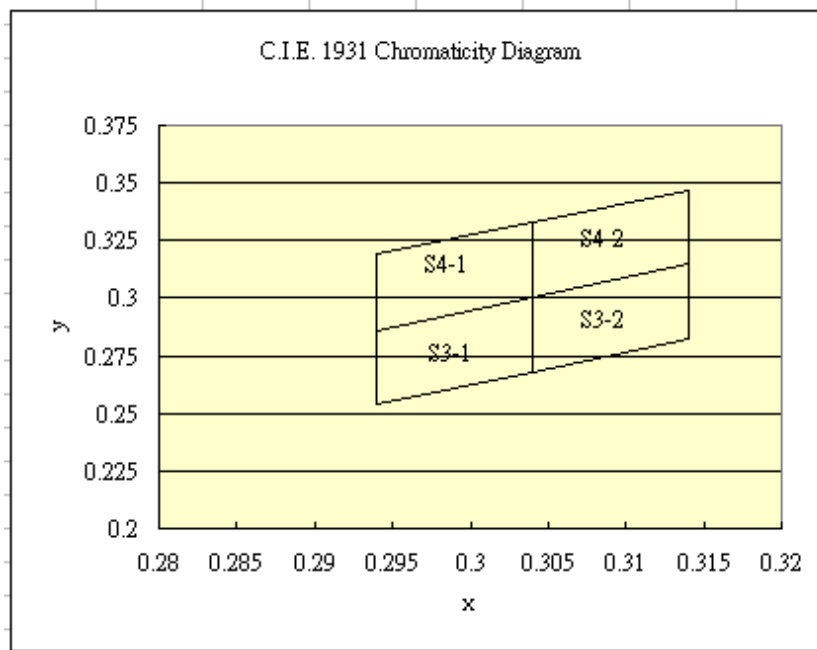
IV Bin	Luminous Intensity (mcd) at IF = 5mA	
	Min.	Max.
Q11	71.0	81.0
Q12	81.0	90.0
Q21	90.0	101.0
Q22	101.0	112.0
R11	112.0	129.0
R12	129.0	146.0
Tolerance on each Luminous Intensity bin is +/- 15%.		

Hue Spec. Table

Hue Bin	Color bin limits at IF = 5mA				
	CIE 1931 Chromaticity coordinates				
S3-1	x	0.294	0.294	0.304	0.304
	y	0.254	0.286	0.300	0.268
S3-2	x	0.304	0.304	0.314	0.314
	y	0.268	0.300	0.315	0.282
S4-1	x	0.294	0.294	0.304	0.304
	y	0.286	0.319	0.333	0.300
S4-2	x	0.304	0.304	0.314	0.314
	y	0.300	0.333	0.347	0.315

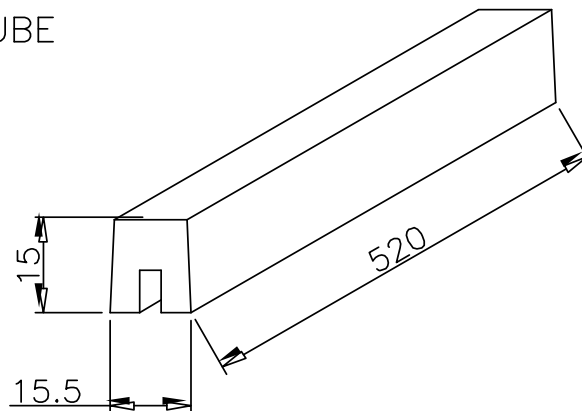
Tolerance on each Hue (x, y) bin is +/- 0.01.

Property of Lite-On Only

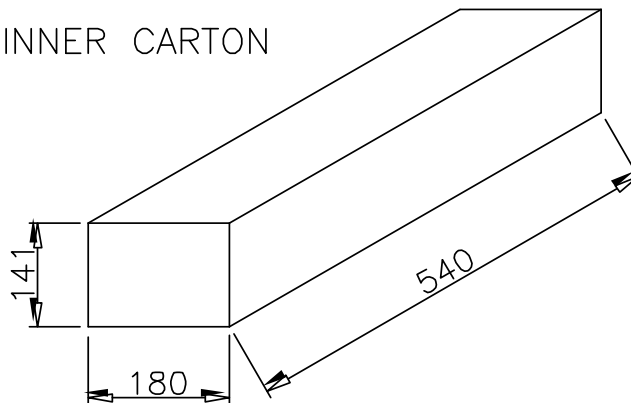


PACKING SPEC.

12 PCS/PACKING TUBE



88 PACKING TUBE/INNER CARTON



4 INNER CARTON/OUTER CARTON

