



LED Display

Product Data Sheet

LTP-7388KM-J

Spec No.: DS30-2005-134

Effective Date: 08/27/2010

Revision: A

LITE-ON DCC

RELEASE

BNS-OD-FC001/A4

LITE-ON Technology Corp. / Optoelectronics

No.90,Chien 1 Road, Chung Ho, New Taipei City 23585, Taiwan, R.O.C.

Tel: 886-2-2222-6181 Fax: 886-2-2221-1948 / 886-2-2221-0660

<http://www.liteon.com/opto>

LED DISPLAY

LTP-7388KM-J **DATA SHEET**

Rev	Description	By
-	NPPR Original Spec	Vicky Liao June 22,2005
A	- Add IF=10mA test condition on page 5,6 - Revise Operating and Storage Temperature Range to -35℃ to +105℃ - Revise W X L dimension from 20.2mm to 19.9mm on page 2 - Add cross talk specification $\leq 2.5\%$ on page 5,6 - Identify guide hole, pin assignment and marking location on page 2 - Add packing spec on page 10 and 11 - Identified Bin/Hue marking location on page 2 - Add marking example on page 2 - Add Bin/Hue table of Green/Amber color on page 7 and 8	Phanomkorn August 03, 2010

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Revision No.	A
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Customer Approval	
Date	

[illegible]

FEATURES

- * 0.784 inch (19.9 mm) MATRIX HEIGHT
- * LOW POWER REQUIREMENT
- * SINGLE PLANE, WIDE VIEWING ANGLE
- * SOLID STATE RELIABILITY
- * 8x8 ARRAY WITH X-Y SELECT
- * COMPATIBLE WITH USASCII AND EBCDIC CODES
- * STACKABLE HORIZONTALLY
- * CATEGORIZED FOR LUMINOUS INTENSITY
- * LEAD-FREE PACKAGE (ACCORDING TO ROHS)

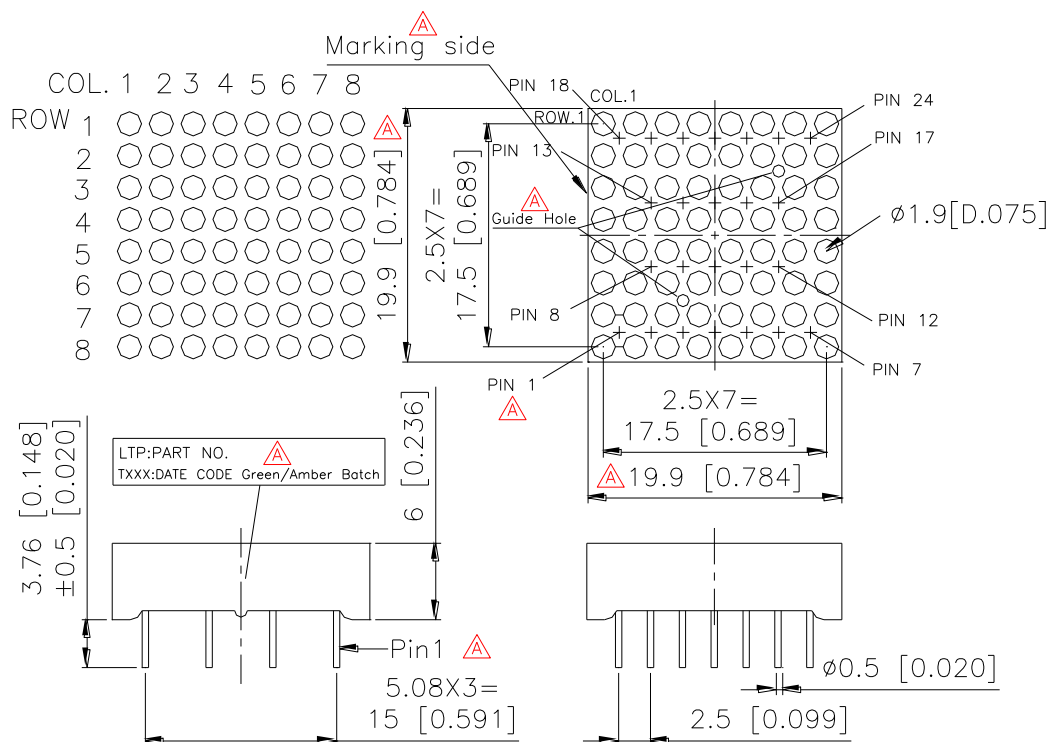
DESCRIPTION

The LTP-7388KM-J is a 0.784 inch (19.9 mm) matrix height 8x8 dot matrix display. The device is multicolor applicable display. It uses AlInGaP GREEN LED chips (AlInGaP epi on GaAs substrate) and AlInGaP HYPER RED chips (AlInGaP epi on GaAs substrate). The display has black face and white dots.

DEVICE

PART NO.	DESCRIPTION
MULTI-COLOR	Cathode Column
LTP-7388KM-J	Anode Row

PACKAGE DIMENSIONS



- NOTES: 1. All dimensions are in millimeters. Tolerances are ± 0.25 mm (0.01") unless otherwise noted.
- Pin tip's shift tolerance is ± 0.4 mm.
 - Foreign material on segment ≤ 10 mils
 - Ink contamination (surface) ≤ 20 mils
 - Bending $\leq 1/100$
 - Bubble in segment ≤ 10 mils

Marking as sample below:

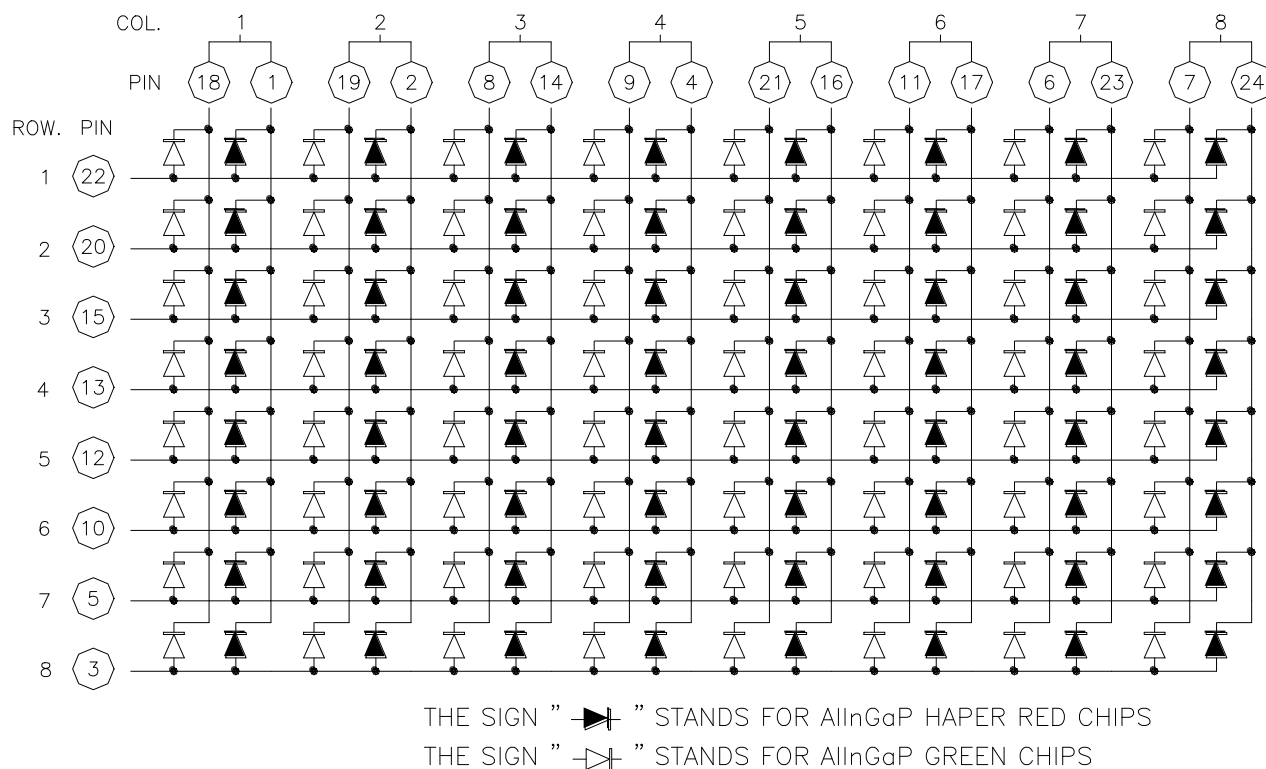
Part Number: LTP-7388KM-J

TXXX Date Code: T1029: 10 = Year 2010, 29= week 29

Green/Amber Batch: H38 H58:

58=Amber Hue
H=Amber Iv
38=Green Hue
H=Green Iv

INTERNAL CIRCUIT DIAGRAM



PIN CONNECTION

No.	CONNECTION	No.	CONNECTION
1	Cathode Column 1 AlInGaP HYPER RED	13	Anode Row 4
2	Cathode Column 2 AlInGaP HYPER RED	14	Cathode Column 3 AlInGaP HYPER RED
3	Anode Row 8	15	Anode Row 3
4	Cathode Column 4 AlInGaP HYPER RED	16	Cathode Column 5 AlInGaP HYPER RED
5	Anode Row 7	17	Cathode Column 6 AlInGaP HYPER RED
6	Cathode Column 7 AlInGaP GREEN	18	Cathode Column 1 AlInGaP GREEN
7	Cathode Column 8 AlInGaP GREEN	19	Cathode Column 2 AlInGaP GREEN
8	Cathode Column 3 AlInGaP GREEN	20	Anode Row 2
9	Cathode Column 4 AlInGaP GREEN	21	Cathode Column 5 AlInGaP GREEN
10	Anode Row 6	22	Anode Row 1
11	Cathode Column 6 AlInGaP GREEN	23	Cathode Column 7 AlInGaP HYPER RED
12	Anode Row 5	24	Cathode Column 8 AlInGaP HYPER RED

ABSOLUTE MAXIMUM RATING

PARAMETER	AlInGaP GREEN	UNIT
Average Power Dissipation Per Dot	70	mW
Peak Forward Current Per Dot (Frequency 1Khz, 10% duty cycle)	60	mA
Average Forward Current Per Dot	25	mA
Forward Current Derating from 25 ⁰ C	0.28	mA/°C
Reverse Voltage Per Segment	5	V
Operating Temperature Range	-35°C to +105°C	
Storage Temperature Range	-35°C to +105°C	
Soldering Conditions: 1/16 inch below seating plane for 3 seconds at 260 ⁰ C or of temperature unit (during assembly) not over max. temperature rating above.		

ELECTRICAL / OPTICAL CHARACTERISTICS

AlInGaP GREEN

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity per Dot	I _v	480 5000	1269 8000		ucd	I _p =16mA, 1/16Duty I _F =10mA
Peak Emission Wavelength	λ _p		571		nm	I _F =20mA
Spectral Line Half-Width	Δλ		15		nm	I _F =20mA
Dominant Wavelength	λ _d		572		nm	I _F =20mA
Forward Voltage any Dot	V _F		2.05	2.6	V	I _F =20mA
			2.3	2.8		I _F =80mA
Reverse Current any Dot	I _R			100	μA	V _R =5V
Luminous Intensity Matching Ratio (Similar Light Area)	I _{v-m}			2:1		I _p =16mA 1/16Duty

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%

ABSOLUTE MAXIMUM RATING

PARAMETER	AlInGaP HYPER RED	UNIT
Average Power Dissipation Per Dot	70	mW
Peak Forward Current Per Dot (Frequency 1Khz, 10% duty cycle)	90	mA
Average Forward Current Per Dot	25	mA
Forward Current Derating from 25 ⁰ C	0.28	mA/°C
Reverse Voltage Per Segment	5	V
Operating Temperature Range	-35°C to +105°C	
Storage Temperature Range	-35°C to +105°C	
Soldering Conditions: 1/16 inch below seating plane for 3 seconds at 260 ⁰ C or of temperature unit (during assembly) not over max. temperature rating above.		

ELECTRICAL / OPTICAL CHARACTERISTICS

AlInGaP HYPER RED

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity per Dot	I _v	480 5000	1238 8000		ucd	I _p =16mA, 1/16Duty I _F =10mA
Peak Emission Wavelength	λ _p		650		nm	I _F =20mA
Spectral Line Half-Width	Δλ		20		nm	I _F =20mA
Dominant Wavelength	λ _d		639		nm	I _F =20mA
Forward Voltage any Dot	V _F		2.05	2.6	V	I _F =20mA
			2.3	2.8		I _F =80mA
Reverse Current any Dot	I _R			100	μA	V _R =5V
Luminous Intensity Matching Ratio (Similar Light Area)	I _{v-m}			2:1		I _p =16mA 1/16Duty

- 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%

BIN TABLE SPECIFICATION

AlInGaP Green

BIN TABLE FOR LUMINOUS INTENSITY

BIN TABLE 9

LUMINOUS INTENSITY		UNIT: mcd
Bin Code	Min	Max
F	4.41	5.70
G	5.71	7.40
H	7.41	9.70
J	9.71	12.50
K	12.51	16.30
L	16.31	21.20

The Luminous Intensity Tolerance ± 15 percentage

HUE TABLE FOR WAVELENGTH

HUE TABLE 1

Dominant Wavelength		UNIT: nm
Hue Code	Min	Max
36	566.1	568.5
38	568.6	571.0
40	571.1	573.5
42	573.6	576.0

Note: Domain wave length = 566.1nm – 576.0nm

The Wavelength tolerance is ± 1 nm

Amber=AlInGaP Hyper Red + AlInGaP Green

BIN TABLE FOR LUMINOUS INTENSITY

BIN TABLE 9

LUMINOUS INTENSITY		UNIT: mcd
Bin Code	Min	Max
F	4.41	5.70
G	5.71	7.40
H	7.41	9.70
J	9.71	12.50
K	12.51	16.30
L	16.31	21.20

The Luminous Intensity Tolerance ± 15 percentage

HUE TABLE FOR WAVELENGTH

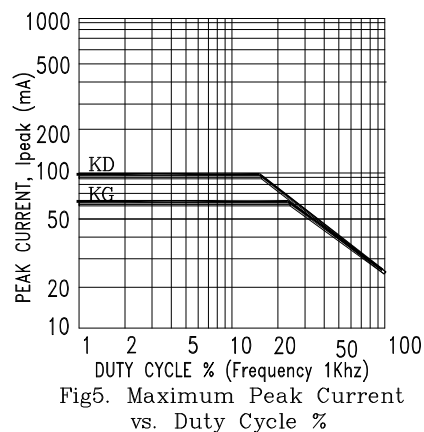
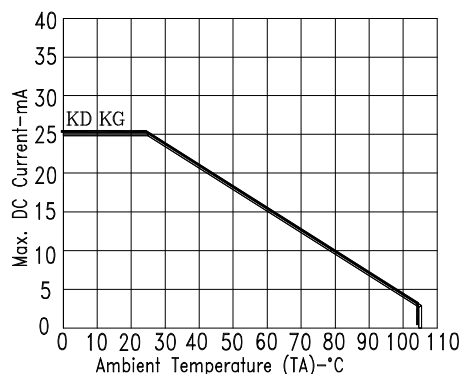
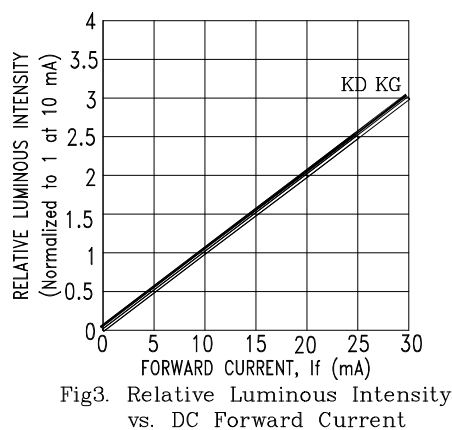
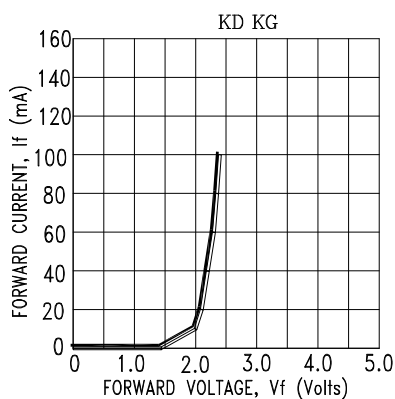
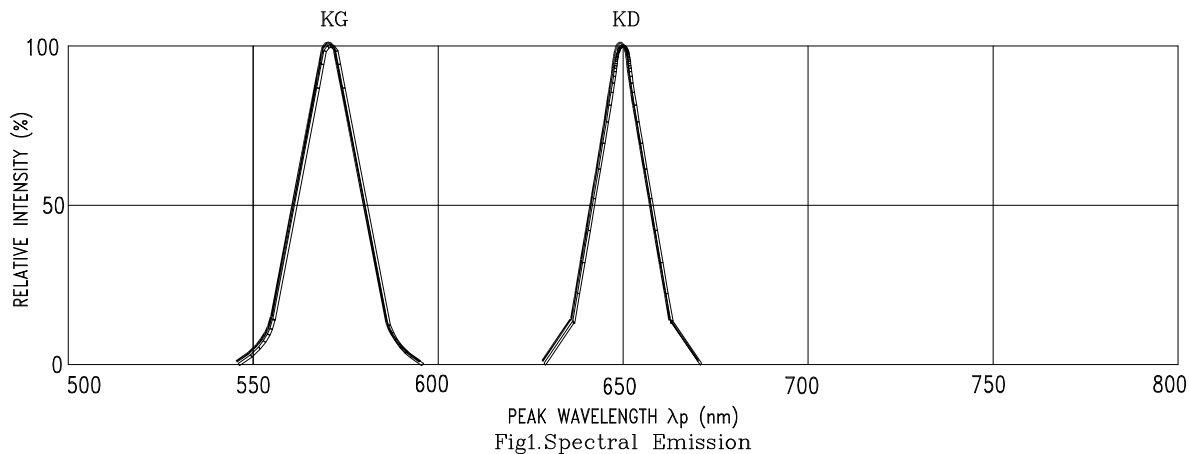
HUE TABLE 1

Dominant Wavelength		UNIT: nm
Hue Code	Min	Max
52	586.1	588.5
54	588.6	591.0
56	591.1	594.0
58	594.1	598.0
60	598.1	602.0
62	602.1	606.0
64	606.1	610.0

Note: Domain wave length = 586.1nm – 610.0nm

The Wavelength tolerance is ± 1 nm

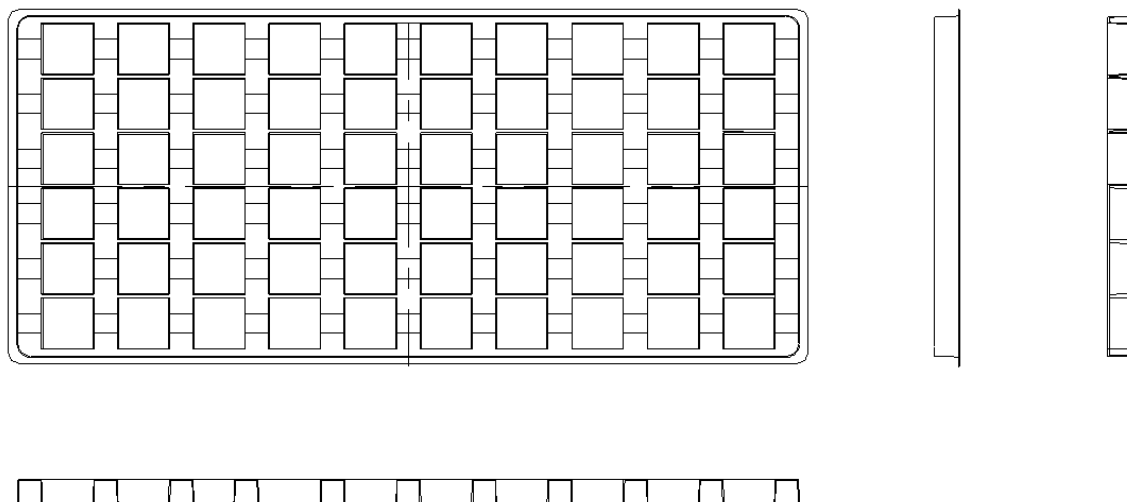
TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES (25°C Ambient Temperature Unless Otherwise Noted)



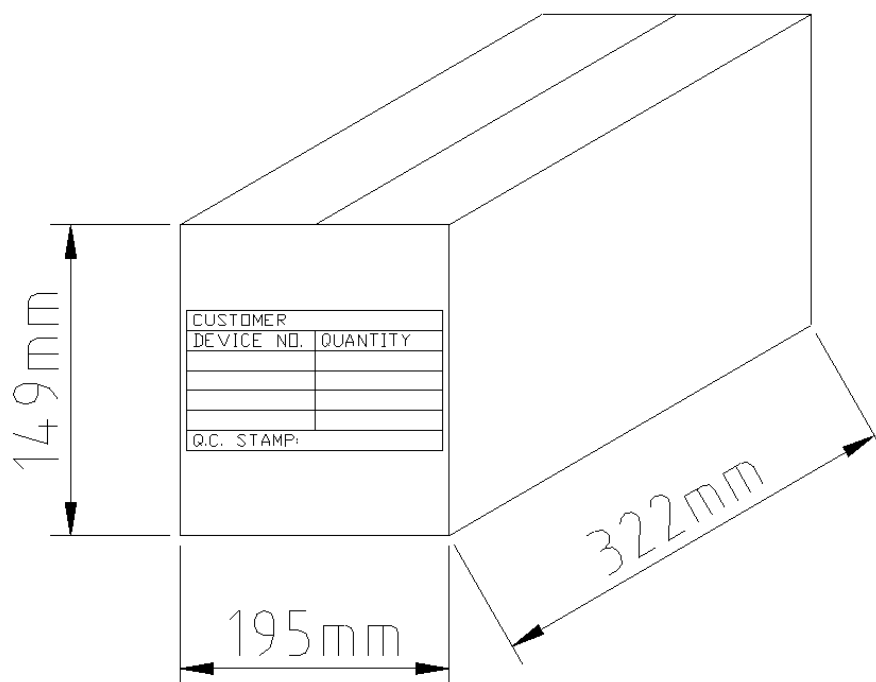
NOTE : KD=AlInGaP HYPER RED
KG=AlInGaP GREEN

PACKING SPEC

60 UNITS/PACKING TRAY



12 TRAYS/INNER CARTON (Including One Empty Tray) 660 UNITS/INNER CARTON



PACKING SPEC

72 TRAYS/OUTER CARTON (Including 6 Empty Trays)

3960 PCS/OUTER CARTON

