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LED Display Product Data Sheet LTP-257FFM-01

Spec No.: DS30-2003-156

Effective Date: 12/13/2003

Revision: -

LITE-ON DCC

RELEASE

BNS-OD-FC001/A4

FEATURES

- * 2.52 inch (64 mm) MATRIX HEIGHT
- * LOW POWER REQUIREMENT
- * EXCELLENT CHARACTERS APPEARANCE
- * HIGH BRIGHTNESS & HIGH CONTRAST
- * WIDE VIEWING ANGLE
- * SOLID STATE RELIABILITY
- * STACKABLE VERTICALLY AND HORIZONTALLY
- * CATEGORIZED FOR LUMINOUS INTENSITY

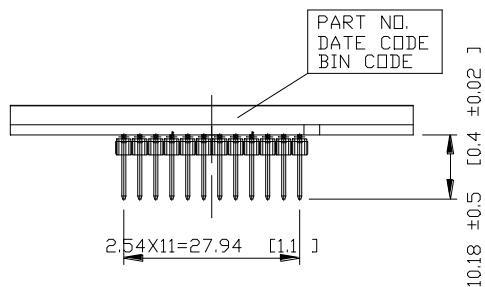
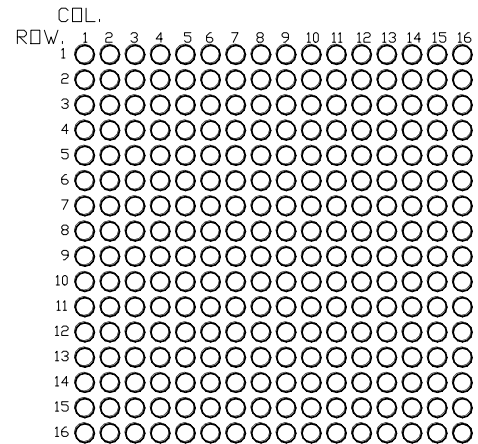
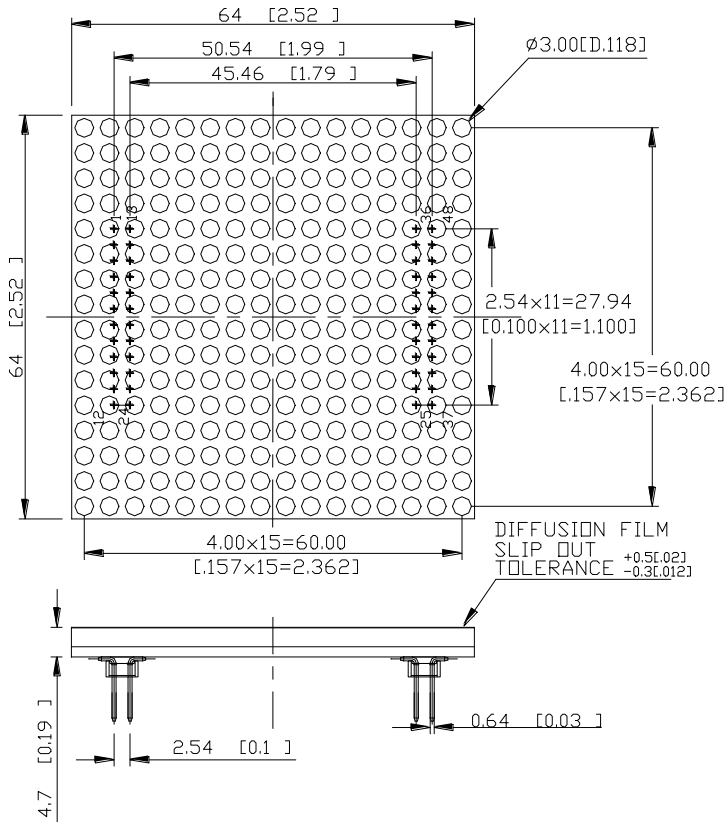
DESCRIPTION

The LTP-257FFM-01 is a 2.52 inch (64 mm) matrix height 16x16 dot matrix display. This device is multi-color applicable display. This device uses GREEN LED chips (GaP epi on GaP substrate), and RED ORANGE LED chips (GaAsP epi on GaP substrate). The display has a black face and a diffusion film is added on it.

DEVICE

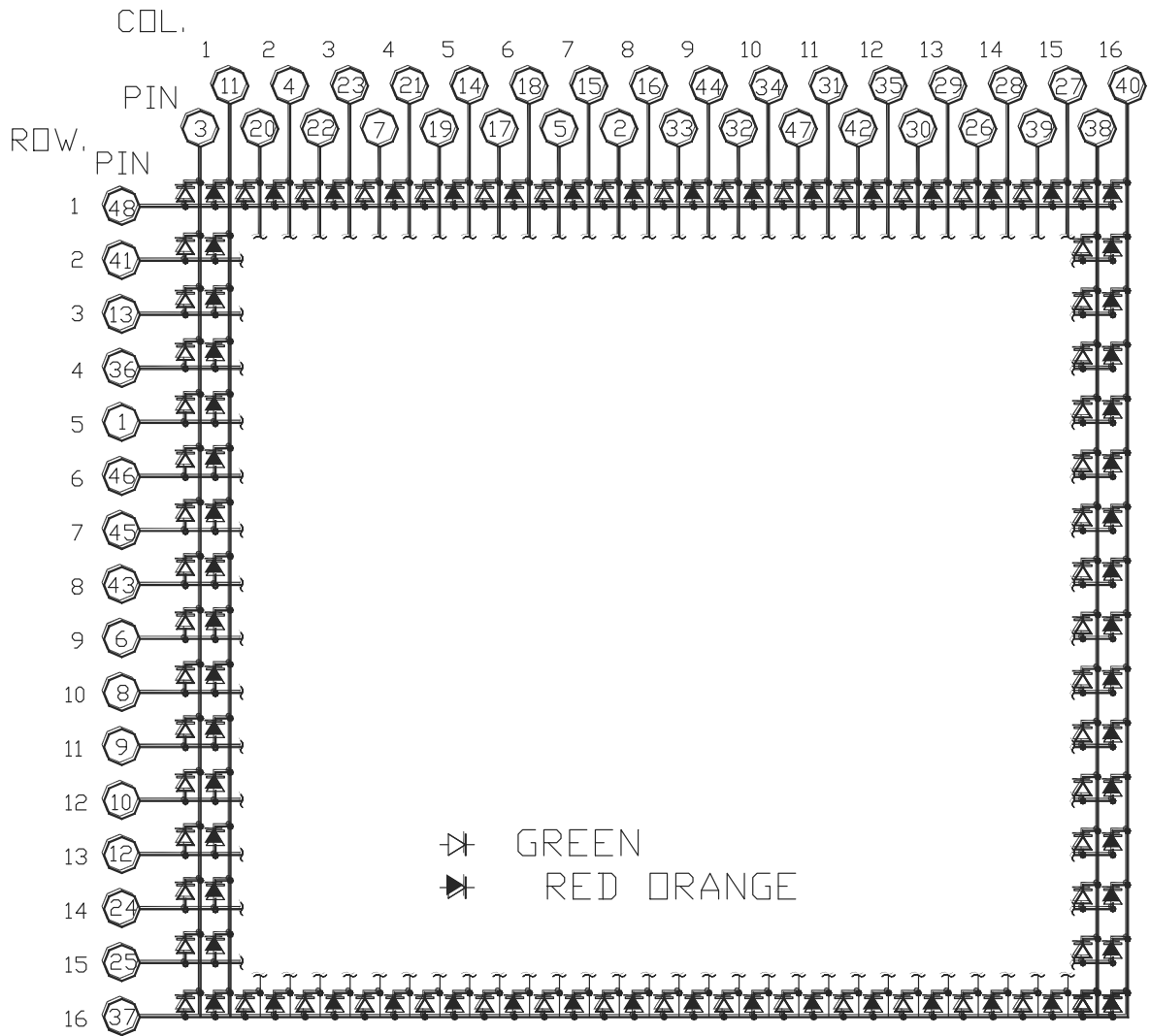
PART NO.	DESCRIPTION
Green & Red Orange	16x16 Dot Matrix Anode
LTP-257FFM-01	Row Cathode Column

PACKAGE DIMENSIONS



NOTES: All dimensions are in millimeters. Tolerances are ± 0.25 mm (0.01") unless otherwise noted.

INTERNAL CIRCUIT DIAGRAM



PIN CONNECTION

NO	CONNECTION	NO	CONNECTION
1	COMMON ANODE ROW 5	25	COMMON ANODE ROW 15
2	CATHODE COLUMN 8 GREEN	26	CATHODE COLUMN 14 GREEN
3	CATHODE COLUMN 1 GREEN	27	CATHODE COLUMN 15 RED
4	CATHODE COLUMN 2 RED	28	CATHODE COLUMN 14 RED
5	CATHODE COLUMN 7 GREEN	29	CATHODE COLUMN 13 RED
6	CATHODE COLUMN ROW 9	30	CATHODE COLUMN 13 GREEN
7	CATHODE COLUMN 4 GREEN	31	CATHODE COLUMN 11 RED
8	COMMON ANODE ROW 10	32	CATHODE COLUMN 10 GREEN
9	COMMON ANODE ROW 11	33	CATHODE COLUMN 9 GREEN
10	COMMON ANODE ROW 12	34	CATHODE COLUMN 10 RED
11	CATHODE COLUMN 1 RED	35	CATHODE COLUMN 12 RED
12	COMMON ANODE ROW 13	36	COMMON ANODE ROW 14
13	COMMON ANODE ROW 3	37	COMMON ANODE ROW 16
14	CATHODE COLUMN 5 RED	38	CATHODE COLUMN 16 GREEN
15	CATHODE COLUMN 7 RED	39	CATHODE COLUMN 15 GREEN
16	CATHODE COLUMN 8 RED	40	CATHODE COLUMN 16 RED
17	CATHODE COLUMN 6 GREEN	41	COMMON ANODE ROW 2
18	CATHODE COLUMN 6 RED	42	CATHODE COLUMN 12 GREEN
19	CATHODE COLUMN 5 GREEN	43	COMMON ANODE ROW 8
20	CATHODE COLUMN 2 GREEN	44	CATHODE COLUMN 1 RED
21	CATHODE COLUMN 4 RED	45	COMMON ANODE ROW 7
22	CATHODE COLUMN 3 GREEN	46	COMMON ANODE ROW 6
23	CATHODE COLUMN 3 RED	47	CATHODE COLUMN 11 GREEN
24	COMMON ANODE ROW 14	48	COMMON ANODE ROW 1

ABSOLUTE MAXIMUM RATING

GREEN

PARAMETER	MAXIMUM RATING	UNIT
Power Dissipation Per Segment	36	mW
Peak Forward Current Per Segment (Frequency 1Khz, 10% duty cycle)	100*	mA
Continuous Forward Current Per Segment	13	mA
Forward Current Derating from 25 ⁰ C	0.17	mA/ ⁰ C
Reverse Voltage Per Segment	5	V
Operating Temperature Range	-35 ⁰ C to +85 ⁰ C	
Storage Temperature Range	-35 ⁰ C to +85 ⁰ C	
Soldering Conditions : 1/16 inch below seating plane for 3 seconds at 260 ⁰ C		

* see figure 5 to establish pulsed condition

ELECTRICAL / OPTICAL CHARACTERISTICS AT T_A=25⁰C

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity Per Dot	I _v		570		μcd	I _p =80mA 1/16DUTY
Peak Emission Wavelength	λ _p		565		nm	I _F =20mA
Spectral Line Half-Width	Δλ		30		nm	I _F =20mA
Dominant Wavelength	λ _d		569		nm	I _F =20mA
Forward Voltage per Dot	V _F		2.1	2.6	V	I _F =20mA
Reverse Current per Dot	I _R			100	μA	V _R =5V
Luminous Intensity Matching Ratio	I _v -m			2:1		I _p =80mA 1/16DUTY

ABSOLUTE MAXIMUM RATING

RED

PARAMETER	MAXIMUM RATING	UNIT
Average Power Dissipation Per Dot	36	mW
Peak Forward Current Per Dot (Frequency 1Khz, 10% duty cycle)	100*	mA
Average Forward Current Per Dot	13	mA
Forward Current Derating From 25 ⁰ C	0.17	mA/ ⁰ C
Reverse Voltage Per Dot	5	V
Operating Temperature Range	-35 ⁰ C to +85 ⁰ C	
Storage Temperature Range	-35 ⁰ C to +85 ⁰ C	
Soldering Conditions: 1/16 inch Below Seating Plane for 3 Seconds at 260 ⁰ C		

* see figure 5 to establish pulsed condition

ELECTRICAL / OPTICAL CHARACTERISTICS AT T_A = 25⁰C

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity Per Dot	I _v		570		μcd	I _P = 80mA , 1/16Duty
Peak Emission Wavelength	λ _p		630		nm	I _F = 20mA
Spectral Line Half-Width	Δλ		40		nm	I _F = 20mA
Dominant Wavelength	λ _d		621		nm	I _F = 20mA
Forward Voltage Per Dot	V _F		2	2.6	V	I _F = 20mA
Reverse Current Per Dot	I _R			100	μA	V _R = 5V
Luminous Intensity Matching Ratio	I _v -m			2 : 1		I _P = 80mA , 1/16 Duty

Note: Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commision Internationale De L'Eclairage) eye-response curve.

TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

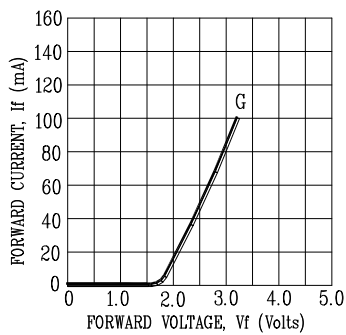
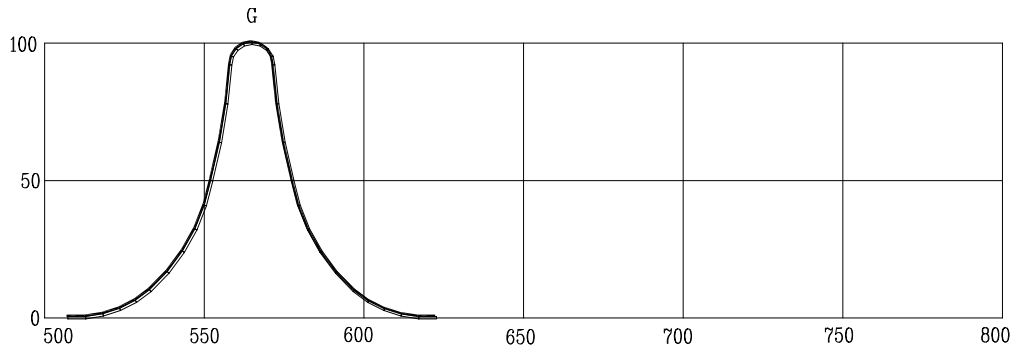


Fig2. Forward Current vs. Forward Voltage

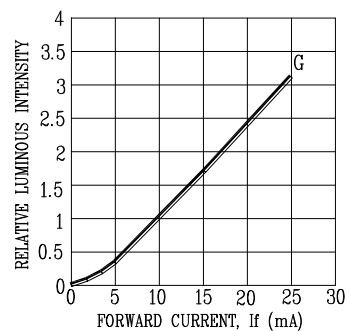


Fig3. Relative Luminous Intensity vs. DC Forward Current

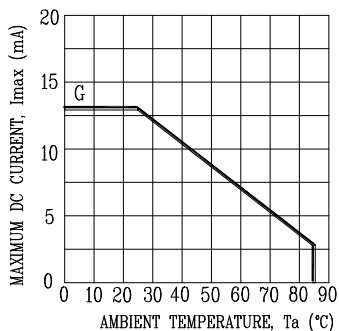


Fig4. Maximum Allowable DC Current vs. Ambient Temperature

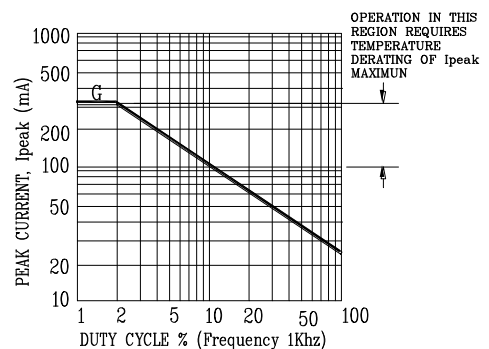
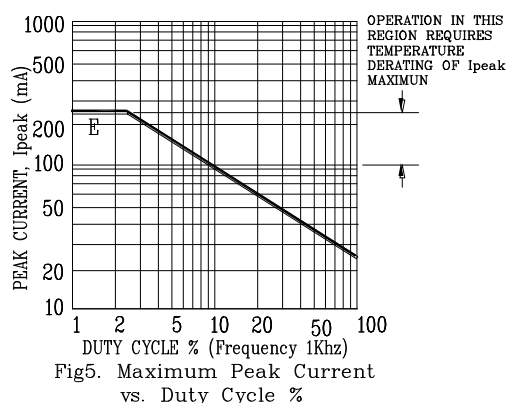
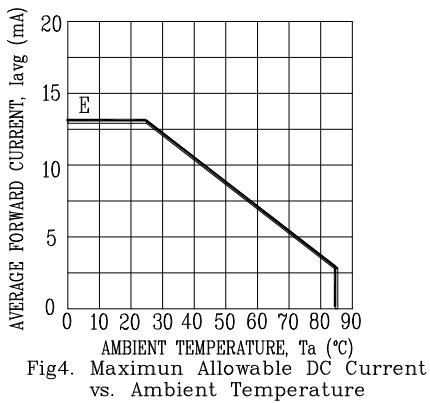
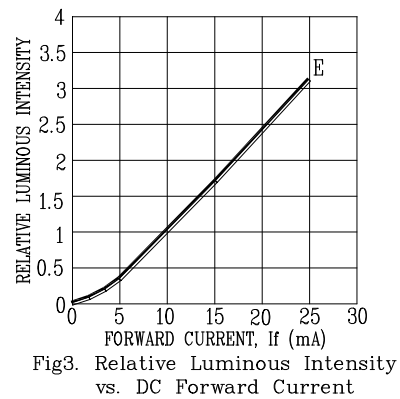
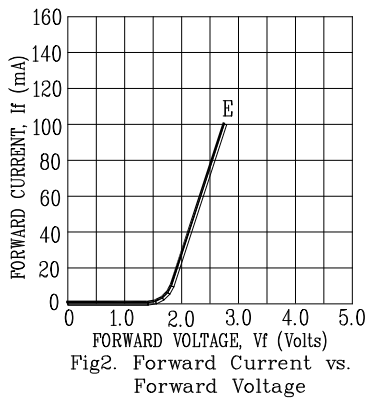
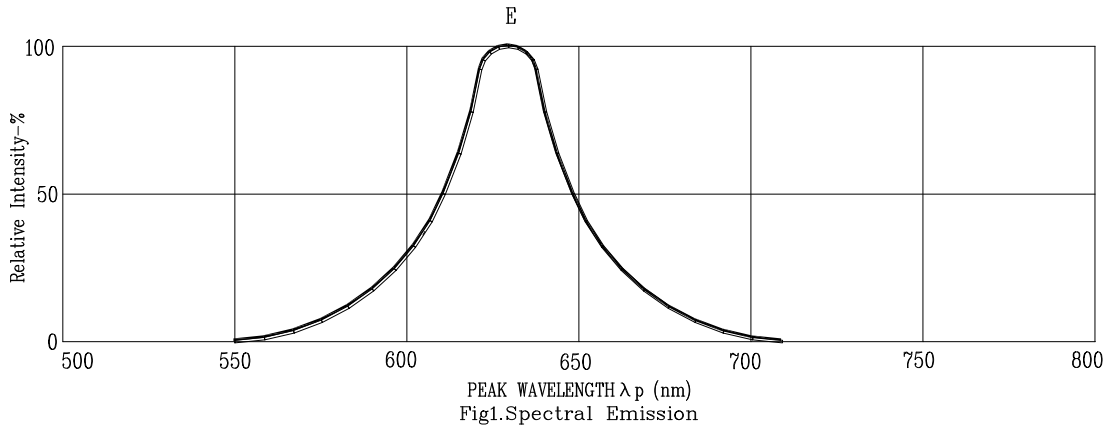


Fig5. Maximum Peak Current vs. Duty Cycle %

NOTE: G=GREEN

TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)



NOTE: E=RED ORANGE