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LITEON®
OPTOELECTRONICS

LED Display

Product Data Sheet

LTP-22157M

Spec No.: DS-30-95-122

Effective Date: 06/06/2000

Revision: -

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

FEATURES

∗2.2 inch (57.22 mm) MATRIX HEIGHT.
∗LOW POWER REQUIREMENT.
∗SINGLE PLANE, WIDE VIEWING ANGLE.
∗SOLID STATE RELIABILITY.
∗5 ×7 ARRAY WITH X-Y SELECT.
∗COMPATIBLE WITH USASCII AND EBCDIC CODES.
∗STACKABLE HORIZONTALLY.
∗CATEGORIZED FOR LUMINOUS INTENSITY.

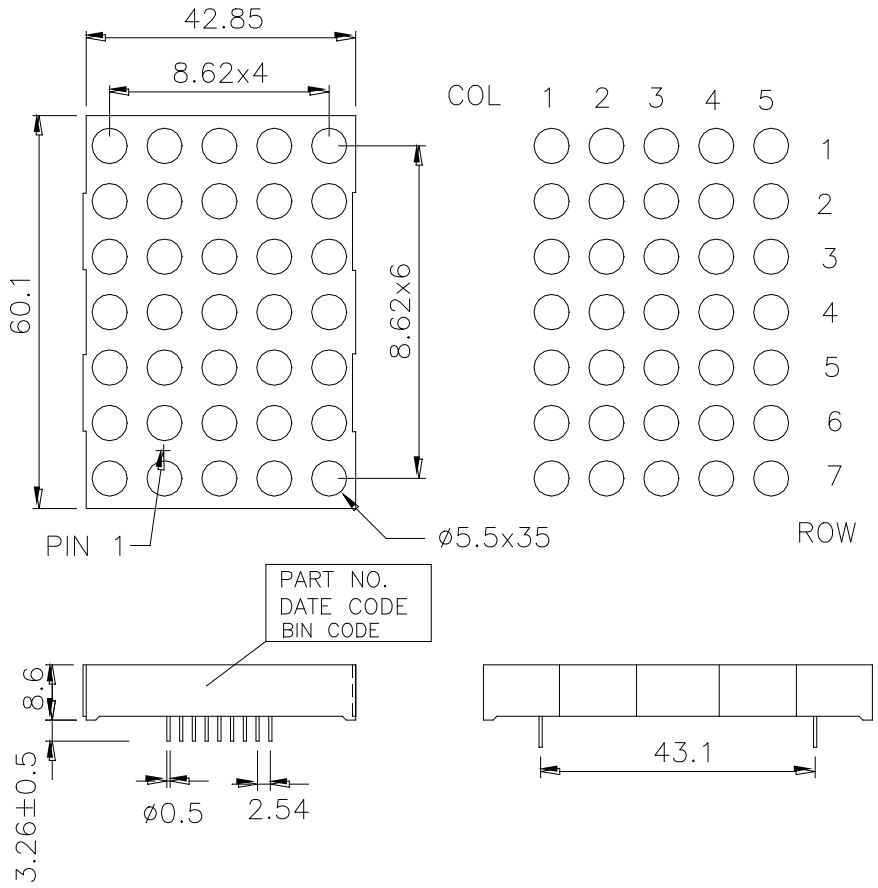
DESCRIPTION

The LTP-22157M is a 2.2 inch (57.22 mm) matrix height 5×7 dot matrix display. This device utilizes red orange and green LED chips, the green LED chips are made from GaP on GaP substrate , the red orange LED chips are made from GaAsP on GaP substrate, and has a gray face and white dots.

DEVICE

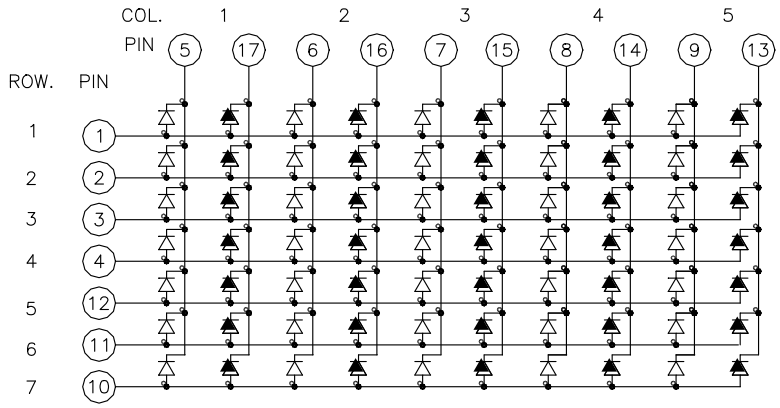
PART NO.	DESCRIPTION
RED ORANGR & GREEN	ANODE ROW
LTP-22157M	CATHODE COLUMN

PACKAGE DIMENSIONS



NOTES: All dimensions are in millimeters. Tolerances are ± 0.25 mm unless otherwise noted.

INTERNAL CIRCUIT DIAGRAM



PIN CONNECTION

No.	CONNECTION	No.	CONNECTION
1	ANODE ROW 1	10	ANODE ROW 7
2	ANODE ROW 2	11	ANODE ROW 6
3	ANODE ROW 3	12	ANODE ROW 5
4	ANODE ROW 4	13	CATHODE CLOUMN 5 RED ORANGE
5	CATHODE CLOUMN 1 GREEN	14	CATHODE CLOUMN 4 RED ORANGE
6	CATHODE CLOUMN 2 GREEN	15	CATHODE CLOUMN 3 RED ORANGE
7	CATHODE CLOUMN 3 GREEN	16	CATHODE CLOUMN 2 RED ORANGE
8	CATHODE CLOUMN 4 GREEN	17	CATHODE CLOUMN 1 RED ORANGE
9	CATHODE CLOUMN 5 GREEN	18	NO CONNECTION

ABSOLUTE MAXIMUM RATING AT Ta=25°C

GREEN

PARAMETER	MAXIMUM RATING	UNIT
Average Power Dissipation Per Dot	36	mW
Peak Forward Current Per Dot	100	mA
Average Forward Current Per Dot Derating Linear From 25℃ Per Dot	13 0.17	mA mA/℃
Reverse Voltage Per Segment	5	V
Operating Temperature Range	-35℃ to +85℃	
Storage Temperature Range	-35℃ to +85℃	
Solder Temperature: max 260℃ for max 3sec at 1.6mm[1/16inch] below seating plane.		

ELECTRICAL / OPTICAL CHARACTERISTICS AT Ta=25°C

GREEN

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I_V	1780	4800		μcd	I_p=80mA 1/16Duty
Peak Emission Wavelength	λp		565		nm	I_F=20mA
Spectral Line Half-Width	Δλ		30		nm	I_F=20mA
Dominant Wavelength	λd		569		nm	I_F=20mA
Forward Voltage any Dot	V_F		2.1	2.6	V	I_F=20mA
			3.0	3.7		I_F=80mA
Reverse Current any Dot	I_R			100	μA	V_R=5V
Luminous Intensity Matching Ratio	Iv-m			2:1		I_F=10mA

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

ABSOLUTE MAXIMUM RATING AT Ta=25°C

RED ORANGE

PARAMETER	MAXIMUM RATING	UNIT
Average Power Dissipation Per Dot	36	mW
Peak Forward Current Per Dot	100	mA
Average Forward Current Per Dot Derating Linear From 25℃ Per Dot	13 0.17	mA mA/℃
Reverse Voltage Per Segment	5	V
Operating Temperature Range	-35℃ to +85℃	
Storage Temperature Range	-35℃ to +85℃	
Solder Temperature: max 260℃ for max 3sec at 1.6mm[1/16inch] below seating plane.		

ELECTRICAL / OPTICAL CHARACTERISTICS AT Ta=25°C

RED ORANGE

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I_V	1780	4800		μcd	I_p=80mA 1/16Duty
Peak Emission Wavelength	λp		630		nm	I_F=20mA
Spectral Line Half-Width	Δλ		40		nm	I_F=20mA
Dominant Wavelength	λd		621		nm	I_F=20mA
Forward Voltage any Dot	V_F		2.0	2.6	V	I_F=20mA
			2.6	3.4		I_F=80mA
Reverse Current any Dot	I_R			100	μA	V_R=5V
Luminous Intensity Matching Ratio	Iv-m			2:1		I_F=10mA

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)

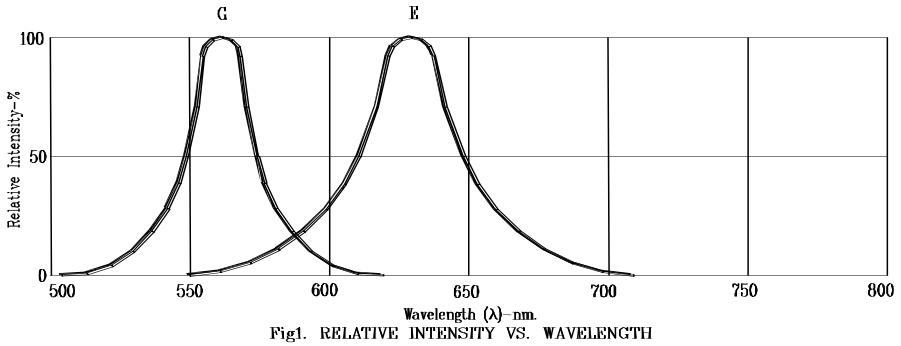


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

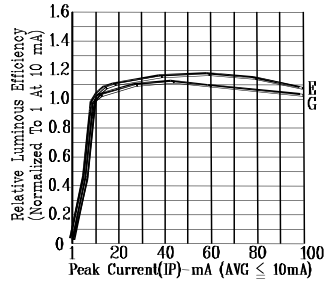


Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT (REFRESH RATE 1KHz)

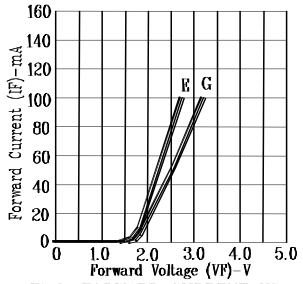


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

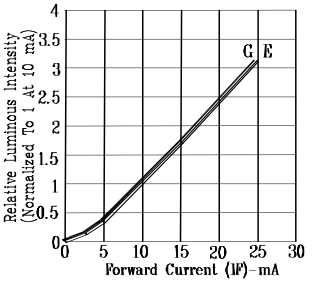


Fig4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

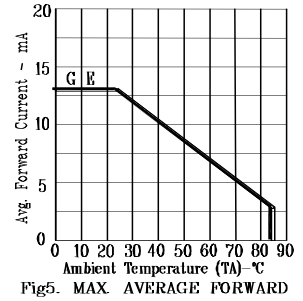


Fig5. MAX. AVERAGE FORWARD CURRENT VS. AMBIENT TEMPERATURE.

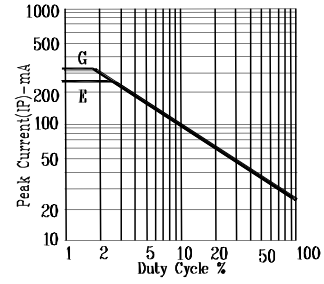


Fig6. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE: G=GREEN E=RED ORANGE