



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

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.

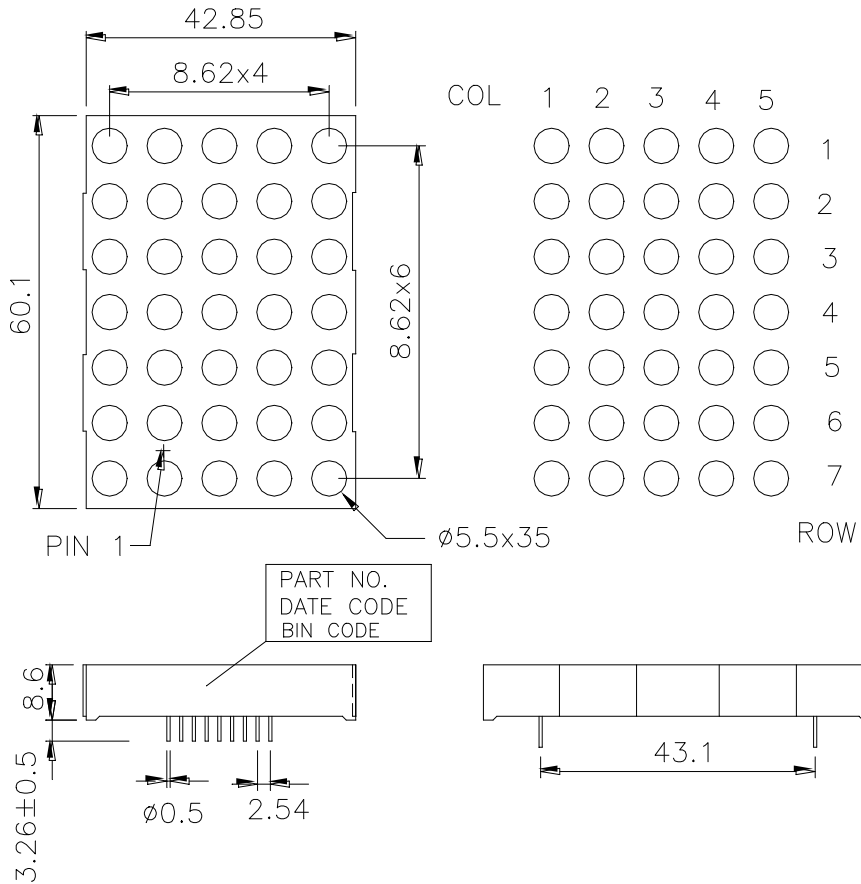
DESCRIPTION

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

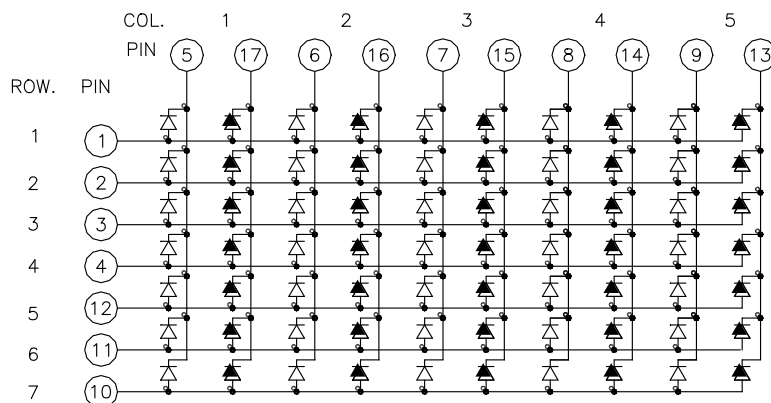
PART NO.	DESCRIPTION
RED ORANGR & GREEN	ANODE ROW
LTP-22157M	CATHODE COLUMN

PACKAGE DIMENSIONS



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

INTERNAL CIRCUIT DIAGRAM



THE SIGN "⚡" STANDS FOR GREEN CHIPS.

THE SIGN "⚡" STANDS FOR RED ORANGE CHIPS.

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	13	mA
Derating Linear From 25°C Per Dot	0.17	mA/°C
Reverse Voltage Per Segment	5	V
Operating Temperature Range	-35°C to +85°C	
Storage Temperature Range	-35°C to +85°C	
Solder Temperature: max 260°C 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	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 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	I _v -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	13	mA
Derating Linear From 25°C Per Dot	0.17	mA/°C
Reverse Voltage Per Segment	5	V
Operating Temperature Range	-35°C to +85°C	
Storage Temperature Range	-35°C to +85°C	
Solder Temperature: max 260°C 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	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 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	I _v -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)

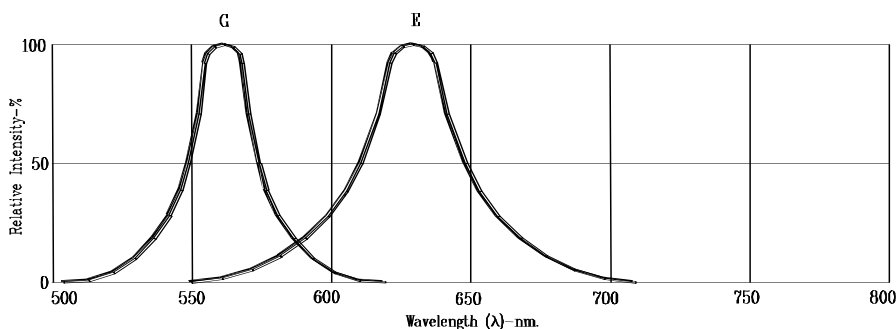


Fig.1. RELATIVE INTENSITY VS. WAVELENGTH

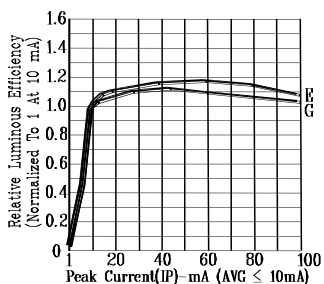


Fig.2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT (REFRESH RATE 1KHz)

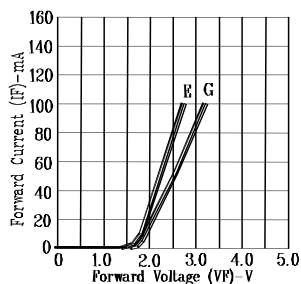


Fig.3. FORWARD CURRENT VS. FORWARD VOLTAGE

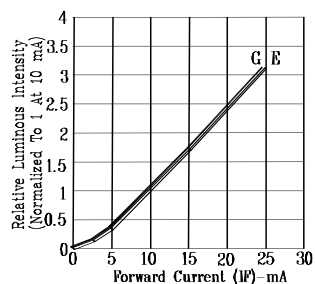


Fig.4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

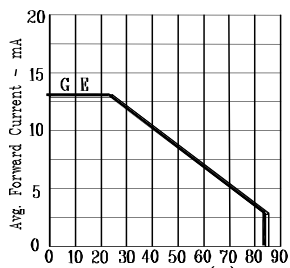


Fig.5. MAX AVERAGE FORWARD CURRENT VS. AMBIENT TEMPERATURE

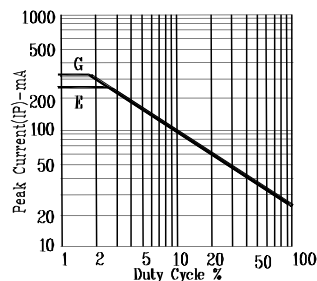


Fig.6. MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE: G=GREEN E=RED ORANGE