

FEATURES

- * 1.22 inch (31.0 mm) MATRIX HEIGHT.
- * LOW POWER REQUIREMENT.
- * SINGLE PLANE, WIDE VIEWING ANGLE.
- * SOLID STATE RELIABILITY.
- * 8 × 8 ARRAY WITH X-Y SELECT.
- * COMPATIBLE WITH USASCII AND EBCDIC CODES.
- * STACKABLE HORIZONTALLY.

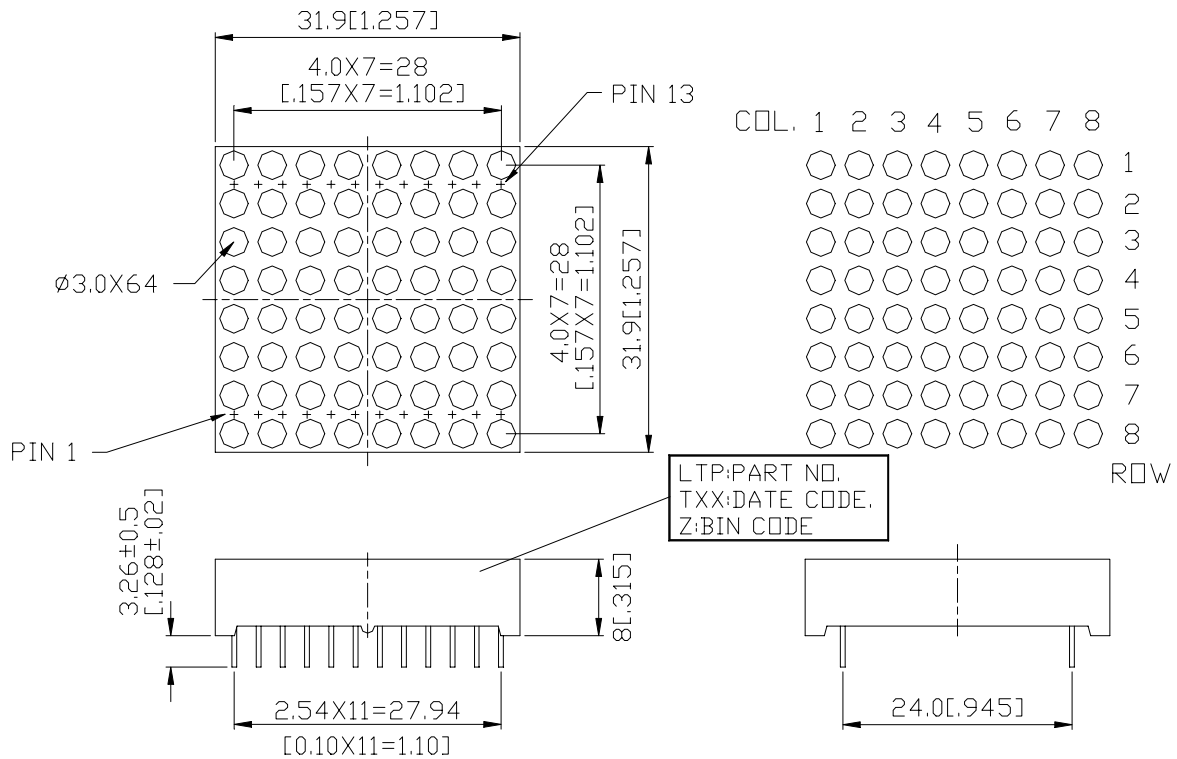
DESCRIPTION

The LTP-12188BM-03 is a 1.22 inch (31.0 mm) matrix height 8 × 8 dot matrix display. This device is multi-color applicable display. The green LED chips, which are made from GaP on a transparent GaP substrate. The AlGaAs Red LED chips, which are made from AlGaAs on a transparent GaAs substrate. The device has black face and white dots.

DEVICE

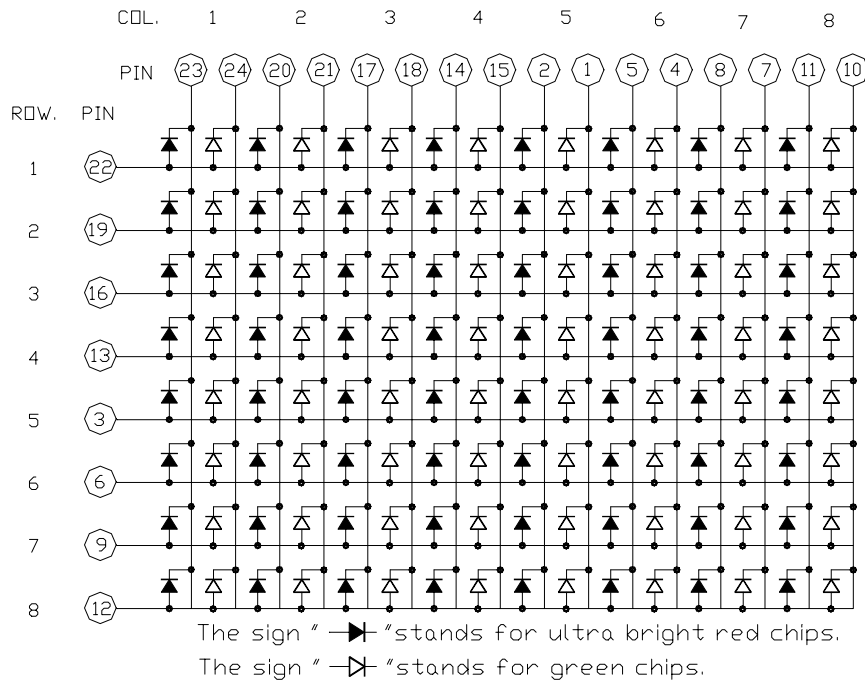
PART NO.	DESCRIPTION
MULTI-COLOR	ANODE ROW
LTP-12188BM-03	CATHODE COLUMN

PACKAGE DIMENSIONS



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

INTERNAL CIRCUIT DIAGRAM



PIN CONNECTION

NO	CONNECTION	NO	CONNECTION
1	CATHODE COL. 5 GREEN	13	ANODE ROW. 4
2	CATHODE COL. 5 RED	14	CATHODE COL. 4 RED
3	ANODE ROW. 5	15	CATHODE COL. 4 GREEN
4	CATHODE COL. 6 GREEN	16	ANODE ROW. 3
5	CATHODE COL. 6 RED	17	CATHODE COL. 3 RED
6	ANODE ROW. 6	18	CATHODE COL. 3 GREEN
7	CATHODE COL. 7 GREEN	19	ANODE ROW. 2
8	CATHODE COL. 7 RED	20	CATHODE COL. 2 RED
9	ANODE ROW. 7	21	CATHODE COL. 2 GREEN
10	CATHODE COL. 8 GREEN	22	ANODE ROW. 1
11	CATHODE COL. 8 RED	23	CATHODE COL. 1 RED
12	ANODE ROW 8	24	CATHODE COL. 1 GREEN

ABSOLUTE MAXIMUM RATING AT Ta=25°C

PARAMETER	GREEN	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 Dot	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	2300	5800		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

PARAMETER	AlGaAs RED	UNIT
Average Power Dissipation Per Dot	36	mW
Peak Forward Current Per Dot	125	mA
Average Forward Current Per Dot	15	mA
Derating Linear From 25°C Per Dot	0.20	mA/°C
Reverse Voltage Per Dot	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

AlGaAs RED

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I _v	3850	10000		μcd	I _p =80mA 1/16Duty
Peak Emission Wavelength	λ _p		660		nm	I _F =20mA
Spectral Line Half-Width	Δλ		35		nm	I _F =20mA
Dominant Wavelength	λ _d		638		nm	I _F =20mA
Forward Voltage any Dot	V _F		1.8	2.4	V	I _F =20mA
			2.0	3.1		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.

BIN DISTRIBUTION :

- TEST MODE: The binning specification is testing in yellow color mode.
- TEST CONDITION: See note.

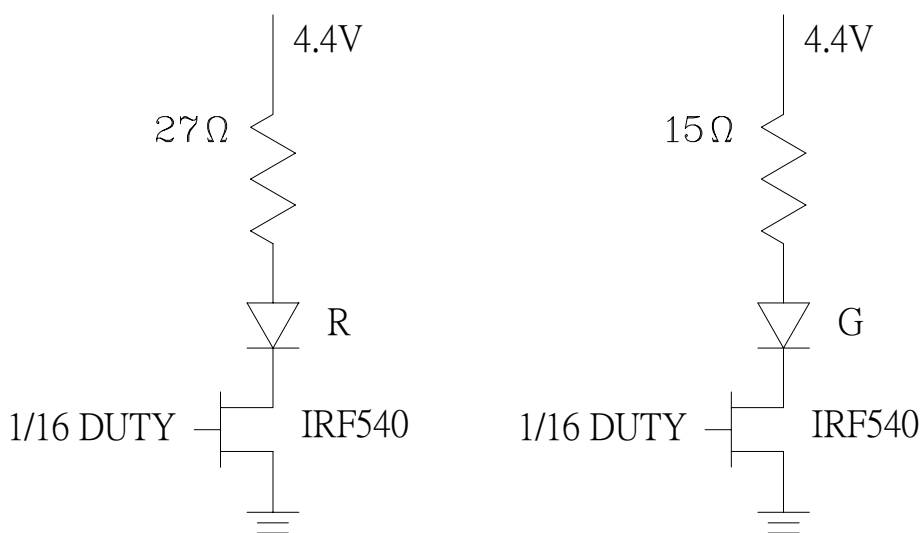
WAVE LENGTH

Code	48	50	52	54	56	58	60	62
nm	581.1	583.6	586.6	588.6	591.1	594.1	597.1	600.1
	:	:	:	:	:	:	:	:
	583.5	586.5	588.5	591.0	594.0	597.0	600.0	603.0

BRIGHTNESS

Code	L4	M1	M2	M3	M4	N1	N2	N3
mcd	4851	5401	6126	6851	7726	8601	9751	10901
	:	:	:	:	:	:	:	:
	5400	6125	6850	7725	8600	9750	10900	12300

Note :



TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

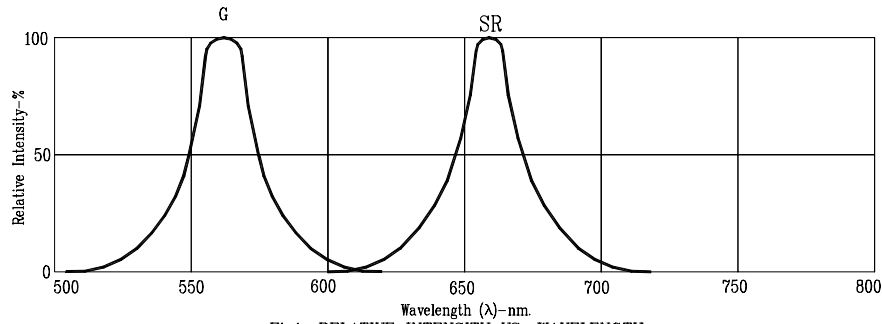


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

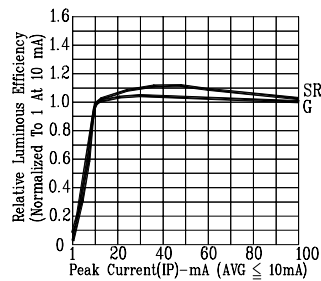


Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT (REFRESH RATE 1KHz)

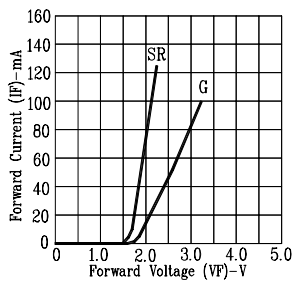


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

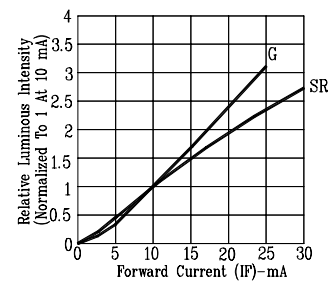


Fig4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

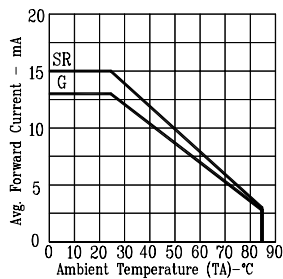


Fig5. MAX AVERAGE FORWARD CURRENT VS. AMBIENT TEMPERATURE.

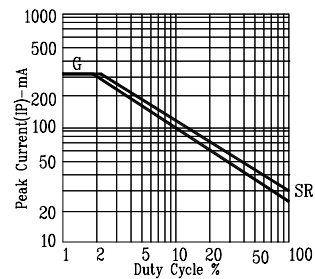


Fig6. MAX PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE: G=GREEN SR=AlGaAs RED