

FEATURES

- * 1.947-INCH (49.45-mm) MATRIX HEIGHT.
- * LOW POWER REQUIREMENT.
- * SINGLE PLANE, WIDE VIEWING ANGLE.
- * 5x8 ARRAY WITH X-Y SELECT.
- * COMPATIBLE WITH USASCII AND EBCDIC CODES.
- * STACKABLE VERTICALLY AND HORIZONTALLY.
- * EASY MOUNTING ON P.C. BOARD.
- * CATEGORIZED FOR LUMINOUS INTENSITY.
- * **LEAD-FREE PACKAGE**

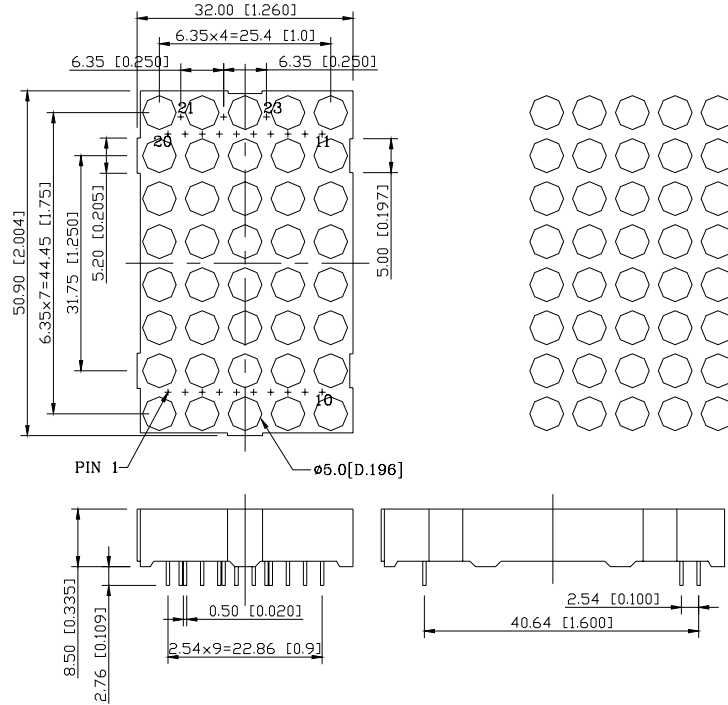
DESCRIPTION

The LTP-2P58BF is a 1.947-inch (49.45-mm) matrix height 5x8 dot matrix displays. This device is Full color applicable displays and has black face and white dots. This device uses AlGaAs RED LED chips (AlGaAs epi on GaAs substrate). This device uses InGaN GREEN LED chips (InGaN epi on SiC substrate). This device uses BLUE LED chips (GaN epi on SiC substrate).

DEVICE

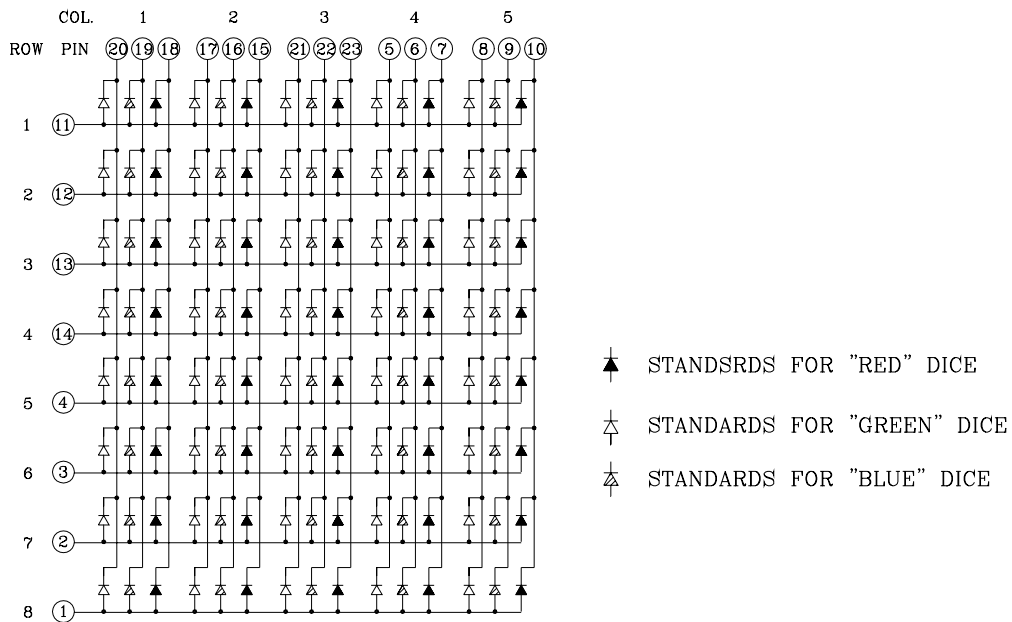
PART NO.	DESCRIPTION
FULL COLOR	Cathode Column
LTP-2P58BF	Anode Row

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
1	ANODE ROW 8
2	ANODE ROW 7
3	ANODE ROW 6
4	ANODE ROW 5
5	CATHODE COLUMN 4 GREEN
6	CATHODE COLUMN 4 BLUE
7	CATHODE COLUMN 4 AlGaAs RED
8	CATHODE COLUMN 5 GREEN
9	CATHODE COLUMN 5 BLUE
10	CATHODE COLUMN 5 AlGaAs RED
11	ANODE ROW 1
12	ANODE ROW 2
13	ANODE ROW 3
14	ANODE ROW 4
15	CATHODE COLUMN 2 AlGaAs RED
16	CATHODE COLUMN 2 BLUE
17	CATHODE COLUMN 2 GREEN
18	CATHODE COLUMN 1 AlGaAs RED
19	CATHODE COLUMN 1 BLUE
20	CATHODE COLUMN 1 GREEN
21	CATHODE COLUMN 3 GREEN
22	CATHODE COLUMN 3 BLUE
23	CATHODE COLUMN 3 AlGaAs RED

ABSOLUTE MAXIMUM RATINGS

PARAMETER	AlGaAs RED	UNIT
Average Power Dissipation Per Dot	36	mW
Peak Forward Current Per Dot (Frequency 1Khz, 10% duty cycle)	125	mA
Average Forward Current Per Dot	15	mA
Derating Linear From 25 Per Dot t	0.2	mA/°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	
Solder Temperature: max 260 ⁰ C for max 3sec at 1.6mm[1/16inch] below seating plane.		

ELECTRICAL/OPTICAL CHARACTERISTICS AT Ta=25

AlGaAs RED

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I _v		7500		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
Reverse Current any Dot	I _R			100	μA	V _R =5V
Luminous Intensity Matching Ratio	I _v -m			2:1		I _p =80mA 1/16Duty

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 RATINGS

PARAMETER	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
Derating Linear From 25 Per Dot	0.33	mA/°C
Reverse Voltage Per Dot	10	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
GREEN

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I _v		70000		μcd	I _p =80mA
						1/16Duty
Peak Emission Wavelength	λ _p		523		nm	I _F =20mA
Spectral Line Half-Width	Δλ		36		nm	I _F =20mA
Dominant Wavelength	λ _d		525		nm	I _F =20mA
Forward Voltage any Dot	V _F		3.5	4	V	I _F =20mA
Reverse Current any Dot	I _R			100	μA	V _R =10V
Luminous Intensity Matching Ratio	I _{v-m}			2:1		I _p =80mA 1/16Duty

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 RATINGS

PARAMETER	BLUE	UNIT
Average Power Dissipation Per Dot	72	mW
Peak Forward Current Per Dot (Frequency 1Khz, 35% duty cycle)	60	mA
Average Forward Current Per Dot	14	mA
Derating Linear From 25 Per Dot	0.19	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**BLUE**

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I _v		4800		μcd	I _p =80mA 1/16Duty
Peak Emission Wavelength	λ _p		430		nm	I _F =20mA
Spectral Line Half-Width	Δλ		65		nm	I _F =20mA
Dominant Wavelength	λ _d		468		nm	I _F =20mA
Forward Voltage any Dot	V _F		3.8	4.5	V	I _F =20mA
Reverse Current any Dot	I _R			100	μA	V _R =5V
Luminous Intensity Matching Ratio	I _v -m			2:1		I _p =80mA 1/16Duty

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)

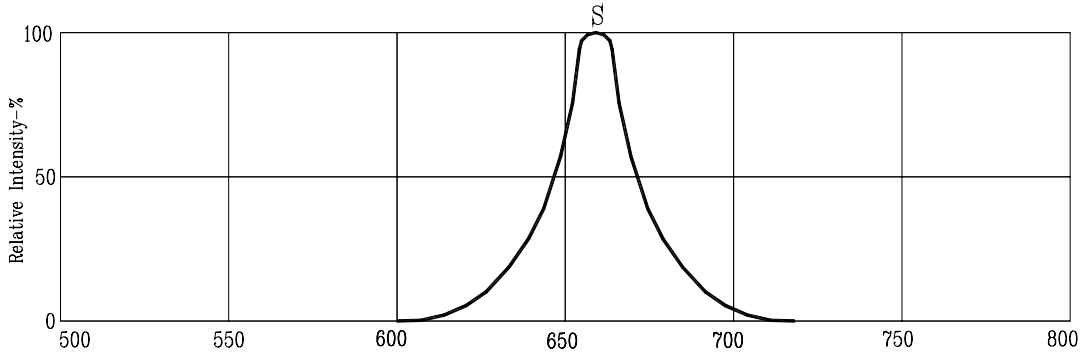


Fig1. Spectral Emission

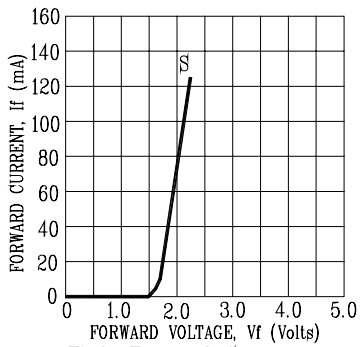


Fig2. Forward Current vs. Forward Voltage

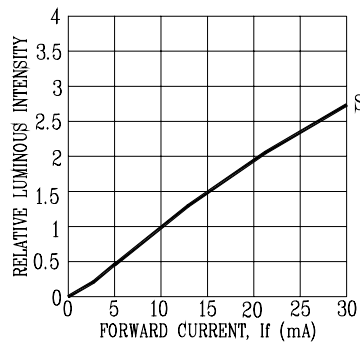


Fig3. Relative Luminous Intensity vs. DC Forward Current

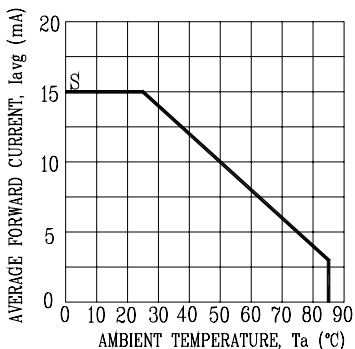


Fig4. Maximum Allowable DC Current vs. Ambient Temperature

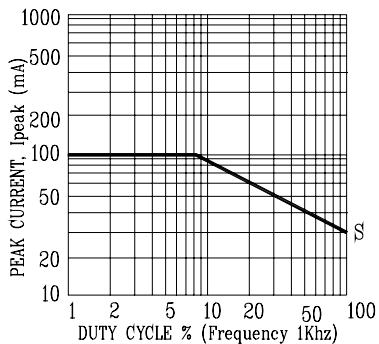


Fig5. Maximum Peak Current vs. Duty Cycle %

NOTE : S=AlGaAs RED

TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)

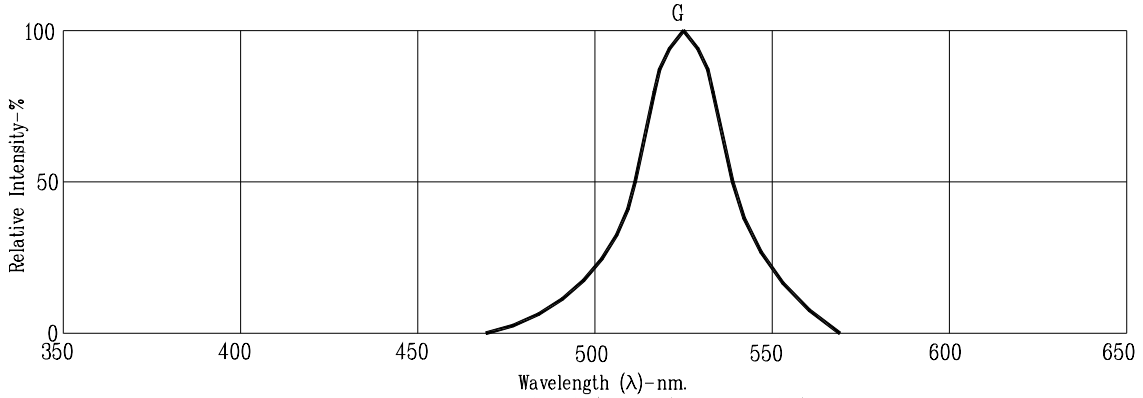


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

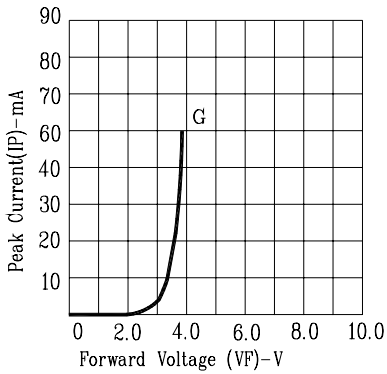


Fig2. FORWARD CURRENT VS. FORWARD VOLTAGE

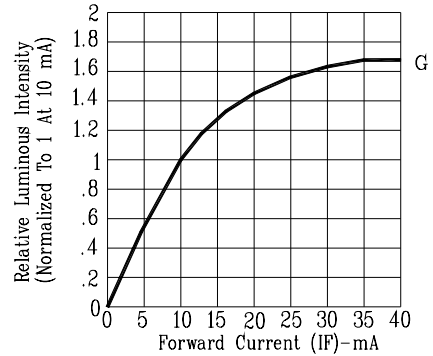


Fig3. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

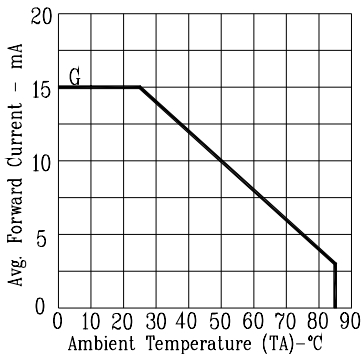


Fig4. MAX. AVERAGE FORWARD CURRENT VS. AMBIENT TEMPERATURE.

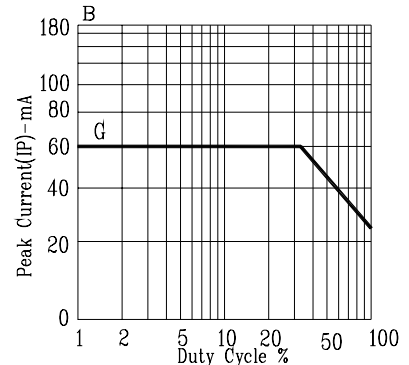
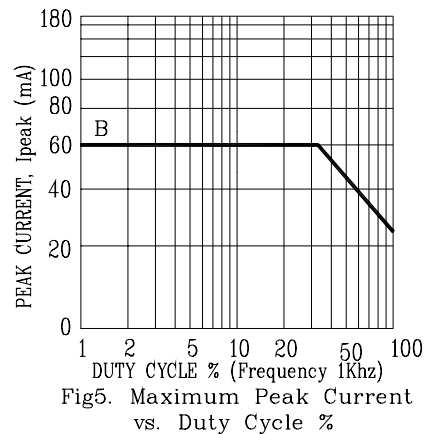
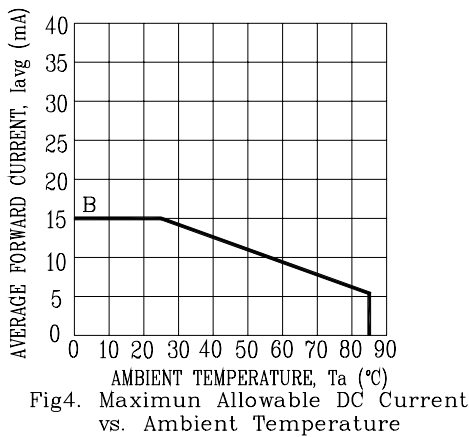
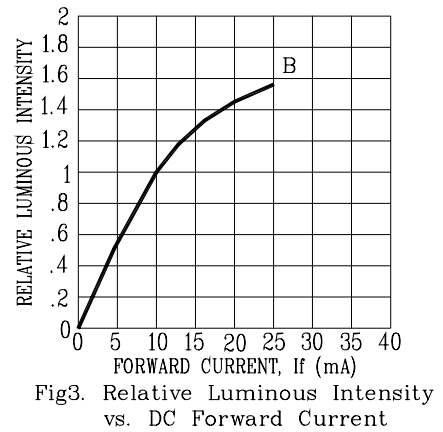
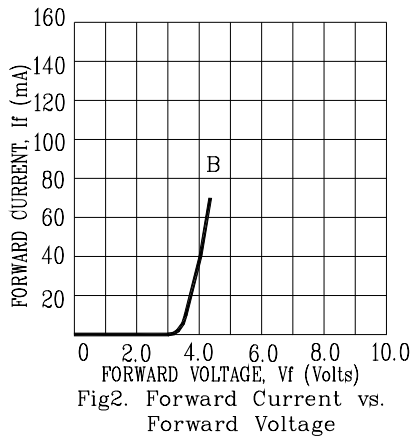
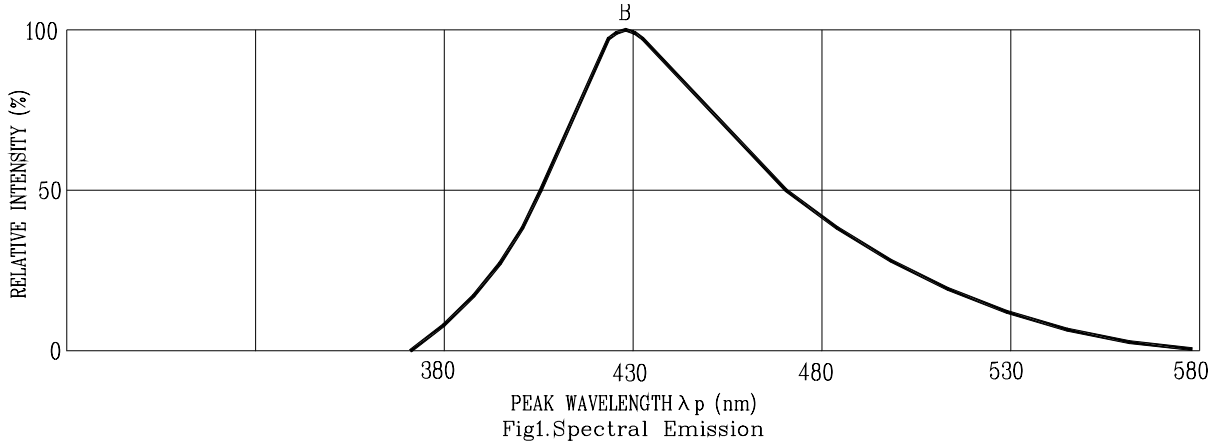


Fig5. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE: G=InGaN/Sapphire Green

TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES

(25°C Ambient Temperature Unless Otherwise Noted)



NOTE: B=GaN/SiC Blue