

5 ϕ 5 \times 7 Single Color & Multicolor Dot Matrix LED Displays

LTP-2057A/2157A Series
2657AA/2757AA

Features

- 2.0 inch (50.80mm) matrix height.
- Low power requirement.
- Single plane, wide viewing angle.
- Solid state reliability.
- 5 \times 7 array with X-Y select
- Compatible with usascII and ebcdic codes.
- Stackable horizontally.
- Choices of two matrix orientation
Cathode row or cathode column.
- Easy mounting on P.C. board.
- Categorized for luminous intensity.
- Single color displays have the choices of three bright colors-green/orange/ultra bright red.
- Multicolor displays are applicable to three bright colors : green, orange and yellow (green and orange mixed)

Description

The LTP-2X57A series are 2.0 inch (50.80mm) matrix height 5 \times 7 dot matrix displays.

The LTP-2657AA/2757AA are multicolor applicable displays. The multicolor displays have gray face and white dots.

The LTP-2057/2157A series are single color displays.

The green, ultra bright red and orange displays have gray face and white dots.

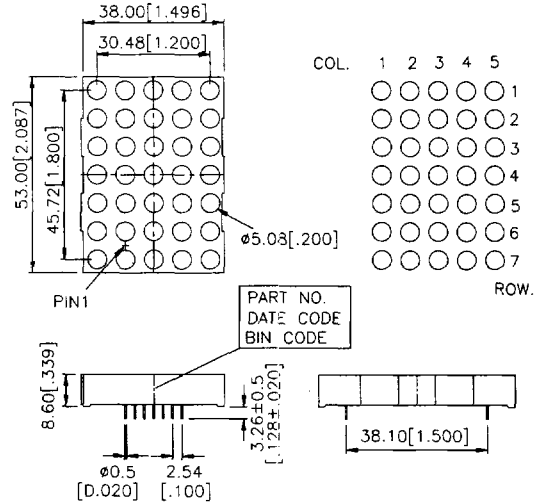
The green series devices utilize LED chips which are made from GaP on a transparent GaP substrate.

The orange series devices utilize LED chips which are made from GaAsP on a transparent GaP substrate.

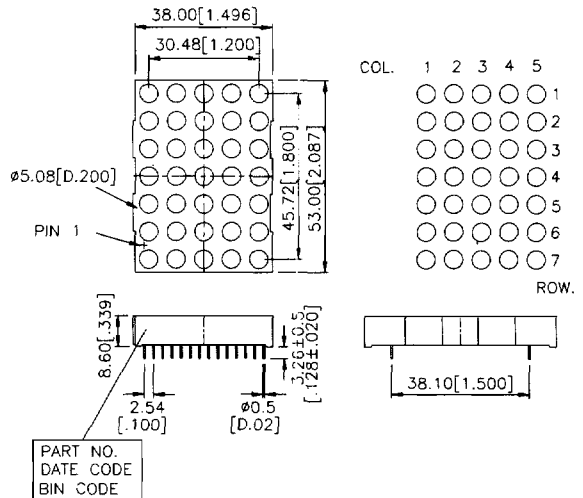
The ultra bright red series devices utilize LED chips which are made from AlGaAs on a non-transparent GaAs substrate.

Package Dimensions

A. LTP-2057A/2157A



B. LTP-2657AA/2757AA



Notes : All dimensions are in millimeters(inches).
Tolerance : \pm 0.25mm (0.01") unless otherwise noted.

Devices

Part No. LTP-				Description	Package Dimension	Internal Circuit Diagram
Green	Orange	Ultra Bright Red	Multi-Color			
2057AG	2057AE	2057AC	—	Anode Column, Cathode Row	A	A
2157AG	2157AE	2757AC	—	Cathode Column, Anode Row	A	B
—	—	—	2657AA	Anode Column, Cathode Row	B	C
—	—	—	2757AA	Cathode Column, Anode Row	B	D

Pin Connection

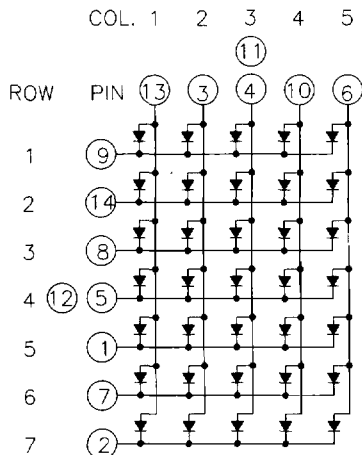
Pin No.	Connection	
	A. LTP-2057A	B. LTP-2157A
1	Cathode Row 5	Anode Row 5
2	Cathode Row 7	Anode Row 7
3	Anode Column 2	Cathode Column 2
4	Anode Column 3*1	Cathode Column 3*1
5	Cathode Row 4*2	Anode Row 4*2
6	Anode Column 5	Cathode Column 5
7	Cathode Row 6	Anode Row 6
8	Cathode Row 3	Anode Row 3
9	Cathode Row 1	Anode Row 1
10	Anode Column 4	Cathode Column 4
11	Anode Column 3*1	Cathode Column 3*1
12	Cathode Row 4*2	Anode Row 4*2
13	Anode Column 1	Cathode Column 1
14	Cathode Row 2	Anode Row 2

- Notes : 1. Pin 4 & 11 are internally connected.
 2. Pin 5 & 12 are internally connected.

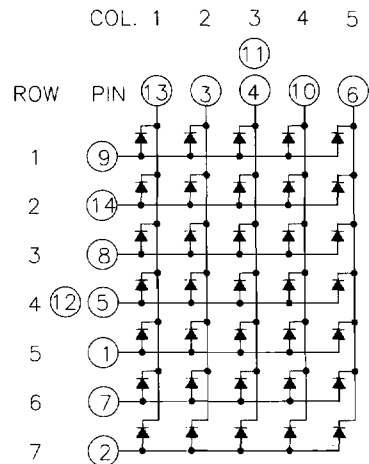
Pin No.	Connection	
	C. LTP-2657AA	D. LTP-2757AA
1	Anode Column 1 Green	Cathode Column 1 Green
2	Anode Column 1 Orange	Cathode Column 1 Orange
3	Cathode Row 7 Green	Anode Row 7 Green
4	Cathode Row 7 Orange	Anode Row 7 Orange
5	Anode Column 2 Green	Cathode Column 2 Green
6	Anode Column 2 Orange	Cathode Column 2 Orange
7	Anode Column 3 Green	Cathode Column 3 Green
8	Anode Column 3 Orange	Cathode Column 3 orange
9	Cathode Row 5 Green	Anode Row 5 Green
10	Cathode Row 5 Orange	Anode Row 5 Orange
11	Cathode Row 4 Green	Anode Row 4 Green
12	Cathode Row 4 Orange	Anode Row 4 Orange
13	Cathode Row 6 Green	Anode Row 6 Green
14	Cathode Row 6 Orange	Anode Row 6 Orange
15	Anode Column 5 Green	Cathode Column 5 Green
16	Anode Column 5 Orange	Cathode Column 5 Orange
17	Cathode Row 1 Green	Anode Row 1 Green
18	Cathode Row 1 Orange	Anode Row 1 Orange
19	Anode Column 4 Green	Cathode Column 4 Green
20	Anode Column 4 Orange	Cathode Column 4 Orange
21	Anode Column 3 Green	Cathode Column 3 Green
22	Anode Column 3 Orange	Cathode Column 3 Orange
23	Cathode Row 3 Green	Anode Row 3 Green
24	Cathode Row 3 Orange	Anode Row 3 Orange
25	Cathode Row 4 Green	Anode Row 4 Green
26	Cathode Row 4 Orange	Anode Row 4 Orange
27	Cathode Row 2 Green	Anode Row 2 Green
28	Cathode Row 2 Orange	Anode Row 2 Orange

Internal Circuit Diagrams

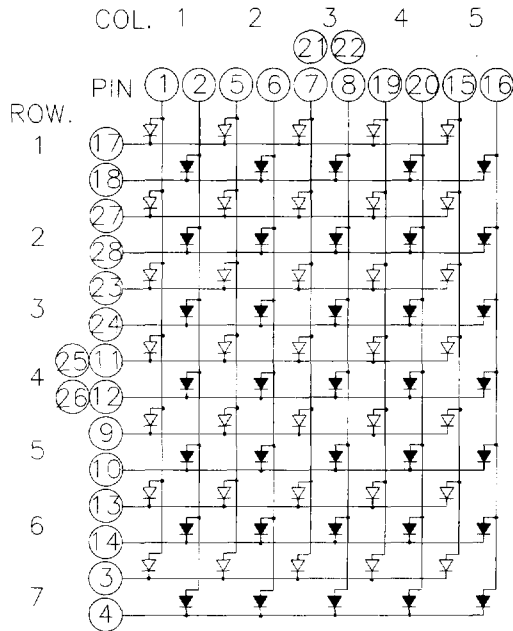
A. LTP-2057A



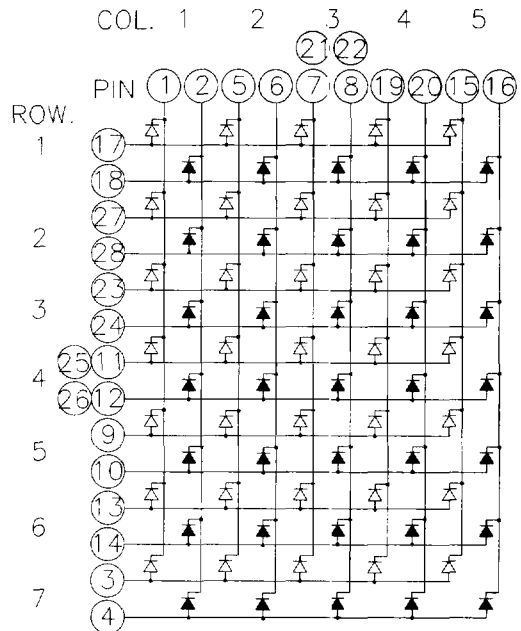
B. LTP-2157A



C. LTP-2657AA



B. LTP-2757AA



DOT MATRIX
LED DISPLAYS

Notes : The Sign "↔" stands for Green color chips.
The Sign "→" stands for Orange color chips.

Absolute Maximum Ratings at Ta=25 °C

Parameter	Green	Orange	Ultra Bright Red	Unit
Average Power Dissipation Per Dot	36	36	36	mW
Peak Forward Current Per Dot	100	100	125	mA
Average Forward Current Per Dot Derating Linear from 25 °C Per Dot	13 0.17	13 0.17	15 0.20	mA mA/ °C
Reverse Voltage Per Dot	5	5	5	V
Operating Temperature Range	-35 °C to +85 °C			
Storage Temperature Range	-35 °C to +85 °C			
Solder Temperature 1/16 Inch Below Seating Plane for 3 Seconds at 260 °C				

Electrical/Optical Characteristics at Ta=25 °C
LTP-2057AG/2157AG & LTP-2657AA/2757AA(Green)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Average Luminous Intensity	Iv	1780	4800		μ cd	IP=80mA 1/16Duty
Peak Emission Wavelength	λp		565		nm	IF=20mA
Spectral Line Half-Width	Δ λ		30		nm	IF=20mA
Dominant Wavelength	λd		569		nm	IF=20mA
Forward Voltage, any Dot	VF		2.1	2.8	V	IF=20mA
			3.0	3.7	V	IF=80mA
Reverse Current, any Dot	IR			100	μ A	VR=5V
Luminous Intensity Matching Ratio	Iv-m			2:1		IF=10mA

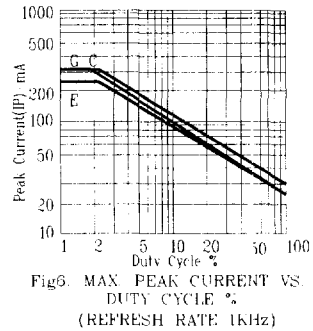
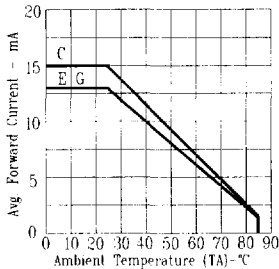
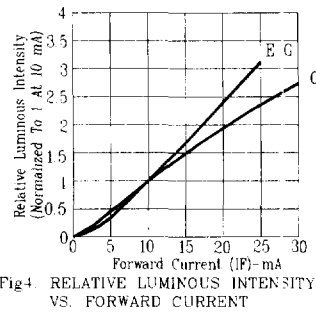
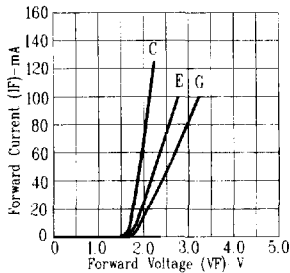
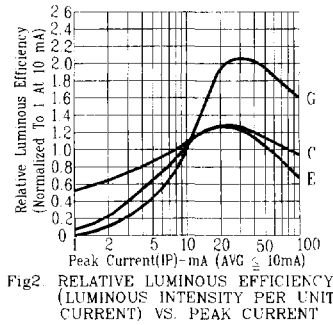
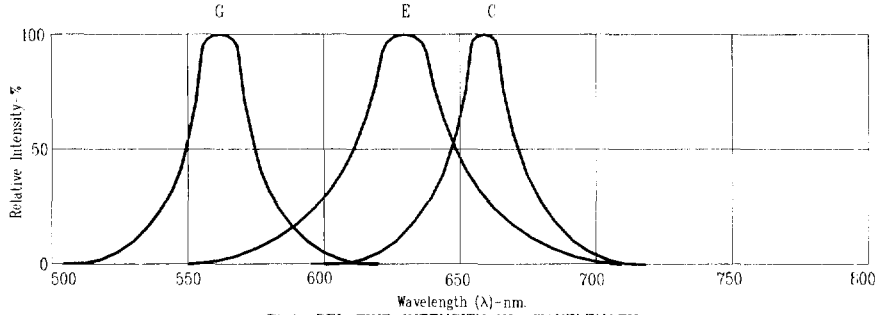
LTP-2057AE/2157AE & LTP-2657AA/2757AA(Orange)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Average Luminous Intensity	Iv	1780	4800		μ cd	IP=80mA 1/16Duty
Peak Emission Wavelength	λp		630		nm	IF=20mA
Spectral Line Half-Width	Δ λ		40		nm	IF=20mA
Dominant Wavelength	λd		621		nm	IF=20mA
Forward Voltage, any Dot	VF		2.0	2.8	V	IF=20mA
			2.6	3.4	V	IF=80mA
Reverse Current, any Dot	IR			100	μ A	VR=5V
Luminous Intensity Matching Ratio	Iv-m			2:1		IF=10mA

LTP-2057AC/2157AC

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Average Luminous Intensity	Iv	6300	12000		μ cd	IP=80mA 1/16Duty
Peak Emission Wavelength	λp		660		nm	IF=20mA
Spectral Line Half-Width	Δ λ		35		nm	IF=20mA
Dominant Wavelength	λd		638		nm	IF=20mA
Forward Voltage, any Dot	VF		1.8	2.4	V	IF=20mA
			2.0	2.7	V	IF=80mA
Reverse Current, any Dot	IR			100	μ A	VR=5V
Luminous Intensity Matching Ratio	Iv-m			2:1		IF=10mA

Typical Electrical/Optical Characteristic Curves (25 °C Ambient Temperature Unless Otherwise Noted)



NOTE: G=GREEN E=ORANGE C=ULTRA BRIGHT RED (REFRESH RATE 1KHz)

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LED DISPLAYS