

LTP- 2057A/2157A 24E D S

2.0"5 x 7 SINGLE COLOR & MULTICOLOR DOT MATRIX DISPLAYS

TAIWAN LITON ELECTRONIC

■ 8835547 0000522 7 ■

T-41-35

FEATURES

- •1.2" INCH (30.48mm) MATRIX HEIGHT.
- LOW POWER REQUIREMENT.
- HIGH CONTRAST,
- HIGH BRIGHTNESS.
- SINGLE PLANE, WIDE VIEWING ANGLE.
- SOLID STATE RELIABILITY.
- ●5×7 ARRAY WITH X-Y SELECT.
- COMPATIBLE WITH USASCII AND EBCDIC CODES,
- •STACKABLE HORIZONTALLY.
- CHOICE OF TWO MATRIX ORIENTATION CATHODE ROW OR CATHODE COLUMN.
- EASY MOUNTING ON P.C. BOARD.
- CATEGORIZED FOR LUMINOUS INTENSITY.
 SINGLE COLOR DISPLAYS HAVE THE CHOICE
 OF FOUR BRIGHT COLORS-GREEN / YELLOW /
 ORANGE / HIGH EFFICIENCY RED.
- MULTICOLOR DISPLAYS ARE APPLICABLE TO THREE BRIGHT COLORS: GREEN, ORANGE AND YELLOW (GREEN AND ORANGE MIXED)

DESCRIPTION

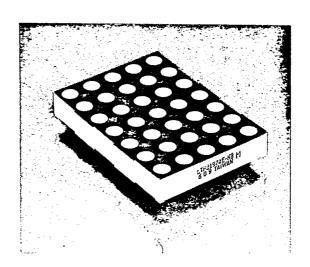
The LTP-2 x 57A series are 2.0 inch (50.80mm) matrixheight 5 x 7 dot matrix displays.

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

The LTP-2057/2157A series are single color displays. The green, yellow and orange displays have gray face and white dot color. The high efficiency red displays have red face and red dot color.

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

The yellow, orange and high efficiency red series devices utilize LED chips which are made from GaAsP on a transparent GaP substrate.



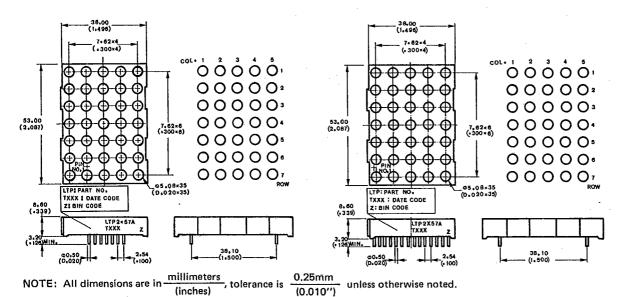
DEVICES

PART NO. LTP-								
GREEN	YELLOW	ORANGE	HI.EFF. RED	MULTI- COLOR	DESCRIPTION	PACKAGE DIMENSION	INTERNAL CIRCUIT DIAGRAM	
2057AG	2057AY	2057AE	2057AHR	-	Anode Column, Cathode Row	Α	Α	
2157AG	2157AY	2157AE	2157AHR		Cathode Column, Anode Row	Α	В	
		-	-	2657AA	Anode Column, Cathode Row	В	С	
		_	-	2757AA	Cathode Column, Anode Row	В	р	

PACKAGE DIMENSIONS

A. LTP-2057A/2157A

B. LTP-2657AA/2757AA



24E D

PIN CONNECTION

	CONNECTION					
PIN NO.	A. LTP-2057A	B. LTP-2157A				
1. 1.	Cathode Row 5	Anode Row 5				
2	Cathode Row 7	Anade Row 7				
3	Anode Column 2	Cathode Column 2				
4	Arrode 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	Cathoda Column 4				
11	Anade Column 3*1	Cathode Column 3*1.				
12	Cathode Row 4*2	Anodr 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.

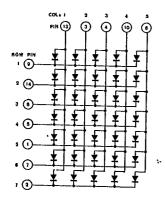
2. Pin 5 & 12 are internally connected.

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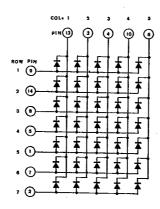
PIN NO.	CONNECTION				
· · · · · · · · · · · · · · · · · · ·	C. LTP-2657AA	D. LTP-2757AA			
1	Anode Column 1 Green	Cathode Column 1 Green			
2	Anode Column 1 Orange 1	Cathode Column 1 Orange			
3	Cathode Row 7 Green	Anode Row 7 Green			
4	Cathode Row 7 Orange	Anode Row 7 Orange			
5	Anode Column 2 Green	Cathode Column 2 Green			
6	Anode Column 2 Orange	Cathode Column 2 Orange			
7	Anode Column 3 Green	Cathode Column 3 Green			
8	Anode Colunn 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 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			
26	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 DIAGRAM

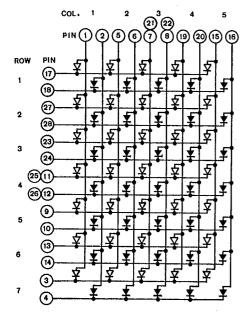
A. LTP-2057A



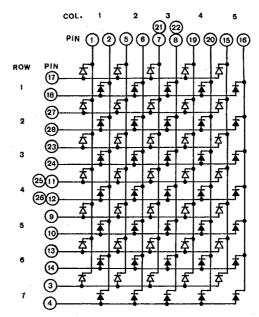
B. LTP-2157A



C. LTP:2657AA



D. LTP-2757AA



NOTES: 1. The sign "→→" stands for GREEN color chips.

2. The sign "→→" stands for ORANGE color chips.

ABSOLUTE MAXIMUM RATINGS AT TA = 25°C

PARAMETER	GREEN	YELLOW	ORANGE	HI-EFF RED	UNIT
Power Dissipation Per Dot	75	60	76	75	mW
Peak Forward Current Per Dot (1/10 Duty Cycle, 0.1 ms Pulse Width)	100	80	100	100	mA
Continuous Forward Current Per Dot	25	20	25	25	mA
Derating Linear From 25°C Per Dot	0.3	0,24	0.3	0.3	mA/°C
Reverse Voltage Per Dot	5	5	5	5	ν ·
Operating Temperature Range			–25°C to + 85°C		
Storage Temperature Range			–25°C to +85°C		

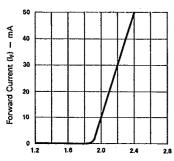
ELECTRICAL/OPTICAL CHARACTERISTICS AT T_A = 25°C LTP-2057AG/2157AG & LTP-2657AA/2757AA (GREEN)

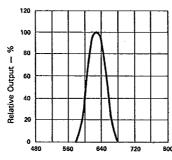
PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	lv	960 .	4000		μed	lp = 48 mA 1/8 DUTY
Peak Emission Wavelength	λρ		565		nm	lr = 20 mA
Spectral Line Half-Width	Δλ		30		nm	1F = 20 mA
Forward Voltage, any Dot	VF		2,1	2.8	ν	. IF = 20 mA
Reverse Current, any Dot	JR -			100	μΑ	Vn = 5V
Luminous Intensity Matching Ratio	lv-m			2:1		tr = 20 mA

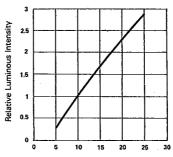
Note: The BIN brightness classification see page 5-70, LTP-2057AG/2157AG categorize D and LTP-2657AA/2757AA categorize D-1.

TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES

(25° C Ambient Temperature Unless Otherwise Noted)



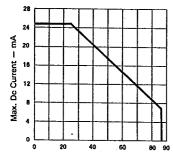


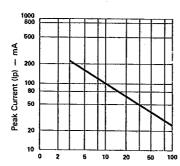


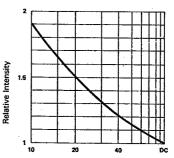
Forward Voltage (V_F) — Volts Fig. 1 FORWARD CURRENT Vs. FORWARD VOLTAGE.

Wavelength (λ) — nm. Fig. 2 SPECTRAL RESPONSE.

Forward Current (I_F) — mA Fig. 3 RELATIVE, LUMINOUS INTENSITY Vs. FORWARD CURRENT (PER SEGMENT).







Ambient Temperature (Ta) -- °C

Fig.4 MAX. ALLOWABLE DC CURRENT PER SEG. Fig.5 MAX. PEAK CURRENT Vs. DUTY CYCLE.% Fig.6 LUMINOUS INTENSITY Vs. DUTY CYCLE% (REFRESH RATE - F = 1 KHz)

Vs. AMBIENT TEMPERATURE. (REFRESH RATE - F = 1 KHz) (AVERAGE |_F = 10mA PER SEG.)

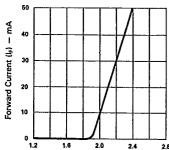
ELECTRICAL/OPTICAL CHARACTERISTICS AT TA = 25°C LTP-2057AY/2157AY

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST
Average Luminous Intensity	*	750	4000		род	lp = 48 mA 1/8 DUTY
Peak Emission Wavelength	λp e		585		nm	IF = 20 mA
Spectral Line Half-Width	ልአ		35		nm	ir = 20 mA
Forward Voltage, any Dot	VF		2.1	2.8	V	IF = 20 mA
Reverse Current, any Dot	in:			100	μА	V4 = 5V
Luminous Intensity Matching Ratio	lv-m			2:1		IF = 20 mA .

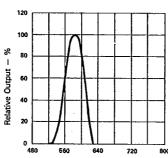
Note: The BIN brightness classification see page 5-70, category D

TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES

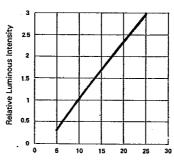
(25°C Ambient Temperature Unless Otherwise Noted)



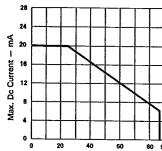
Forward Voltage ($V_{\rm F}$) — Volts Fig. 1 FORWARD CURRENT Vs. FORWARD VOLTAGE.



Wavelength (λ) — nm. Fig. 2 SPECTRAL RESPONSE.



Forward Current (I_F) -- mA Fig. 3 RELATIVE LUMINOUS INTENSITY Vs. FORWARD CURRENT (PER SEGMENT).



Ambient Temperature (Ta) - °C

Current (lp) 100 80 50 Peak 10

500

200

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Relative Intensity Ambient Temperature (Ta) -- °C Duty Cycle %

Fig. 4 MAX. ALLOWABLE DC CURRENT PER SEG. Fig. 5 MAX. PEAK CURRENT Vs. DUTY CYCLE.% Fig. 6 LUMINOUS INTENSITY Vs. DUTY CYCLE% Vs AMBIENT TEMPERATURE. (REFRESH RATE - F = 1 KHz) (AVERAGE |_E = 1 0mA PER SEG.)

1.5



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