2 ϕ 5 × 7 Single Color Dot Matrix LED Displays

LTP-747 Series
757

Features

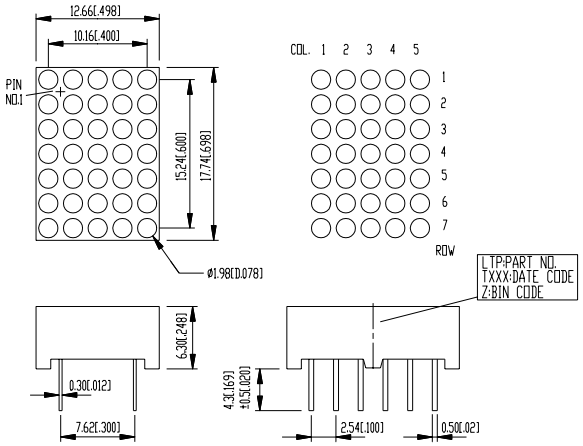
- 0.7 inch (17.22mm) matrix height
- Choices of four bright colors-green/yellow/red orange/ AlGaAs red.
- Low power requirement.
- 5 × 7 array with X-Y select.
- Compatible with usascll and ebcdic codes.
- Stackable vertically and horizontally.
- Choices of two matrix orientation.
  Cathode row, or cathode column.
- Easy mounting on P.C. board or sockets.
- Categorized for luminous intensity.

Description

The LTP-747/757 series are 0.7 inch (17.2mm) matrix height 5 × 7 dot matrix displays. The green, yellow, red orange and AlGaAs red displays have gray face and white dots.

The AlGaAs red series devices utilize LED chips which are made from AlGaAs on a non-transparent GaAs substrate. The green series devices utilize LED chips which are made from GaP on a transparent GaP substrate. The yellow and red orange series utilize LED chips which are made from GaAsP on a transparent GaP substrate.

Package Dimensions



Notes : All dimensions are in millimeters(inches).
Tolerance : ± 0.25mm (0.010") unless otherwise noted.

Devices

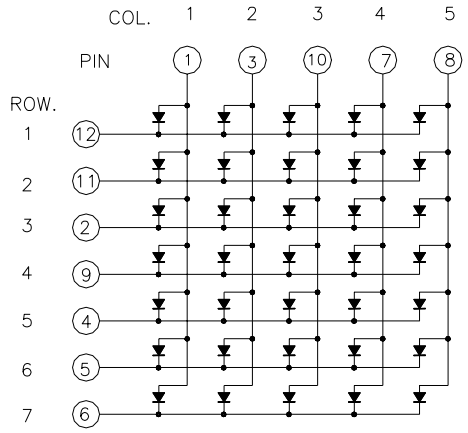
Part No.				Description	Internal Circuit Diagram
Green	Yellow	Red Orange	AlGaAs Red		
LTP-747G	LTP-747Y	LTP-747E	LTP-747C	Anode Column, Cathode Row	A
LTP-757G	LTP-757Y	LTP-757E	LTP-757C	Cathode Column, Anode Row	B

Pin Connection

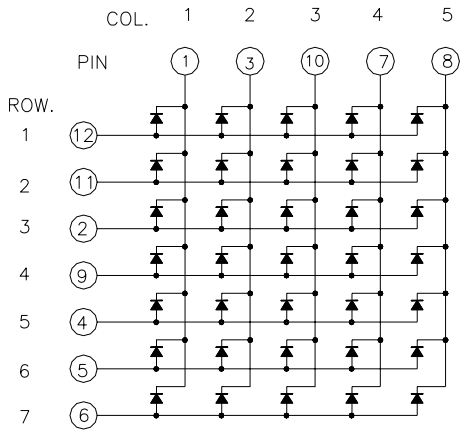
Pin No.	Connection	
	LTP-747	LTP-757
1	Anode Column 1	Cathode Column 1
2	Cathode Row 3	Anode Row 3
3	Anode Column 2	Cathode Column 2
4	Cathode Row 5	Anode Row 5
5	Cathode Row 6	Anode Row 6
6	Cathode Row 7	Anode Row 7
7	Anode Column 4	Cathode Column 4
8	Anode Column 5	Cathode Column 5
9	Cathode Row 4	Anode Row 4
10	Anode Column 3	Cathode Column 3
11	Cathode Row 2	Anode Row 2
12	Cathode Row 1	Anode Row 1

Internal Circuit Diagrams

A. LTP-747



B. LTP-757



Absolute Maximum Ratings at Ta=25℃

Parameter	Green	Yellow	Red Orange	AlGaAs Red	Unit
Average Power Dissipation Per Dot	32	28	32	32	mW
Peak Forward Current Per Dot (1/10 Duty Cycle, 0.1ms Pulse Width)	90	80	90	110	mA
Average Forward Current Per Dot Derating Linear from 25℃ Per Dot	11 0.15	8 0.11	11 0.15	14 0.19	mA mA/℃
Reverse Voltage Per Dot	5	5	5	5	V
Operating Temperature Range	-35℃ to +85℃				
Storage Temperature Range	-35℃ to +85℃				
Solder Temperature 1/16 Inch Below Seating Plane for 3 Seconds at 260℃					

Electrical/Optical Characteristics at Ta=25℃

LTP-747G/757G

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Average Luminous Intensity	I_V	630	2000		μcd	I_P=80mA 1/16 Duty
Peak Emission Wavelength	λ_P		565		nm	I_F=20mA
Spectral Line Half-Width	$\Delta\lambda$		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	V	I_F=80mA
Reverse Current, any Dot	I_R			100	μA	V_R=5V
Luminous Intensity Matching Ratio	I_{V-m}			2:1		I_P=80mA 1/16 Duty

LTP-747Y/757Y

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Average Luminous Intensity	I_V	630	2000		μ cd	I_P=80mA 1/16 Duty
Peak Emission Wavelength	λP		585		nm	I_F=20mA
Spectral Line Half-Width	$\Delta\lambda$		35		nm	I_F=20mA
Dominant Wavelength	λd		588		nm	I_F=20mA
Forward Voltage, any Dot	V_F		2.1	2.6	V	I_F=20mA
			3.0	3.7	V	I_F=80mA
Reverse Current, any Dot	I_R			100	μ A	V_R=5V
Luminous Intensity Matching Ratio	I_V-m			2:1		I_P=80mA 1/16 Duty

LTP-747E/757E

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Average Luminous Intensity	I_V	630	2000		μ cd	I_P=80mA 1/16 Duty
Peak Emission Wavelength	λP		630		nm	I_F=20mA
Spectral Line Half-Width	$\Delta\lambda$		40		nm	I_F=20mA
Dominant Wavelength	λd		621		nm	I_F=20mA
Forward Voltage, any Dot	V_F		2.0	2.6	V	I_F=20mA
			2.6	3.4	V	I_F=80mA
Reverse Current, any Dot	I_R			100	μ A	V_R=5V
Luminous Intensity Matching Ratio	I_V-m			2:1		I_P=80mA 1/16 Duty

LTP-747C/757C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Average Luminous Intensity	I_V	5000	9000		μ cd	I_P=80mA 1/16 Duty
Peak Emission Wavelength	λP		660		nm	I_F=20mA
Spectral Line Half-Width	$\Delta\lambda$		35		nm	I_F=20mA
Dominant Wavelength	λd		638		nm	I_F=20mA
Forward Voltage, any Dot	V_F		1.8	2.4	V	I_F=20mA
			2.0	3.1	V	I_F=80mA
Reverse Current, any Dot	I_R			100	μ A	V_R=5V
Luminous Intensity Matching Ratio	I_V-m			2:1		I_P=80mA 1/16 Duty

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℃ Ambient Temperatrue Unless Otherwise Noted)

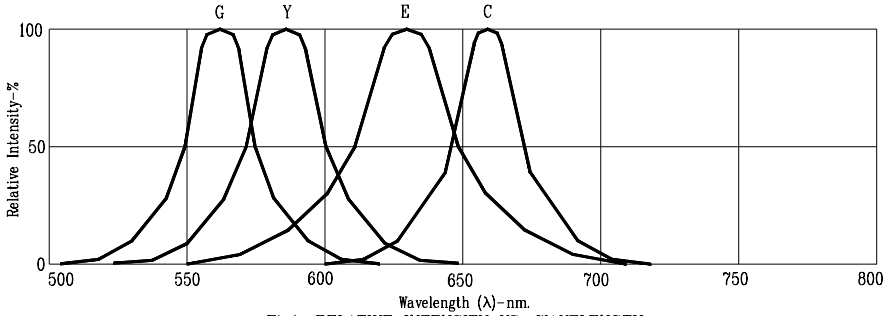


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

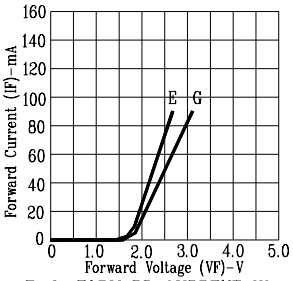


Fig2. FORWARD CURRENT VS. FORWARD VOLTAGE

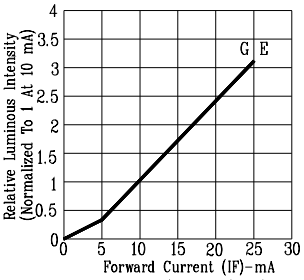


Fig3. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

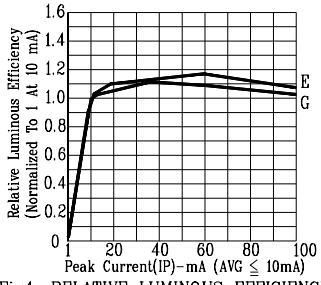


Fig4. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT

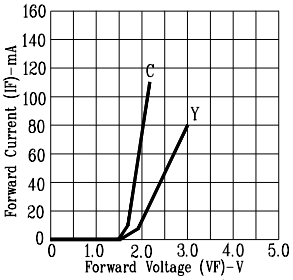


Fig5. FORWARD CURRENT VS. FORWARD VOLTAGE

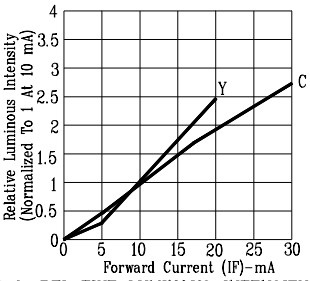


Fig6. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

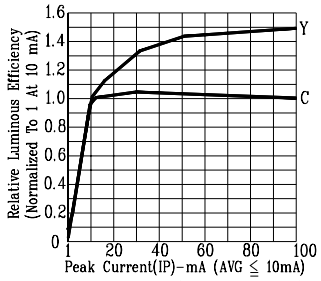


Fig7. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT

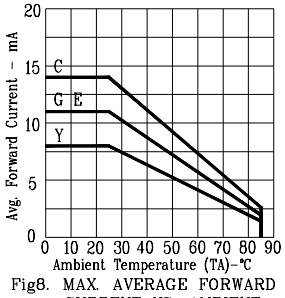


Fig8. MAX. AVERAGE FORWARD CURRENT VS. AMBIENT TEMPERATURE.

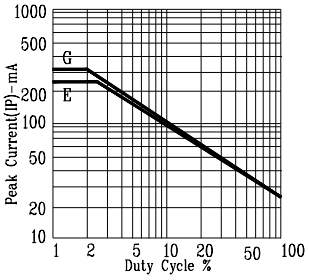


Fig9. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

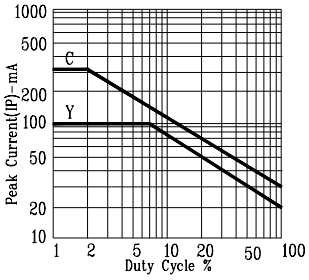


Fig10. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE: G=GREEN E=RED ORANGE C=AlGaAs RED Y=YELLOW (REFRESH RATE 1KHz)