

# LT1451ED

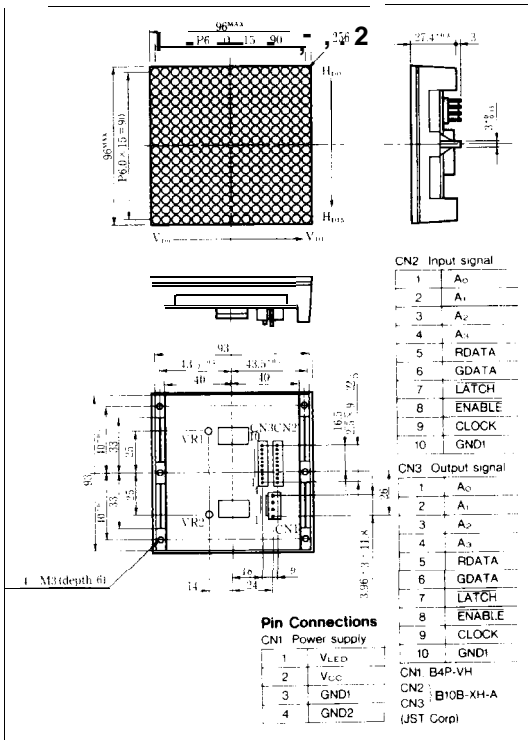
1 6X 16 Dot Matrix LED Unit for Indoor Use

## ■ Features

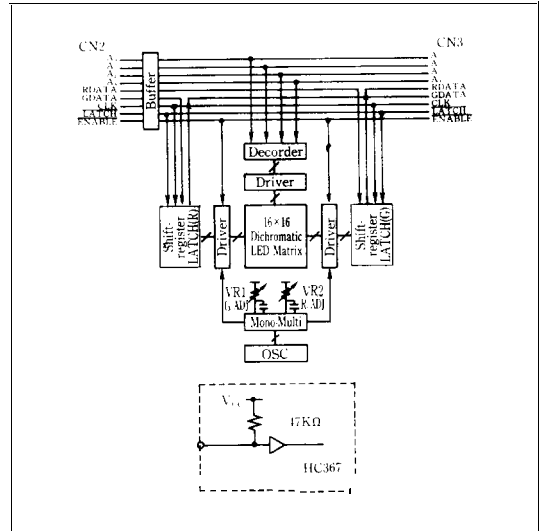
1. 16×16 dot matrix LED unit
2. Active display size: 95.7mm square
3. Three color emission by use of dichromatic LED
4. Radiation color: Red, yellow-green and orange (mixed color)
5. Wide viewing angle
6. Built-in shift registers, latch circuits, LED driver ICS, scanning line select circuits and luminance adjusting circuits
7. Clock frequency: 4MHz
8. Dynamic drive (Duty ratio: 1/16)

## ■ Outline Dimensions

(Unit: mm)



## ■ Block Diagram



## ■ Terminal Functions

Connector	Pin No.	Name	Function	
CN1 (Power supply)	1	V <sub>LED</sub>	Power supply for LED	
	2	V <sub>CC</sub>	Power supply for IC	
	3	GND1	Ground for IC	
	4	GND2	Ground for LED	
CN2 (Input signal)	1 to 4	A <sub>0</sub> to A <sub>3</sub>	Address specification signal for row driver	
	5	RDATA	Serial data input for red (H: lit, L: no lit)	
	6	GDATA	Serial data input for Yellow-green (H: lit, L: no lit)	
	7	LATCH	L: The contents are latched	
	8	ENABLE	"L": Each dot can be driven in accordance with data	
	9	CLOCK	Clock signal for data transmission in the shift-register. (L→H: The data are shifted)	
	10	GND1	Ground for IC	
	CN3 (Output signal)	1 to 4	A <sub>0</sub> to A <sub>3</sub>	Buffered the input signals A <sub>0</sub> to A <sub>3</sub>
		5	RDATA	Input signal is generated through 16-bit shift register in the unit.
		6	GOATA	
7		LATCH	Buffered the input signal LATCH.	
8		ENABLE	Buffered the input signal ENABLE	
9		CLOCK	Buffered the input signal CLOCK.	
10	GND1	Ground for IC		

### Absolute Maximum Ratings

(Ta = 25°C)

Parameter	Symbol	Rating	Unit
IC supply voltage	V <sub>CC</sub>	6.0	V
LED supply voltage	V <sub>LED</sub>	6.0	V
Input voltage	V <sub>I</sub>	*15.5	V
LED current dissipation	I <sub>LED</sub>	*22.4	A
Operating temperature range	T <sub>opr</sub>	-10 to +45	°C
Storage temperature range	T <sub>stg</sub>	-20 to +70	°C

\*1 V<sub>I</sub> < V<sub>CC</sub> at V<sub>CC</sub> ≤ 5.5

\*2 When all dots are lit, Duty ratio: 1 / 16

### Electro-optical Characteristics

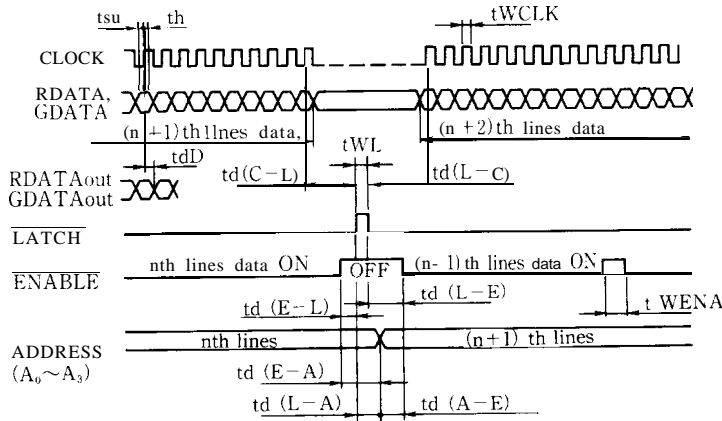
(Ta = 25°C, V<sub>CC</sub> = 5V, V<sub>LED</sub> = 5V)

Parameter	Symbol	MIN	TYP	MAX	Unit
Operating IC supply voltage	V <sub>CC</sub>	4.75	5.0	5.25	V
Operating LED supply voltage	V <sub>LED</sub>		5.0	5.25	v
IC current dissipation	I <sub>CC</sub>		50		mA
LED current dissipation	I <sub>LED</sub>		*32.4		A
Input voltage	V <sub>HI</sub>	0		1.5	V
	V <sub>LI</sub>	3.5		-	V
Input current	I <sub>LI</sub>			0.12	mA
	I <sub>HI</sub>			0.1	μA
Clock frequency	f <sub>CLK</sub>			40	MHz
Frame frequency	f <sub>FR</sub>	80		625	Hz
Luminance	Red	L <sub>v</sub>	100		cd/m <sup>2</sup>
	Yellow-green		100		
Peak emission wavelength	Red	λ <sub>p</sub>	635		nm
	Yellow-green		565		
Spectrum radiation bandwidth	Red	Δλ	35		nm
	Yellow-green		30		

\*3 Duty ratio: 1 / 16. When all dots are lit

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■ Interface Signals



Connections Method

