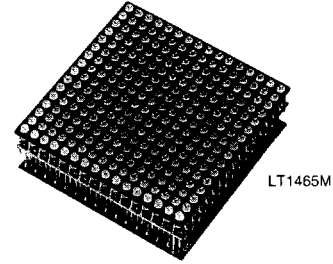


Dot Matrix LED Unit for Indoor/Outdoor Use LT1465M(Lamp Type)

■ Features

- No. of dots : 16X16dots
- Outline dimensions : 64X64mm
- Dot size : φ3.0mm
- Dot pitch : 4.0mm
- Radiation color : Yellow-green+Red(High-luminosity)dichromatic type
- Driving method : 1/16 duty dynamic drive

Outline dimensions are shown on the page 202, Fig.5.



■ Absolute Maximum Ratings

(Ta=25°C)

Parameter	Symbol	Rating	Unit
Supply voltage for IC	VCC	-0.3 to +6.0	V
Supply voltage for LED	VLED	-0.3 to +5.5	V
Input voltage	VI	-0.3 to Vcc+0.3	V
Turn-on time	ton	1	ms
Operating temperature	Topr	-20 to +45*1	°C
Storage temperature	Tsig	-20 to +85	°C
Power dissipation	P	13	W

*1 When dichromatic all dots are lit, duty ratio=1/16.

■ Optical Characteristics

(VCC=5V, VLED=5V, Ta=25°C)

Parameter	Symbol	TYP.	Unit
Viewing angle	2θ1/2	110	°
Peak emission wavelength	Red	660	nm
	Yellow-green	565	

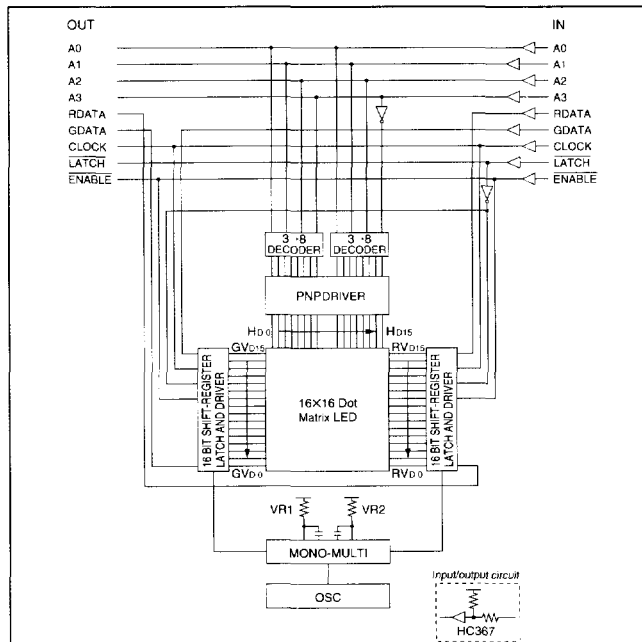
■ Luminance

Luminance is classified into 2 ranks shown below.

(VCC=5V, VLED=5V, Ta=25°C)

Radiation color	Rank		Unit
	1	2	
Red	240	300	cd/m ²
Yellow-green	240	300	

■ Block Diagram



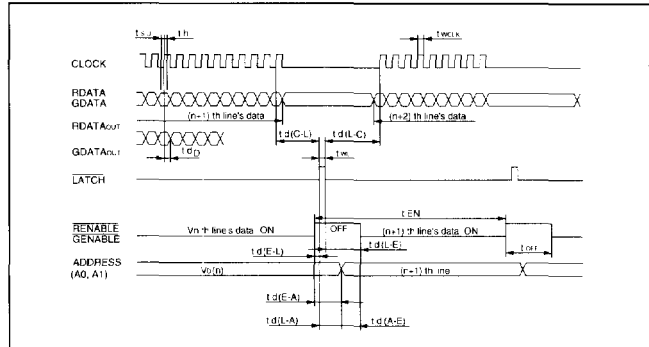
■ Electrical Characteristics

(VCC=5V, VLED=5V, Ta=25°C)

Parameter	Symbol	MIN.	TYP.	MAX.	Unit
Supply voltage for IC	VCC	4.75	5.0	5.25	V
Supply voltage for LED	VLED	4.5	5.0	5.25	V
IC current dissipation*1	ICC	—	20	40	mA
LED current dissipation*1	ILED	—	1.7	2.0	A
Input voltage	VIH	3.5	—	—	V
	VIL	—	—	1.5	V
Input current	IIH	—	—	0.1	μA
	IIL	—	—	0.12	mA
Clock frequency	fCLK	—	—	3.0	MHz
Frame frequency	fFR	80	100	625	Hz

*1 Under the condition that dichromatic all dots are lit.

■ Timing Chart



■ Recommended Timing Conditions

(Vcc=5.0V, Ta=25°C)

Parameter	Symbol	Rating			Unit	Remarks
		MIN.	TYP.	MAX.		
Clock pulse width	twCLK	100	—	—	ns	
Latch pulse width	tWL	80	—	—	ns	
Enable pulse width	twENA	2	—	—	μs	
Data setup time	tsu	80	—	—	ns	
Data hold time	th	40	—	—	ns	
Clock-latch time	td (C-L)	80	—	—	ns	
Latch-clock time	td (L-C)	150	—	—	ns	
Data output delay time	tdb	—	85	150	ns	
Enable-latch time	td (E-L)	0	—	—	μs	
Latch-enable time	td (L-E)	2	—	—	μs	
Enable-address time	td (E-A)	2	—	—	μs	
Address-enable time	td (A-E)	20	—	—	μs	
Latch-address time	td (L-A)	0	—	—	μs	
Propagation delay time	tplH, tpHL	—	15	40	ns	Except data terminal
Enable cycle	tEN	100	—	800	μs	*Prescription
Enable duty	(t OFF/t EN)	—	—	80	%	during operation

* This unit adjusts the luminance with the adjusting light signal of 1MHz modulated on enable signal internally. When users control the luminance from the outside, please control by changing tOFF time of enable signal. If users try to modulate the adjusting light signal on enable signal, it causes flickering and unevenness of luminance.