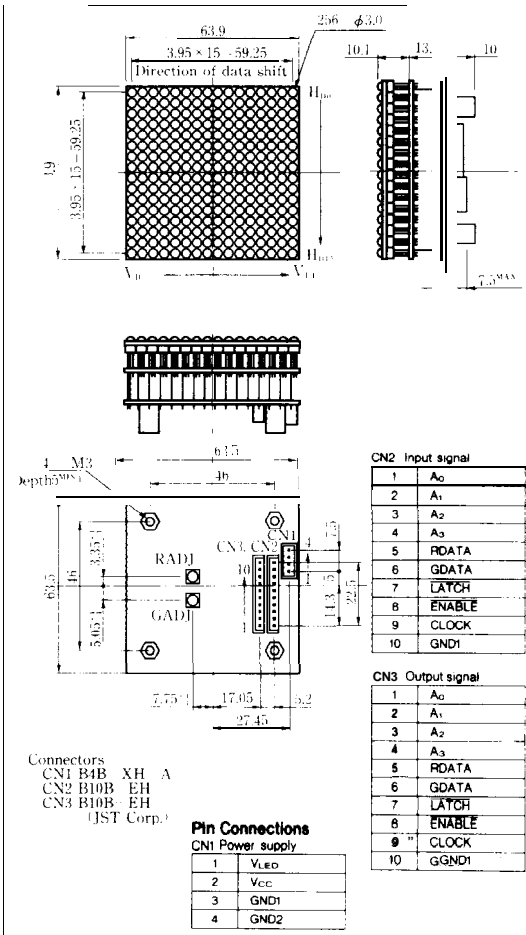# LT1465M

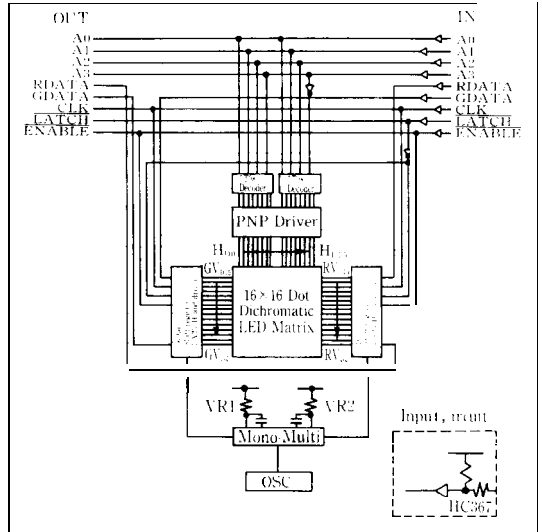# 1 6X 16 Dot Matrix LED Unit for Indoor Use

■ Features

1. 16X 16 dot matrix LED unit
2. Active display size: 63.9mm square
3. Three color emission by use of di-chromatic 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: 3MHz
8. Dynamic drive (Duty ratio: 1/16)

■ Outline Dimensions   (Unit: mm)

Connectors
CN1 B4B XH   A
CN2 B10B EH
CN3 B10B EH
(JST Corp.)

Pin Connections
CN1 Power supply

1	VLED
2	VCC
3	GND1
4	GND2

CN2 Input signal

1	A0
2	A1
3	A2
4	A3
5	RDATA
6	GDATA
7	LATCH
8	ENABLE
9	CLOCK
10	GND1

CN3 Output signal

1	A0
2	A1
3	A2
4	A3
5	RDATA
6	GDATA
7	LATCH
8	ENABLE
9	CLOCK
10	GGND1

■ Block Diagram

■Terminal Functions

Connector	Pin No	Name	Function
CN1 (Power supply)	1	V_{LED}	Power supply for LED
	2	V_{CC}	Power supply for IC
	3	GND1	Ground for IC
	4	GND2	Ground for LED
CN2 Input signal	1 to 4	A_0 to A_3	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_0 to A_3	Buffered the input signals A_0 to A_3
	5	RDATA	"P"t signal is generated through 16-bit shift register- in the unit.
	6	GDATA	
	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_{CC}	–0.3 to +5.5	v
LED supply voltage	V_{LED}	**–0.3** to +5.5	v
Input voltage	V_1	**–0.3** to V_{CC} +0.3	v
LED current dissipation	I_{LED}	＊1 2.4	A
Operating temperature range	Topr 1	＊2 –20 to +45	°C
	Topr 2	＊3 –20 to +55	°C
	Topr 3	＊4 –20 to +65	°C
Storage temperature range	Tstg	–20 to +85	°C

※1,※2 When all dots are lit, Duty ratio: 1/16
※ 3 When half rate of lighting
※ 4 When quarter rate of lighting

■ Electro-optical Characteristics

(Ta = 25°C, V_{CC} = 5V, V_{LED} = 5V)

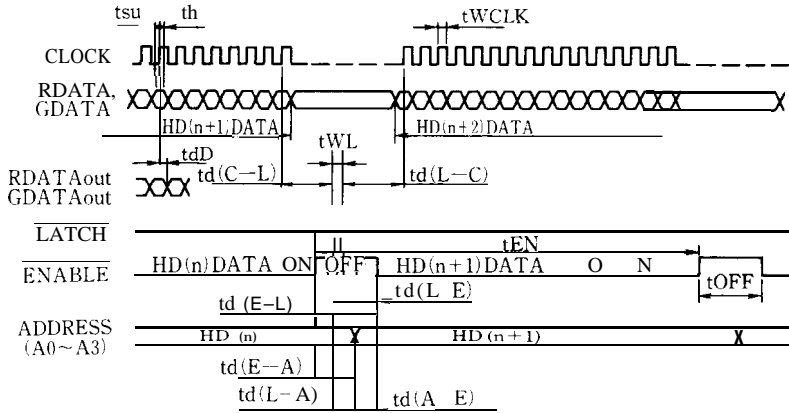| Parameter		Symbol	MIN	TYP	MAX	Unit
Operating IC supply voltage		V_{CC}	4.75	5.0	5.25	v
Operating LED SUPPI y voltage		V_{LED}	4.5	5.0	5.25	V
IC current dissipation		I_{CC}		20	40	mA
LED current dissipation		$I_{LED}1$		＊5 1.1	1.3	A
		$I_{LED}2$		＊6 1.1	1.3	A
		$I_{LED}3$		＊7 1.7	2.0	A
Input voltage		V_{IL}			1.5	V
		V_{IH}	3.5			v
Input current		I_{IL}			0.12	mA
		I_{IH}			0.1	μA
Output voltage		V_{OL}			0.2	V
		V_{OH}	4.9			v
Clock frequency		f_{CLK}			3.0	MHz
Frame frequency		f_{FR}	80	100	625	Hz
＊8 Luminance	Red	L_V		300		cd/m²
	Yellow-green			300		
Peak emission wavelength	Red	λp		660		nm
	Yellow-green			565		
Spectrum radia-tion bandwidtb	Red	$\Delta \lambda$		20		nm
	Yellow-green			30		

※ 5 When all yellow-green dots are lit
※6 When all red dots are lit
※7,※8 When all dots are lit. Duty ratio: 1/16, f_{FR} = 100Hz

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■ Interface Signals

■ Connections Method