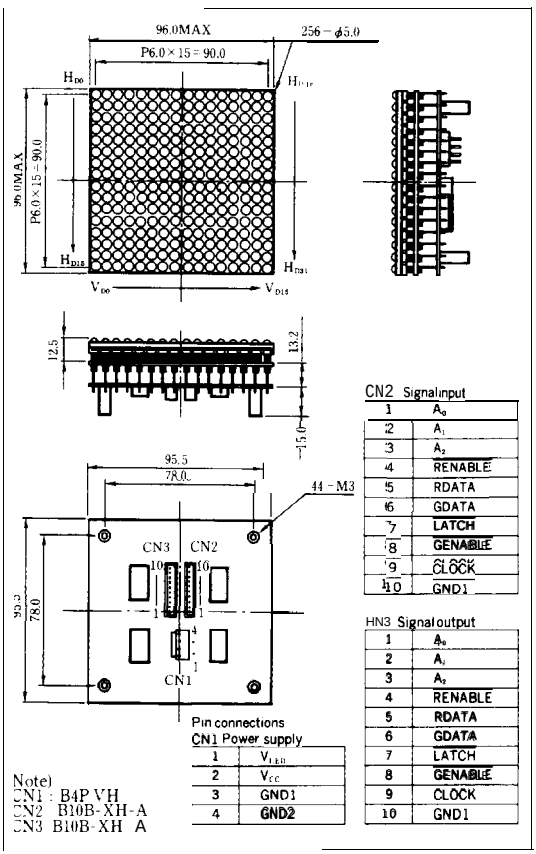
LTI 455M

1 6X 16 Dot Matrix LED Unit for Outdoor Use

■ Features

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

■ Outline Dimensions (Unit: mm)



CN2 Signal input

1	A_0
2	A_1
3	A_2
4	RENABLE
5	RDATA
6	GDATA
7	LATCH
8	GENABLE
9	CLOCK
10	GND1

HN3 Signal output

1	A_0
2	A_1
3	A_2
4	RENABLE
5	RDATA
6	GDATA
7	LATCH
8	GENABLE
9	CLOCK
10	GND1

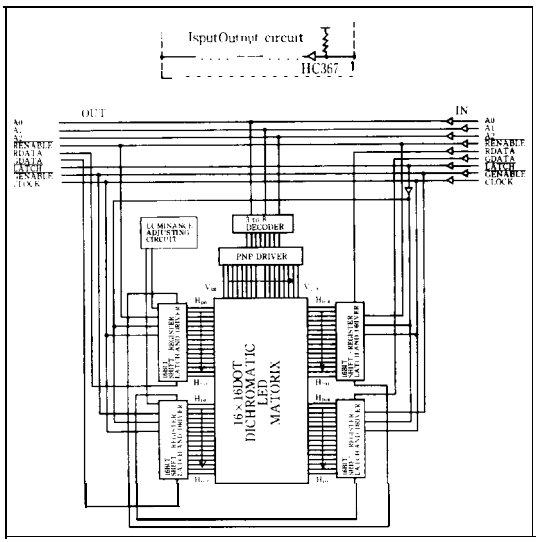
Pin connections

CN1 Power supply

1	V_{LED}
2	V_{CC}
3	GND1
4	GND2

Note)
CN1 : B4P VH
CN2 B10B-XH-A
CN3 B10B-XH A

■ Block Diagram



■ Terminal Functions

connector	'in 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)	1~3	A_0~A_2	Address specification signal for column driver
	4	RENABLE	"L" Each dot can be driven in accordance with data for red
	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	GENABLE	"L": Each dot can be driven in accordance with data for yellow-green
	9	CLOCK	Clock signal for data transmission in the shift. register. (L→H: The data are shifted)
	10	GND1	Ground for IC
CN3 (;;;')	1~3	A_0~A_2	Buffered the input signals A_0~A,
	4	RENABLE	Buffered the input signal RENABLE
	5	RDATA	Input signal is generated through 32-bit shift register in the unit.
	6	GDATA	
	7	LATCH	Buffered the input signal LATCH.
	8	GENABLE	Buffered the input signal GENABLE
	9	CLOCK	Buffered the input signal CLOCK.
	10	GND1	Ground for IC

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■ Absolute Maximum Ratings

(Ta = 25°C)

Parameter	Symbol	Rating	Unit
IC supply voltage	V_{cc}	6.0	V
LED supply voltage	V_{LED}	6.0	V
Input voltage	V_I	*'5.5	V
LED current dissipation	I_{LED}	"'(4.0)	A
Operating temperature range	Topr	-lo to +45	'C
Storage temperature range	Tstg	–25 to +85	'c

*1 $V_I < V_{cc}$ at $V_{cc} \leqq 5.5$
* 2 When all dots are lit, Duty ratio: 1/8

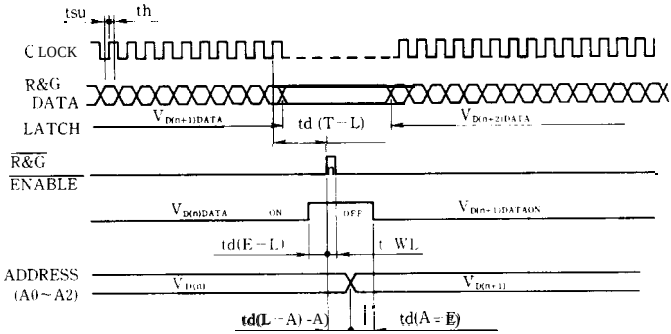
■ Electro-optical Characteristics

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

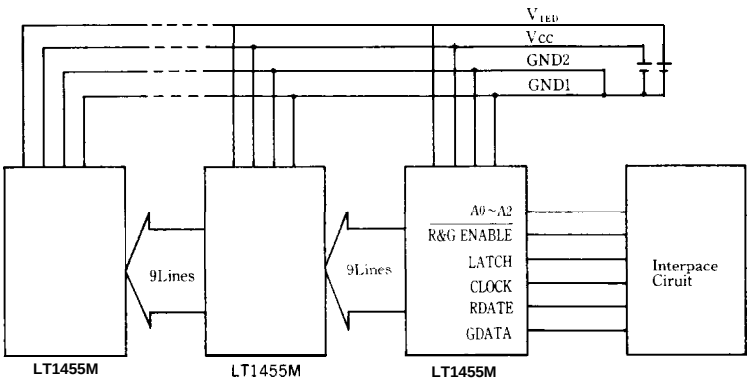
Parameter		Symbol	MIN	TYP	MAX	Unit
Operating IC supply voltage		V_{CC}	4.75	5.0	5.25	V
Oprating LED supply voltage		V_{LED}		5.0	5,25	V
IC current dissipation		I_{cc}		(70)		mA
LED current dissipation		I_{LED}		*'(3,5)		A
Input voltage		V_{IL}			1.5	V
		V_{IH}	3.5			V
Input current		I_{IL}			0.12	mA
		I,"			0.1	μA
Clock frequency		f_{CLK}		--	3.0	MHz
Frame frequency		f_{FR}	125	200		Hz
*'Luminance	Red	L_V		(600)		cd/m²
	Yellow-green			(300)		
Peak emission wavelength	Red	λp		660		nm
	Yellow-green			565		
Spectrum radiation bandwidth	Red	Δλ		20		nm
	Yellow-green			30		

*3 Duty ratio: 1/8, When all dots are lit, f_{FR} = 200Hz ( ) : Tentative value

■ Interface Signals



■ Connections Method



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