

KLM - 096MA - 16A

This module designed for light emitting display device. Organize with 16 x 16 matrix combination with 256 of each Red, Green LED Chips, for indoor use.

FEATURES

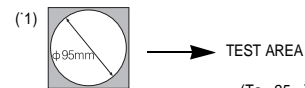
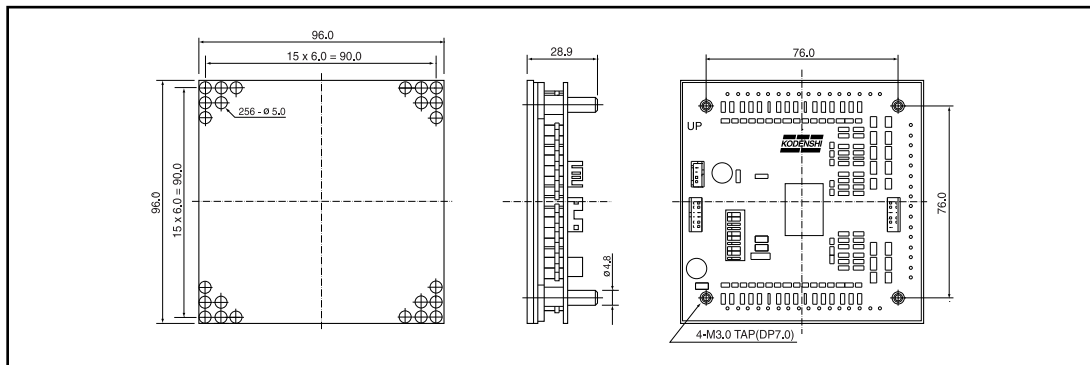
- Active display size : 96mm x 96mm
- Dot size : ϕ 5
- Dot pitch : 6mm
- Display color : RED, GREEN, AMBER(Mixed color)
- Duty rate : 1/16
- Dot matrix : 256(16 x 16)
- Weight : 160g(Typ.)
- With a simple serial - inter face.

MAXIMUM RATINGS

ITEM	SYMBOL	RATINGS	UNIT	COND.
Power dissipation	P_D	18	W	Temp. 25
Supply voltage(DRIVE)	V_{DD}	6	V	
Supply voltage(LED)	V_{LED}	6	V	
Logic input power	V_{in}	- 0.5 ~ V_{DD}	V	
Junction Temp.	T_J	115		
Operating Temp.	T_a	- 20 ~ +60		
Storage Temp.	T_s	- 20 ~ +85		

DIMENSIONS

(Unit : mm)



OPTICAL CHARACTERISTICS

($T_a=25$)

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT.
Bright - ness(16x 16)	GREEN	IV_g	-	100	-	$cd/m^2 \cdot s$
	RED	IV_r	-	70	-	
	AMBER	IV_o	-	140	-	
Dot - Balance	GREEN	IVR_g	-	-	2	-
	RED	IVR_r	-	-	2	
	AMBER	IVR_o	-	-	2	
Emission Wavelength	GREEN	λ_p	-	569	-	nm
	RED	λ_p	-	630	-	
	AMBER	λ_p	-	-	-	
Spectrum half - band	GREEN	λ_g	-	25	-	nm
	RED	λ_r	-	40	-	

LED Dot Matrix

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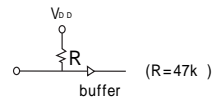
ELECTRICAL CHARACTERISTICS (VOLTAGE CURRENT CHARACTERISTICS)

(Ta=25 °C)

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT.	
Supply voltage(LOGIC)	V _{DD}	-	4.75	5	5.25	V	
Supply voltage(LED)	V _{LED}	-	4.50	5	5.50	V	
Supply current(LOGIC)	I _{DD}	V _{DD} =5V	-	50.0	70.0	mA	
Supply current(LED)	GREEN	I _{LEDg}	Lighting all '1'	-	-	1.4	A
	RED	I _{LEDr}		-	-	1.4	
	AMVER	I _{LEDa}		-	-	2.5	
Logic - input voltage LOW	V _{IL}	V _{LED} =5V	-	-	1.5	V	
Logic - input voltage HIGH	V _{IH}	V _{DD} =5V	3.5	-	-	V	

*2. V_{DD}=5V, V_{LED}=5V *Temperature condition of guarantee range for operating : -20~+65

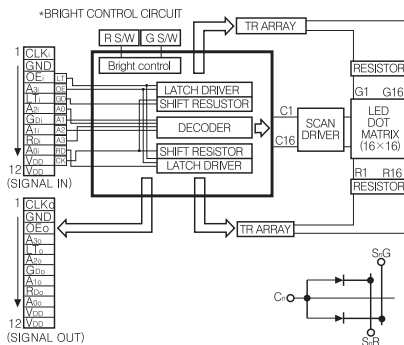
*PULL UP



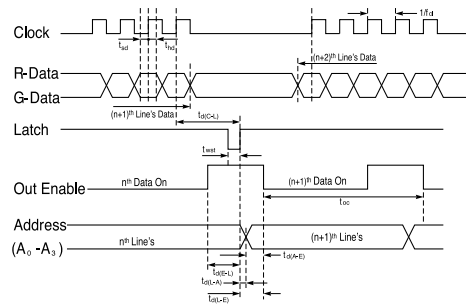
ELECTRICAL CHARACTERISTICS (CONNECTOR SPECIFICATION)

CLASSIFICATION	NAME	STANDARD	LENGTH	COMPANY	REMARK	
POWER CONN.	WAFER	B 4B - XH - A	-	KST	JST C/N	
INPUT SIGNAL CONN.	WAFER	B 12B - PHDSS	-	KST	JST C/N	
OUTPUT SIGNAL CONN.	WAFER	B 12B - PHDSS	-	KST	JST C/N	
ASSY	POWER	HARNESS	XHP - 4P - 000(Ring type)	Option	KST	JST C/N
		HARNESS	XHP - 4P - 000(Solder type)	Option	KST	JST C/N
	SIGNAL	HARNESS	HPDR - 12VS - 000	Option	KST	JST C/N

BLOCK DIAGRAM



TIMING CHART



RECOMMENDED TIMING CONDITION

NO	ITEM	SYMBOL	MIN.	TYP.	MAX.	UNIT.
1	CLOCK FREQUENCY	f _{cl}	-	-	40	MHz
2	CLOCK CYCLE	1/f _{cl}	25	-	-	ns
3	CLOCK - LATCH TIME	t _{d(C-L)}	25	-	-	ns
4	LATCH PULSE WIDTH	t _l	25	-	-	ns
5	ENABLE - LATCH TIME	t _{d(E-L)}	0	-	-	ns
6	DATA SETUP TIME	t _{sd}	6	-	-	ns
7	DATA HOLD TIME	t _{sh}	6	-	-	ns
8	ADDRESS - ENABLE TIME	t _{d(A-E)}	25	-	-	ns
9	LATCH - ADDRESS TIME	t _{d(L-A)}	0	-	-	ns
10	LATCH - ENABLE TIME	t _{d(L-E)}	0	-	-	ns
11	ON TIME	t _{oc}	-	-	1	ms