

MODEL NO : **KSM-604-A1A** **KSM-604-A1B** **KSM-604-A1C**

■ Features:

- Large emitting dot 6.0mm diameter.
- Low power/high brightness.

■ Description:

- The KSM series emitting area (6.0mm diameter)

LED sources configured in a 64 dots 8*8 matrix array.

- These device is made with water clear LED lamps and black surface.

■ Applications:

- Indoor or half outdoor full color displays and moving message signs.
- Full color digital readout display.



Type	KSM-604-A1A		KSM-604-A1B	KSM-604-A1C			
4 (F 3.0) Lamps in Pet Dot	CHIP (1R 2G 1B)				3mm LED Lamp		
	(Compose)Material		Emitted Color	Wavelength	Luminous	Viewing	
	SR×1	A1GaInP	Super-Red	628 nm	160 mcd	120 Deg	
	SB×1	GaN/SiC	Super-Blue	468nm	180 mcd		
	KSM-604-A1A	SPG×2	A1GaInP	S-Pure-Green	550 nm		110 mcd
	KSM-604-A1B	PG×2	A1GaInP	Pure-Green	560 nm		120 mcd
KSM-604-A1C	SG×2	A1GaInP	Super-Green	570 nm	150 mcd		



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■ Absolute maximum ratings at Ta = 25 C:

Parameter	Symbol		Rating	Unit
Reverse Voltage	Vr		5	V
Forward Current	If	(SR)628 nm	25	mA
		(SB)468 nm	30	
		(SPG)550 nm	50	
		(PG)560 nm	50	
		(SG)570 nm	30	
Operating Temperature	Topr		-40 to +100	°C
Storage Temperature	Tstg		-40 to +100	
Soldering Temperature	Tsol		260 ±5	
Power Dissipation	Pd	SR	140	mW
		SB	120	
		SPG	220	
		PG	220	
		SG	120	
Peak Forward Current (t=10μ S Duty=0.005)	If Pcak	SR	500	mA
		SB	500	
		SPG	500	
		PG	500	
		SG	500	

Reliability test item and condition:

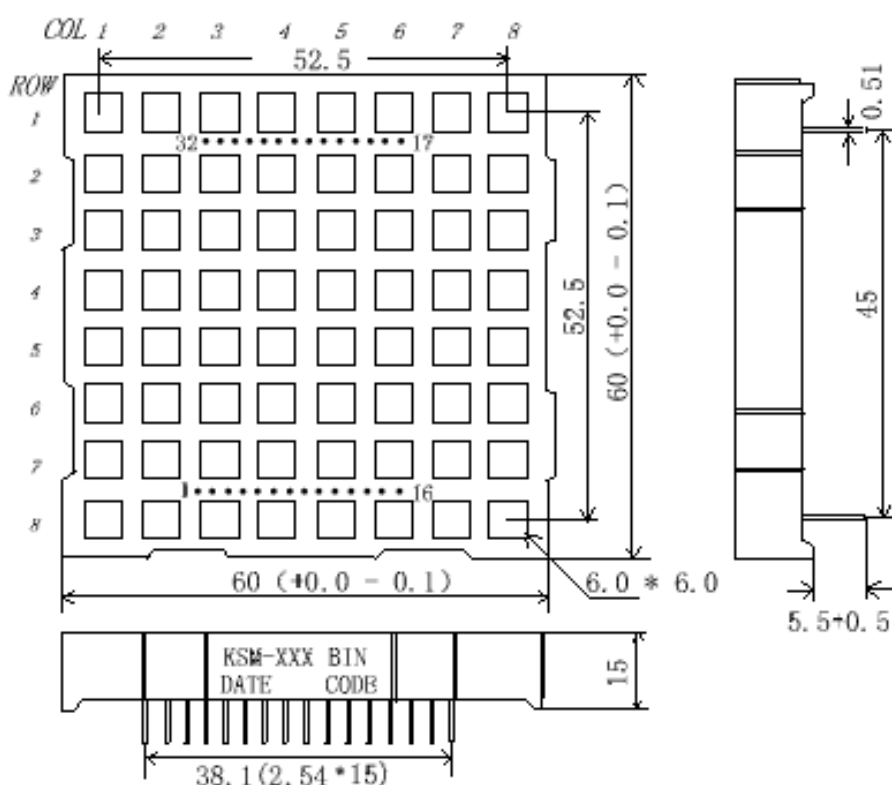
NO	Ltem	Test Conditions	Test Hours/Cycle	Sample Size	Ac/Re
1	Solder Heat	TEMP:260°C±5°C	5 SEC	76 PCS	0/1
2	Temperature Cycle	H:+85°C 30min ?5min L:-55°C 30min	50 CYCLE	76 PCS	0/1
3	Thermal Shock	H:+100°C5min ?10sec L:-10°C 5min	50 CYCLE	76 PCS	0/1
4	High Temperature Storage	TEMP:100°C	1000 HRS	76 PCS	0/1
5	Low Temperature Storage	TEMP:-55°C	1000 HRS	76 PCS	0/1
6	DC Operating Life	IF=20mA	1000 HRS	76 PCS	0/1
7	High Temperature High Humidity	85°C/85%RH	1000 HRS	76 PCS	0/1

Electronic optical characteristics:

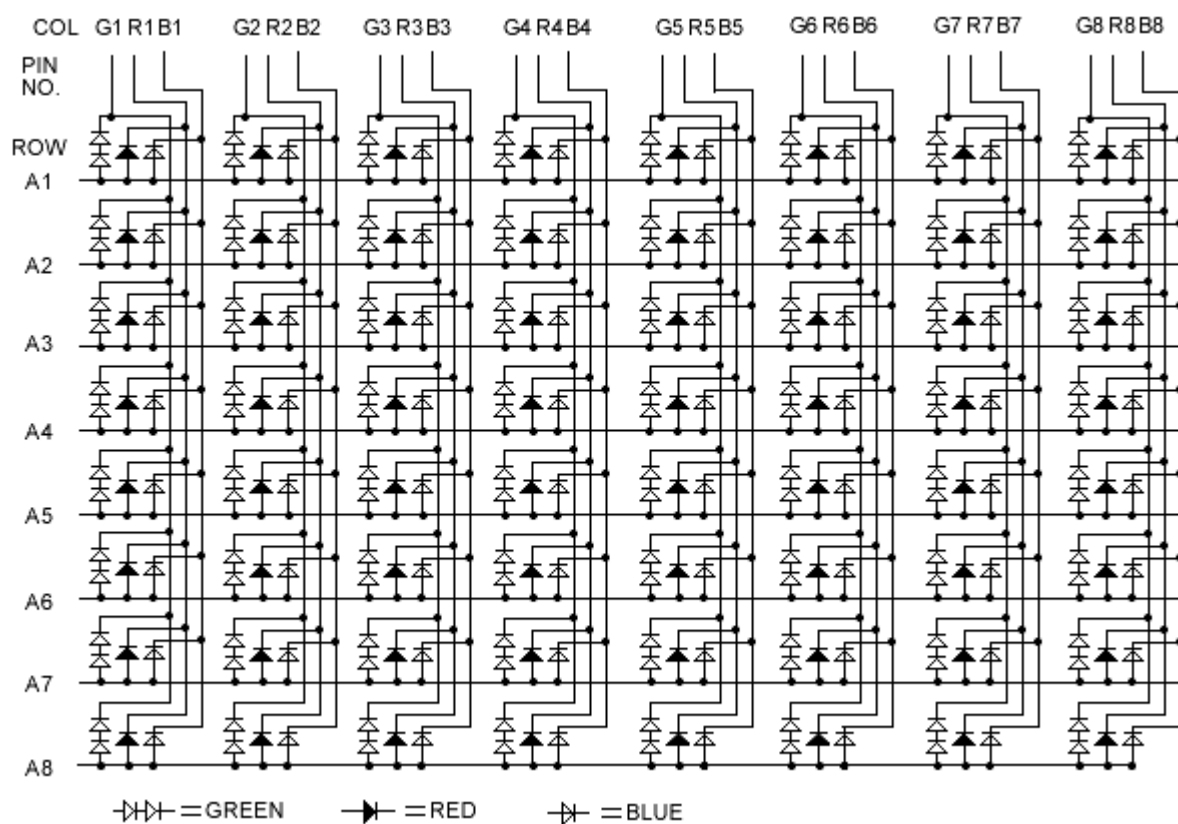
Parameter	Symbol		MIN.	TYP	MAX.	Unit	Condition
Luminous Intensity	I _v	SR	150	160	-----	mcd	If=20mA
		SB	160	180	-----		
		SPG	100	110	-----		
		PG	100	120	-----		
		SG	120	150	-----		
Peak Wavelength	λ _P	SR	-----	635	-----	nm	
		SB	-----	430	-----		
		SPG	-----	545	-----		
		PG	-----	557	-----		
		SG	-----	565	-----		
Dominant Wavelength	λ _d	SR	-----	628	-----	nm	
		PB	-----	468	-----		
		SPG	-----	550	-----		
		PG	-----	560	-----		
		SG	-----	570	-----		
Spectrum Radiation Bandwidth		λ	-----	20	-----	nm	
Forward Voltage	V _f	SR	-----	1.90	2.20	V	
		SB	-----	3.80	4.20		
		SPG	-----	1.90	2.20		
		PG	-----	1.90	2.20		
		SG	-----	1.90	2.20		
Reverse Current	I _r		-----		-10	uA	V _r =5V

Package Dimcnsion:

(Pixels ≈ 18,000 Dot /m²)



Internal Circuit Diagram :

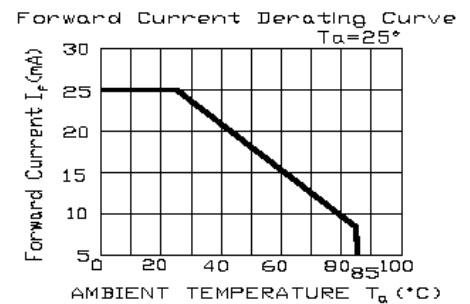
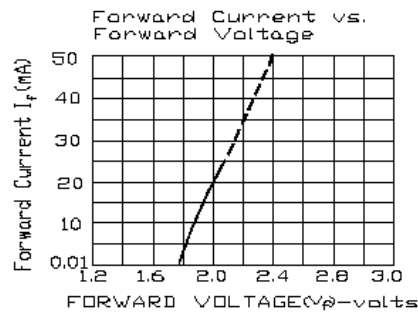
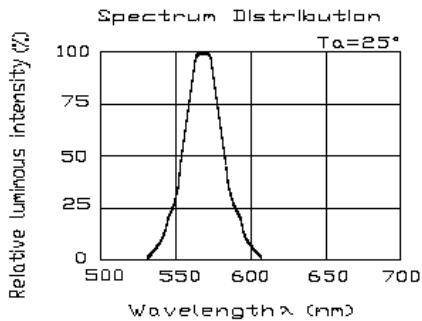
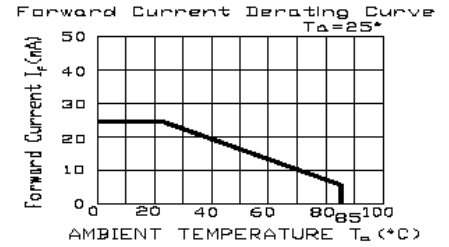
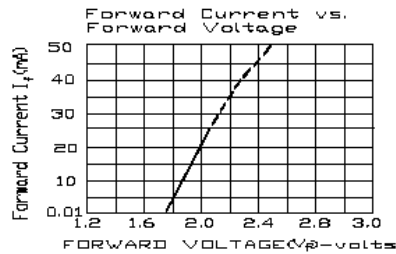
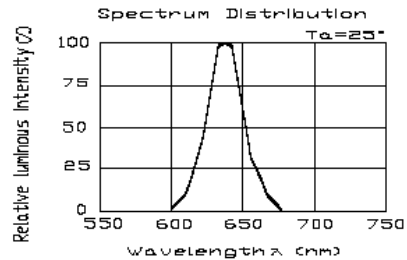


The pin number in comparison with the electrode array :

NO	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PIN	B1	G1	R1	B3	G3	R3	A1	A2	A3	A4	B5	G5	R5	B7	G7	R7
NO	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
PIN	R8	G8	B8	R6	G6	B6	A8	A7	A6	A5	R4	G4	B4	R2	G2	B2

Notes : B = blue G = green R = red

Typical Electro-Optical Characteristic Curves:



Relative spectral emission $I_{rel} = f(\lambda)$, $T_a=25^\circ\text{C}$,
 $I_f=10\text{mA}$

$V(\lambda)$ =Standard eye response curve λ

Radiation characteristic $I_{rel}=f(\lambda)$

