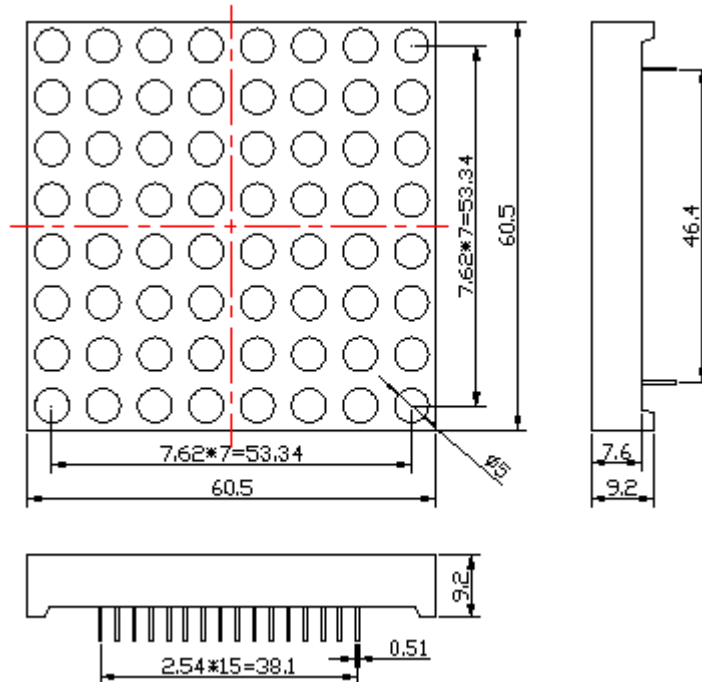


■ Features:

1. 8×8 dot matrix display.
2. Dot Size: 5.0mm.
3. Low power consumption.
4. Lens Color : black face and water clear segments.
5. Categorized for luminous intensity.
6. RoHS compliant

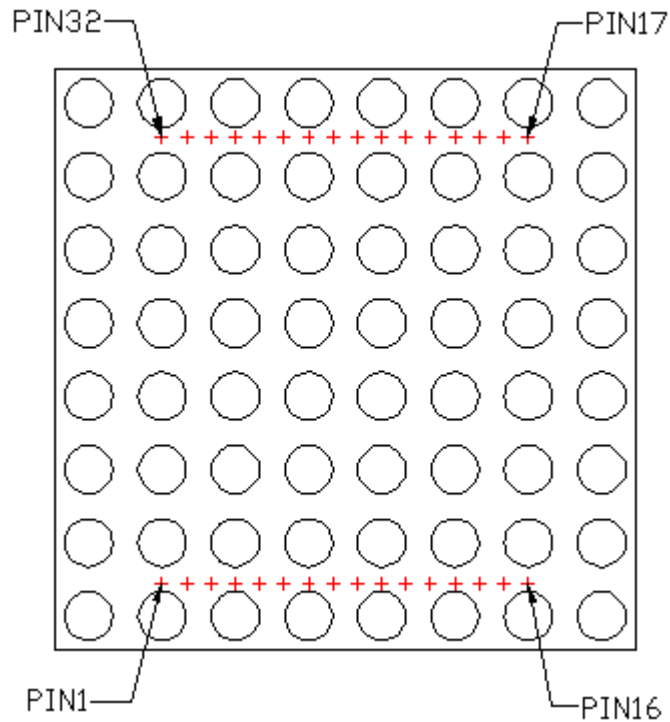
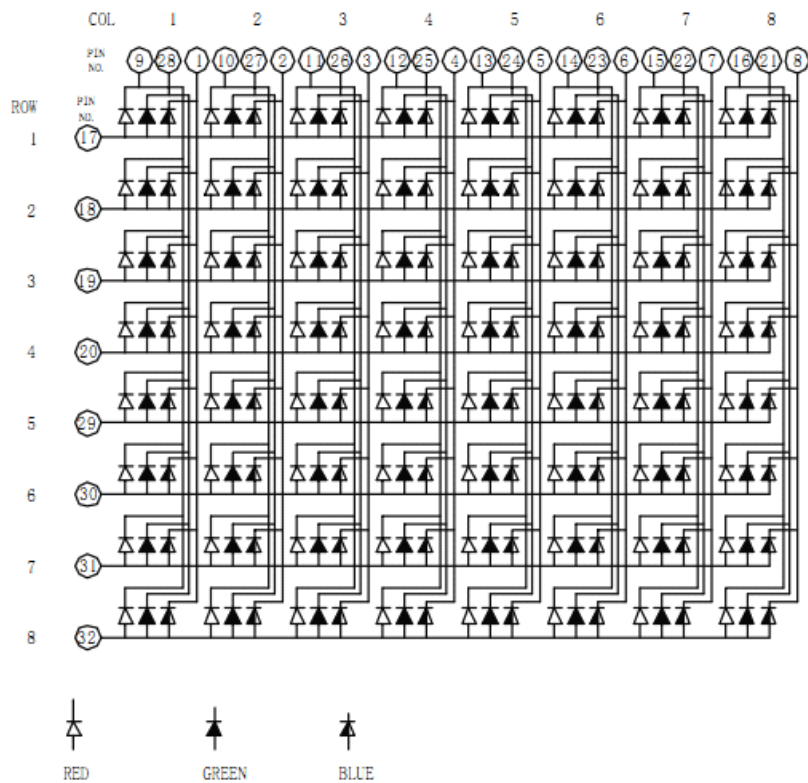
■ Device Selection Guide :

Model No.	Description	Chip	
		Material	Emitting Color
HL-M2388BRGB	Common Anode	AlGaInP	Red
		InGaN	Green
		InGaN	Blue

■ Mechanical Dimensions:


Notes:

- 1.All dimensions are in millimeters(inches).
- 2.Tolerance is $\pm 0.25\text{mm}(.01\text{'})$ unless otherwise specified.
- 3.Specifications are subject to change without notice.

■ All Light On Segments Feature & Pin Position:

■ Internal Circuit Diagrams:


■ Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Pulse Forward Current*1	Pd	60	mW
Forward Current	I _F	30	mA
Peak Forward Current	I _{FP}	80	mA
Reverse Volage	V _R	5	V
Operating Temperature	Topr	-40~ +105	°C
Storage Temperature	Tstg	-40~ +105	°C
Reflow Temperature*2	Tsol	260	°C
Electrostatic Discharge	ESD	2000	V

Note:

*1: IFp Conditions :Pulse Width ≤10msec.and Duty cycle≤1/10.

*2: Reflow time≤5 seconds.

■ Electrical and optical characteristics (Ta=25°C)

Parameter	Symbol	Color	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	Vf	Red	I _F =20mA	-	2.0	2.5	V
		Green	I _F =20mA	-	3.0	3.5	
		Blue	I _F =20mA	-	3.0	3.5	
Luminous Intensity/segment	Iv	Red	I _F =20mA	-	80	100	mcd
		Green	I _F =20mA	-	200	250	
		Blue	I _F =20mA	-	70	110	
Dominant Wave Length	λ d	Red	I _F =20mA	620	-	630	nm
		Green	I _F =20mA	515	-	525	
		Blue	I _F =20mA	460	-	470	
Reverse Current	I _R	All	V _R =5V	-	-	10	μA

■ Reliability test items:

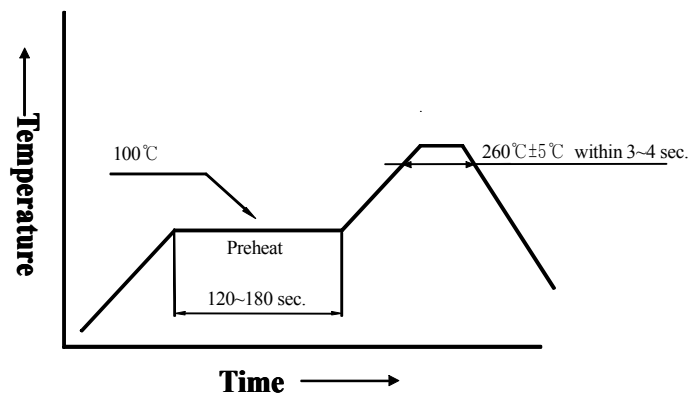
No.	Test Item	Test Condition	Time/Cycle	Judgment Criteria	Number Damaged
1	Solder Heat	TEMP: 260°C± 5°C	5sec	$I_v \leq I_{vt} * 0.5$ $V_f \geq U$ $V_f \leq L$	0/30
2	Thermal shock	H: +100°C 5min L: -40°C 5min	300 Cycles		0/30
3	High temp storage	100°C	1000 Hrs		0/30
4	Low temp storage	-40°C	1000 Hrs		0/30
5	Temperature cycle	H: +100°C 15min L: -40°C 15min	300 Cycles		0/30
6	High temp high humidity	85°C,85%RH	1000 Hrs		0/30

Note: I_{vt} : The test I_v value of the chip before the reliability test.

I_v : The test value of the chip that has completed the reliability test.

U: Upper Specification Limit.

L: Lower Specification Limit.

■ Wave soldering temperature/Time:

■ Soldering Iron:

Ferrochromium soldering: power keep no more than 40W, tip temperature should not pass 260°C, soldering

Time Within 3 second.