



DATA SHEET

■ **DEVICE NUMBER : HL-M1388BRG**

(For:)

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2011.12.24	1.0	1.0	1.0	1.0	1.0							Original Released

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■ Features:

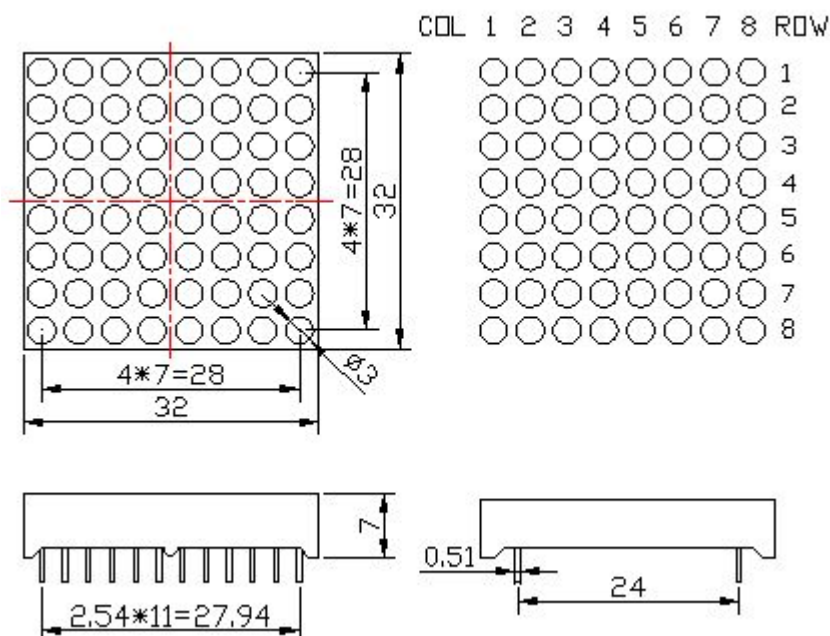
1. 8×8 dot matrix display.
2. Dot Size: 3.0mm.
3. Low power consumption.
4. Lens Color : black face and translucent segments.
5. Categorized for luminous intensity.
6. RoHS compliant



■ Device Selection Guide :

Model No.	Description	Chip	
		Material	Emitting Color
HL-M1388BRG	Common Anode	AlGaInP	Super Orange Red
		AlGaInP	Super Yellow Green

■ Mechanical Dimensions:

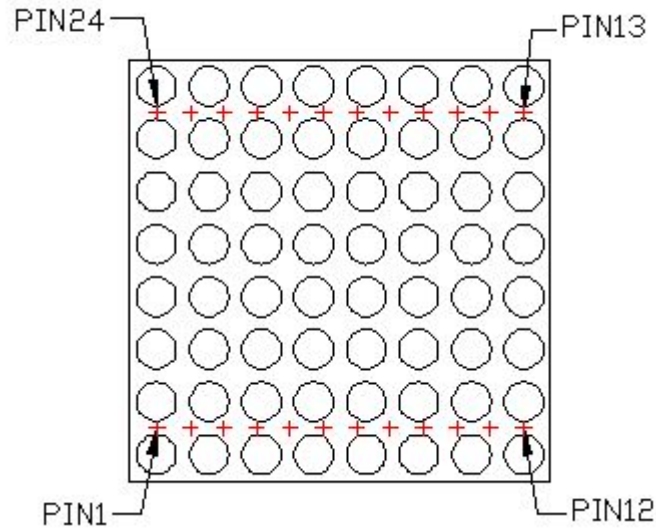


Notes:

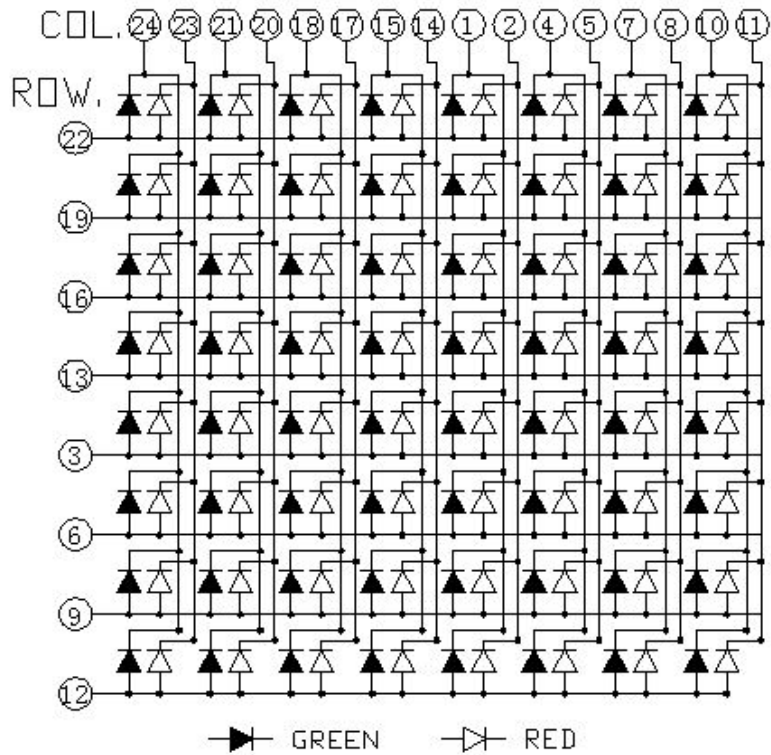
1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25\text{mm}$ (.01") unless otherwise specified.
3. Specifications are subject to change without notice.



■ 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	Condition	Color	Typ.	Max.	Unit
Forward Voltage	Vf	I _F =20mA	Red	2.0	2.5	V
			Green	2.0	2.5	
Luminous Intensity/segment	I _v	I _F =10mA	Red	35	-	mcd
			Green	30	-	
Dominant Wave Length	λ d	I _F =20mA	Red	625	-	nm
			Green	570	-	
Spectral Line Half-width	Δ λ	I _F =20mA	All	20	-	nm
Reverse Current	I _R	V _R =5V	All	-	100	μA



■ Reliability test items:

No.	Test Item	Test Condition	Time/Cycle	Judgment Criteria	Number Damaged
1	Reflow Soldering	TEMP: 260°C± 5°C MAX: 5sec	6 Min	$I_v \leq I_{vt} * 0.5$ $V_f \geq U$ $V_f \leq L$	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

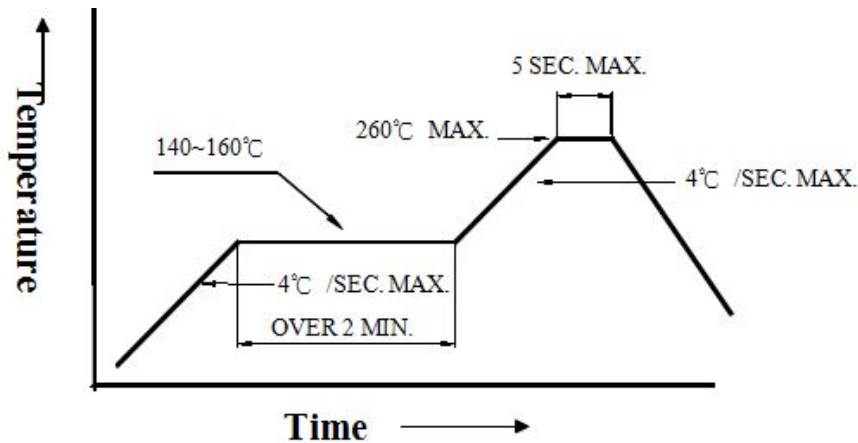
Note: I_{vt} : The test I_v value of the chip before the reliability test.

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

U: Upper Specification Limit.

L: Lower Specification Limit.

■ IR Reflow temperature/Time:



■ Soldering Iron:

Ferrochromium soldering: power keep no more than 40W, tip temperature should not pass 260°C, soldering Time Within 3 second.