Kingbright

L-138A8QMP/1GD
3.4 mm Single-Level Circuit Board Indicator

DESCRIPTION

- The Green source color devices are made with Gallium Phosphide Green Light Emitting Diode

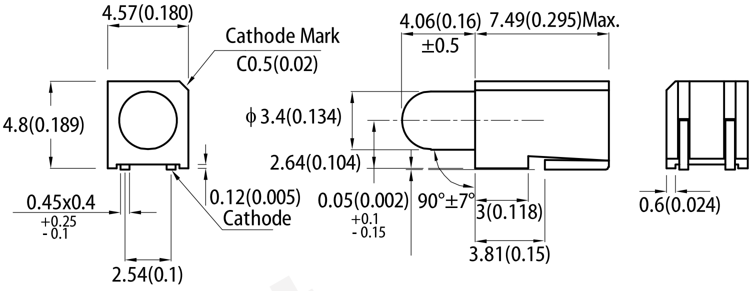
FEATURES

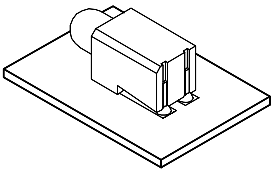
- Surface mount type
- Black case enhances contrast ratio
- High reliability life measured in years
- Package: 1000 pcs / reel
- Moisture sensitivity level: 3
- Housing UL rating: 94V-0
- Housing material: PPA
- High temperature resistant housing
- High glass transition temperature epoxy
- RoHS compliant

APPLICATIONS

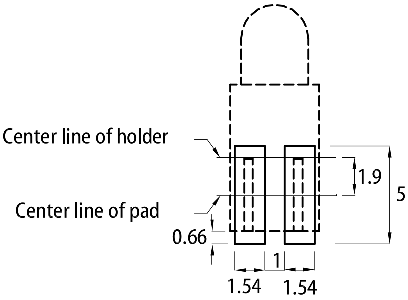
- Status indicator
- Illuminator
- Signage applications
- Decorative and entertainment lighting
- Commercial and residential architectural lighting

PACKAGE DIMENSIONS





RECOMMENDED SOLDERING PATTERN



Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25(0.01") unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.

SELECTION GUIDE

Part Number	Emitting Color (Material)	Lens Type	Iv (mcd) @ 10mA [2]		Viewing Angle [1]
			Min.	Typ.	2θ1/2
L-138A8QMP/1GD	🟩 Green (GaP)	Green Diffused	6	12	40°

Notes:
1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
2. Luminous intensity / luminous flux: +/-15%.
3. Luminous intensity value is traceable to CIE127-2007 standards.

ELECTRICAL / OPTICAL CHARACTERISTICS at T_A=25°C

Parameter	Symbol	Emitting Color	Value		Unit
			Typ.	Max.	
Wavelength at Peak Emission I_F = 10mA	λ_{peak}	Green	565	-	nm
Dominant Wavelength I_F = 10mA	λ_{dom} [1]	Green	568	-	nm
Spectral Bandwidth at 50% Φ REL MAX I_F = 10mA	$\Delta\lambda$	Green	30	-	nm
Capacitance	C	Green	15	-	pF
Forward Voltage I_F = 10mA	V_F [2]	Green	2	2.4	V
Reverse Current (V_R = 5V)	I_R	Green	-	10	uA

Notes:
1. The dominant wavelength (λd) above is the setup value of the sorting machine. (Tolerance λd : ±1nm.)
2. Forward voltage: ±0.1V.
3. Wavelength value is traceable to CIE127-2007 standards.
4. Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

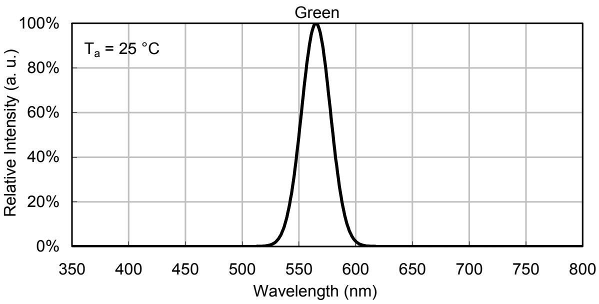
ABSOLUTE MAXIMUM RATINGS at T_A=25°C

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	62.5	mW
Reverse Voltage	V_R	5	V
Junction Temperature	T_j	110	°C
Operating Temperature	T_{op}	-40 to +85	°C
Storage Temperature	T_{stg}	-40 to +85	°C
DC Forward Current	I_F	25	mA
Peak Forward Current	I_{FM} [1]	140	mA
Electrostatic Discharge Threshold (HBM)	-	8000	V

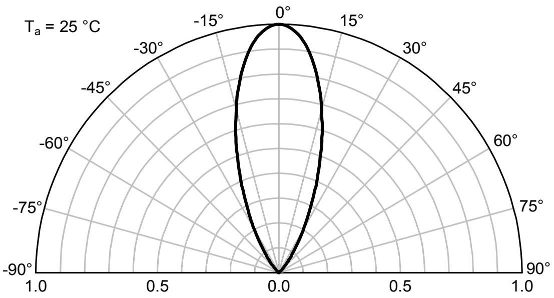
Notes:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

TECHNICAL DATA

RELATIVE INTENSITY vs. WAVELENGTH

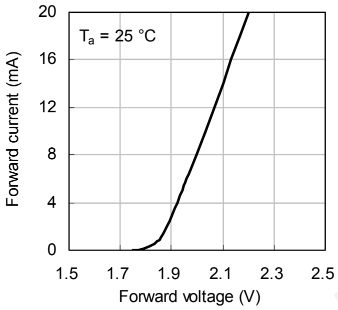


SPATIAL DISTRIBUTION

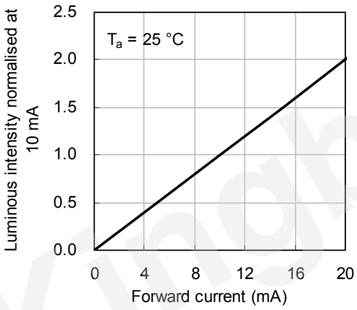


GREEN

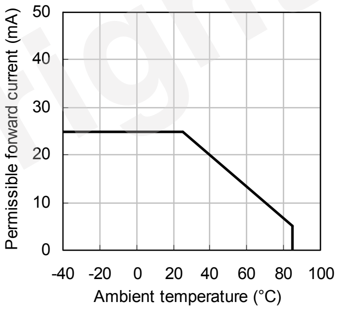
Forward Current vs. Forward Voltage



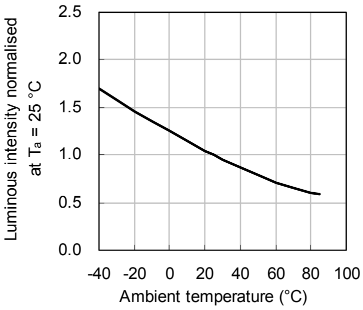
Luminous Intensity vs. Forward Current



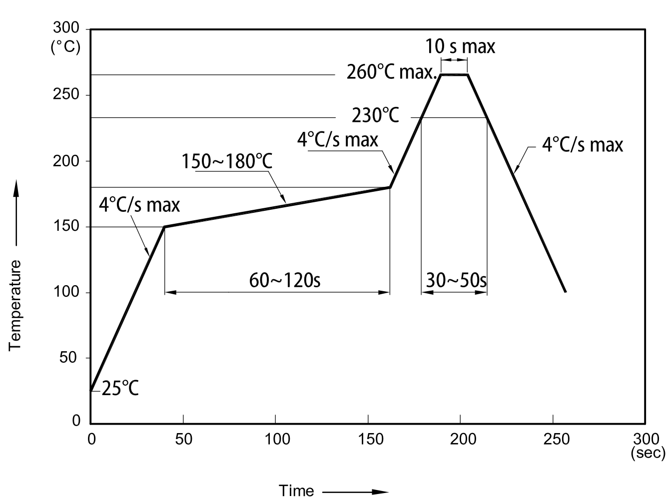
Forward Current Derating Curve



Luminous Intensity vs. Ambient Temperature

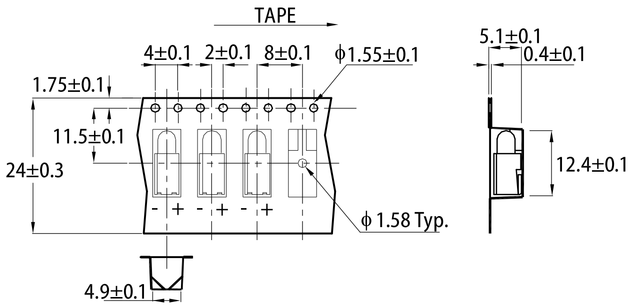


REFLOW SOLDERING PROFILE for LEAD-FREE SMD PROCESS

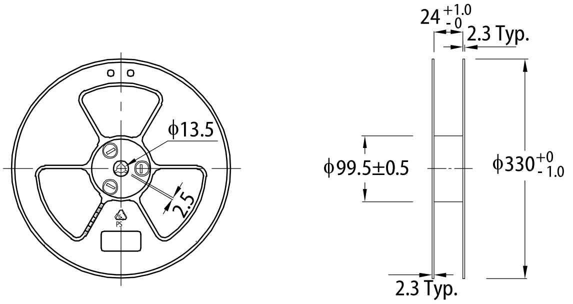


Notes:
1.We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the LEDs while it is exposed to high temperature.
3. No more than once.
4. Reflow soldering is recommended. Other soldering methods are not recommended as they might cause damage to the product.

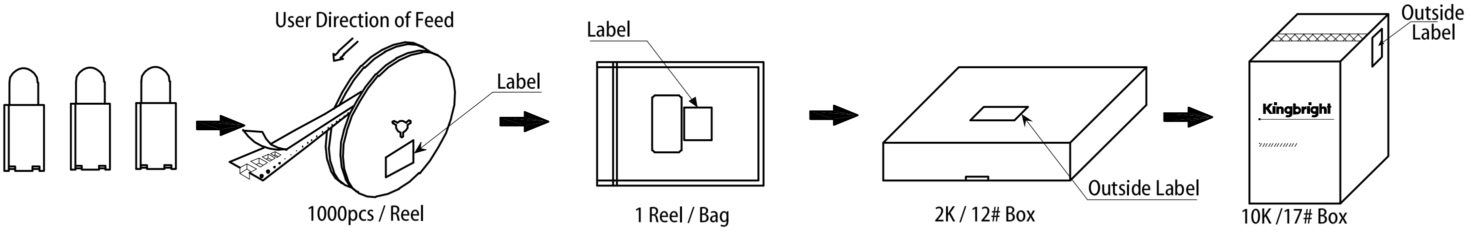
TAPE SPECIFICATIONS (units : mm)

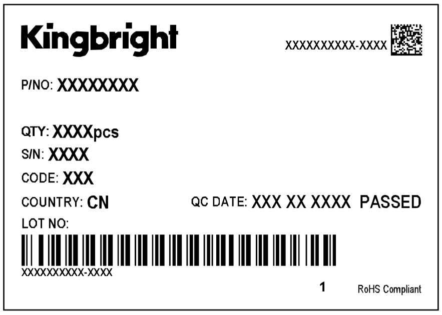


REEL DIMENSION (units : mm)



PACKING & LABEL SPECIFICATIONS



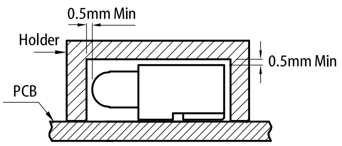

Kingbright XXXXXXXXXX-XXXX

P/NO: XXXXXXXX

QTY: XXXXpcs
S/N: XXXX
CODE: XXX
COUNTRY: CN QC DATE: XXX XX XXXX PASSED
LOT NO:
XXXXXXXXXX-XXXX
1 RoHS Compliant

PRECAUTIONS

1. A moisture barrier bag (MBB) containing LEDs shall be kept in an environment with temperature below 40°C and humidity below 90% RH.
   A MBB shall be kept sealed until the LEDs contained in that bag are to be used immediately.
   Storage in an environment with temperature 5~30°C and humidity below 60% RH.
2. After a MBB has been opened, all LEDs contained in that bag shall complete soldering process within according to the conditions listed on the Kingbright MBB.
3. If the 10% spot of a humidity indicator card (HIC) indicates wet, LEDs shall be baked according to the conditions listed on the Kingbright MBB.
4. During soldering, component covers and holders should leave clearance to avoid placing damaging stress on the LED during soldering.



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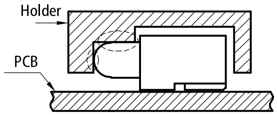

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5. The tip of the soldering iron should never touch the lens epoxy.
6. After soldering, allow at least three minutes for the component to cool down to room temperature before further operations.
7. If the LED will undergo multiple soldering passes or face other processes where the part may be subjected to intense heat, please check with Kingbright for compatibility.

PRECAUTIONARY NOTES

1. The information included in this document reflects representative usage scenarios and is intended for technical reference only.
2. The part number, type, and specifications mentioned in this document are subject to future change and improvement without notice. Before production usage customer should refer to the latest datasheet for the updated specifications.
3. When using the products referenced in this document, please make sure the product is being operated within the environmental and electrical limits specified in the datasheet. If customer usage exceeds the specified limits, Kingbright will not be responsible for any subsequent issues.
4. The information in this document applies to typical usage in consumer electronics applications. If customer's application has special reliability requirements or have life-threatening liabilities, such as automotive or medical usage, please consult with Kingbright representative for further assistance.
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