早安股份有限公司
YELLOW STONE CORP.

PRELIMINARY SPEC

5.0x5.0mm SMD CHIP LED

PART NO: MS-PAF5550URACX3 **RED**

ATTENTION
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC DISCHARGE SENSITIVE DEVICES

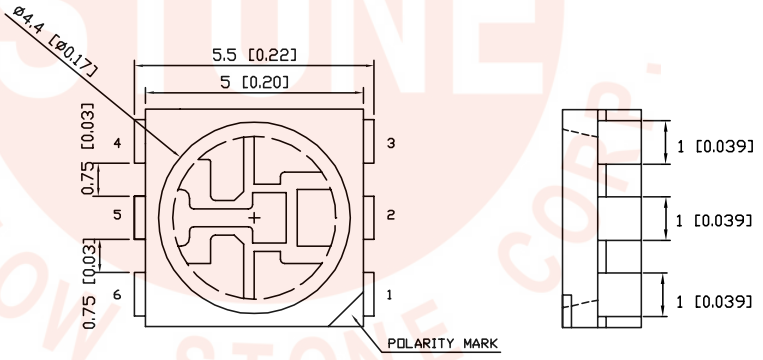
Features

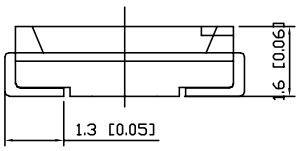
- 5.0mmx5.0mm SMT LED, 1.6mm THICKNESS.
- WIDE VIEWING ANGLE.
- IDEAL FOR BACKLIGHT AND INDICATOR.
- PACKAGE : 1000PCS / REEL.
- RoHS COMPLIANT.

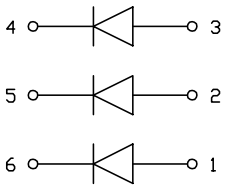
Applications

- Automotive: backlighting in dashboard and switch.
- Telecommunication: indicator and back-lighting in telephone and fax.
- Flat backlight for LCD switch and symbol.

Package Dimensions







Notes:
1. All dimensions are in millimeters.
2. Tolerance is ±0.25 unless otherwise noted.
3. Specifications are subject to change without notice.

Device Selection Guide

Part No.	Chip		Lens color
MS-PAF5550URACX3	Material	Emitted color	Water clear
	(InGaAlP)	RED	

Absolute Maximum Ratings at T_A=25°C

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	62	mW/per chip
Forward Current	I_F	25	mA/per chip
Peak Forward Current*1	I_{FP}	100	mA/per chip
Reverse Voltage	V_R	5	V/per chip
Operating Temperature	Topr	-40°C To +85°C	
Storage Temperature	Tstg	-40°C To +85°C	

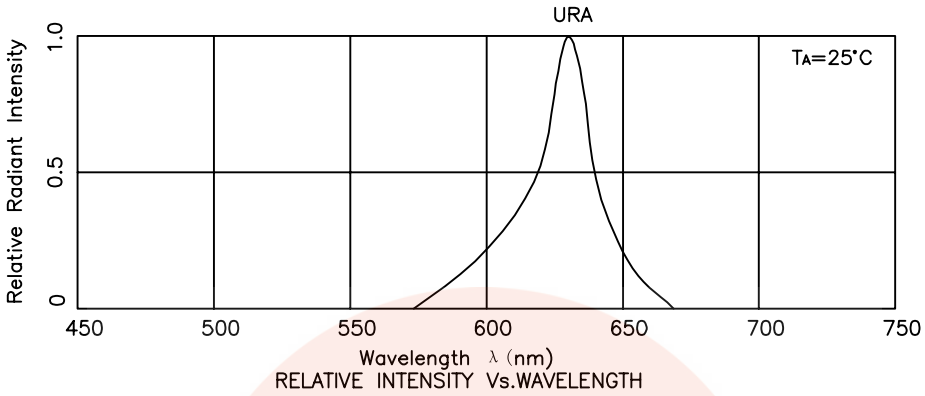
Notes:
*1: Pulse width≤0.1ms, Duty cycle≤1/10

Electrical / Optical Characteristics at T_A=25°C

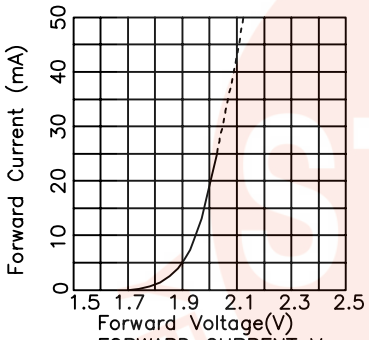
Parameter	Symbol	Min.	Typ.	Max	Unit	Test Conditions
Forward Voltage	V_F	1.8	—	2.6	V	IF=20mA/per chip
Reverse Current	I_R	—	—	10	μA	VR=5V/per chip
Dominate Wavelength	λ_D	617	—	629	nm	IF=60mA/three chip
Luminous Intensity	I_V	650	—	1400	mcd	IF=60mA/three chip
Viewing Angle	2θ1/2	—	120	—	Deg.	IF=20mA/per chip

Remarks:
If special sorting is required (e.g. binning based on forward voltage, luminous intensity, or chromaticity), the typical accuracy of the sorting process is as follows:
1. wavelength: ±1nm
2. Luminous Intensity: ±15%
3. Forward Voltage: ±0.1V

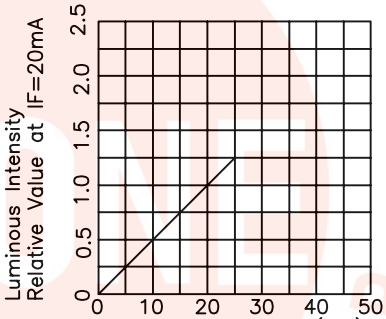
Typical Electrical/Optical Characteristics Curves



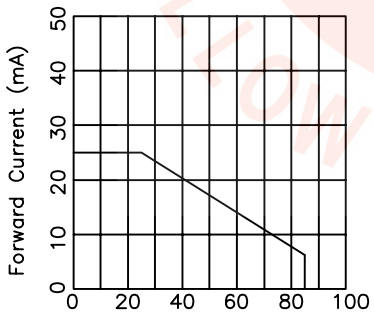
RELATIVE INTENSITY Vs.WAVELENGTH



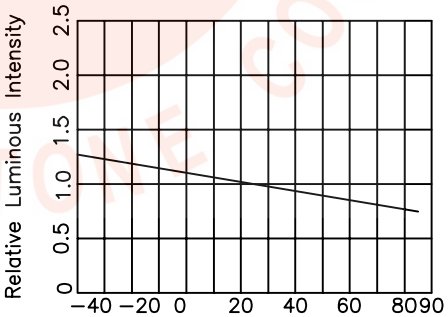
FORWARD CURRENT Vs.
FORWARD VOLTAGE



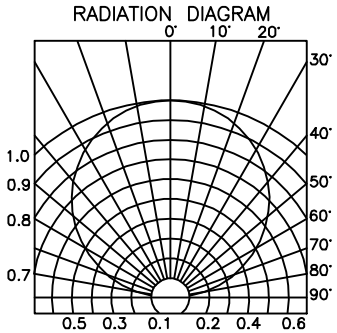
LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT Vs.
DERATING CURVE

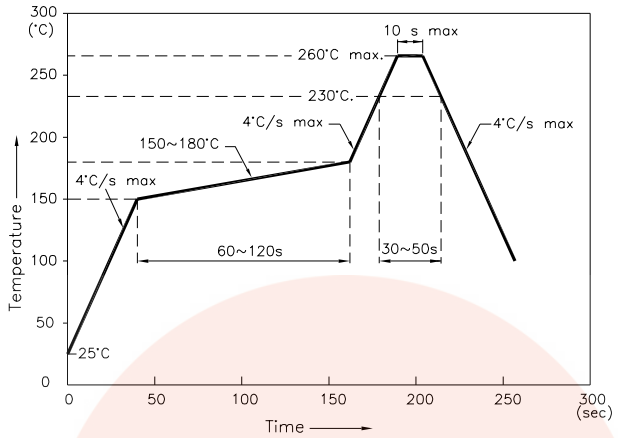


LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE



Soldering Profile

Reflow Soldering Profile For Lead-free SMT Process.

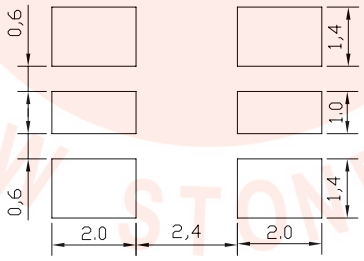


NOTES:

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 epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

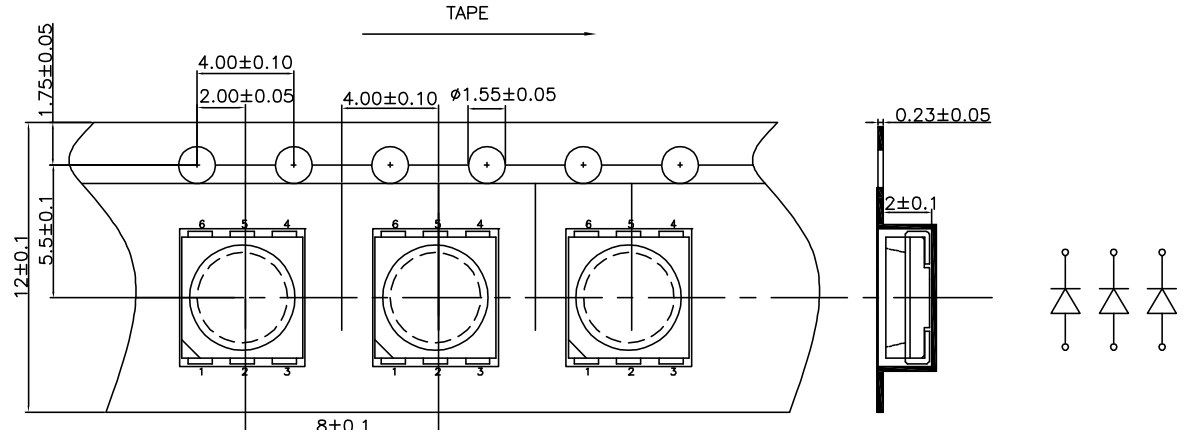
Recommended soldering pattern

(Units:mm)



Tape specifications

(Units:mm)



λD Rank

Rank	λD(nm)		Condition
	Min	Max	
5	617	621	IF=60mA/three chips
6	621	625	
7	625	629	

Tolerance:±1nm

IV Rank

Rank	IV(mcd)		Condition
	Min	Max	
V	650	845	IF=60mA/three chips
W	845	1100	
X	1100	1400	

Tolerance:±15%

VF Rank

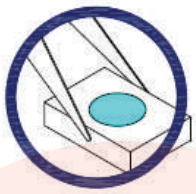
Rank	VF(V)		Condition
	Min	Max	
B	1.8	2.0	IF=60mA/three chip
C	2.0	2.2	
D	2.2	2.4	
E	2.4	2.6	

Tolerance:±0.1V

Handling Precautions

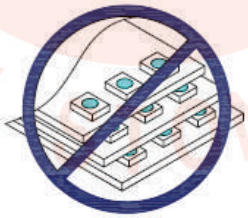
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.
As a result, special handling precautions need to be observed during assembly using silicone encapsulated LED products. Failure to comply might leads to damage and premature failure of the LED.

1. Handle the component along the side surfaces by using forceps or appropriate tools.

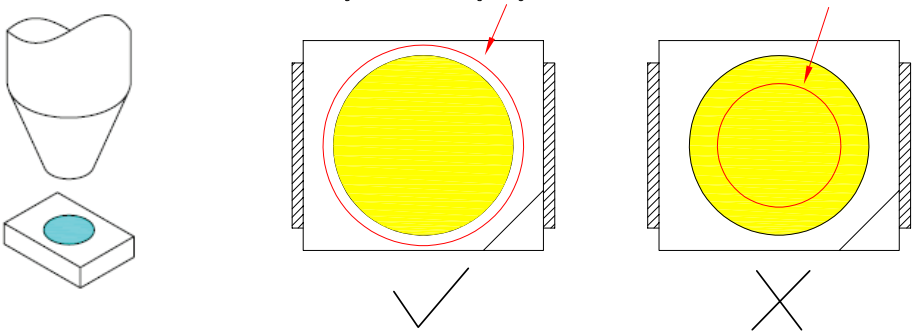


2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.

3. Do not stack together assembled PCBs containing exposed LEDs. Outside impact may scratch the silicone lens or damage the internal circuitry.



4. During surface-mounting, the pickup capillary diameter should be larger than the silicone lens to insure the capillary does not scratch or damage the lens.



◆ CAUTIONS:

1.Storage

• In order to avoid the absorption of moisture, it is recommended to store in the dry box (or desicca tor) with a desiccant. Otherwise, to store them in the following environment is recommended.
Temperature: 5°C~30°C Humidity: 60%HR max.

• Attention after opened
However LED is corresponded SMD, when LED be soldered dip, interfacial separation may affect The light transmission efficiency, causing the light intensity to drop. Attention in followed.
a. After opened and mounted, the soldering shall be quickly.
b. Keeping of a fraction
Temperature: 5°C~40°C Humidity: less than 30%

• In case or more than 1 week passed after opening or change color of indicator on desiccant compo nents shall be dried 10-12hr. at 60°C±3°C.

• In case of supposed the components is humid, shall not be dried dip-solder just before.
100Hr at 80°C±3°C or 12Hr at 100°C±3°C

2.ESD (Electrostatic Discharge)

Static Electricity or power surge will damage the LED.
The following procedures may decrease the possibility of ESD damage.

• All production machinery and test instruments must be electrically grounded.
• Use a conductive wrist band or anti-electrostatic glove when handling these LEDs.
• Maintain a humidity level of 50% or higher in production areas.
• Use anti-static packaging for transport and storage.