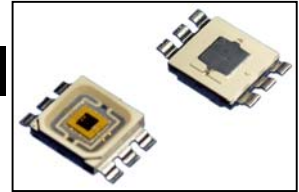




SMB3W-420/525/640-I



TECHNICAL DATA

High Power LED, SMD

InGaN / GaInAsP

SMB3W-420/525/640-I are multi chip High Power LEDs, isolated mounted on a cooper heat sink with a 5x5 mm SMD package and molded with silicone resin. On forward bias, it emits a radiation at a peak wavelength of 420nm, 525nm and 640 nm.

Specifications

- Structure: InGaN and GaInAsP, 3x1W high power chip
- Peak Wavelengths: 420 nm, 525 nm, 640 nm
- Optical Output Power: 115 mW, 60 mW, 110 mW
- Package
 - SMD, PPA resin Isolator: AlN ceramics
 - Lead frame die: silver plated on copper
 - Lens: silicone resin

Absolute Maximum Ratings ($T_a=25^{\circ}\text{C}$)

Item	Symbol	Value			Unit
		420 nm	525 nm	640 nm	
Power Dissipation	P_D	1200	1200	1800	mW
Forward Current	I_F	300	300	600	mA
Pulse Forward Current * ¹	I_{FP}	1000	1000	2000	mA
Reverse Voltage	V_R	5			V
Thermal Resistance	R_{th}	9	9	6	K/W
Junction Temperature	T_J	100			$^{\circ}\text{C}$
Operating Temperature	T_{opr}	-30 ... +85			$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-30 ... +100			$^{\circ}\text{C}$
Soldering Temperature * ²	T_{sol}	255			$^{\circ}\text{C}$

*¹ duty = 1%, pulse width = 10 μs

*² must be completed within 5 seconds

Electro-Optical Characteristics

Item	Symbol	Condition	Typical			Unit
			420	525	640	
Forward Voltage	V_F	$I_F = 300 \text{ mA}$	3.5	3.3	2.6	V
Total Radiated Power	P_O	$I_F = 300 \text{ mA}$	115	60	110	mW
Radiant Intensity	I_E	$I_F = 300 \text{ mA}$	30	20	35	mW/sr
Half Width	$\Delta\lambda$	$I_F = 50 \text{ mA}$	12	20	13	nm
Viewing Half Angle	$\Theta_{1/2}$	$I_F = 50 \text{ mA}$	± 62			deg.

Total Radiated Power is measured by S3584-08

Radiant Intensity is measured by Tektronix J-6512

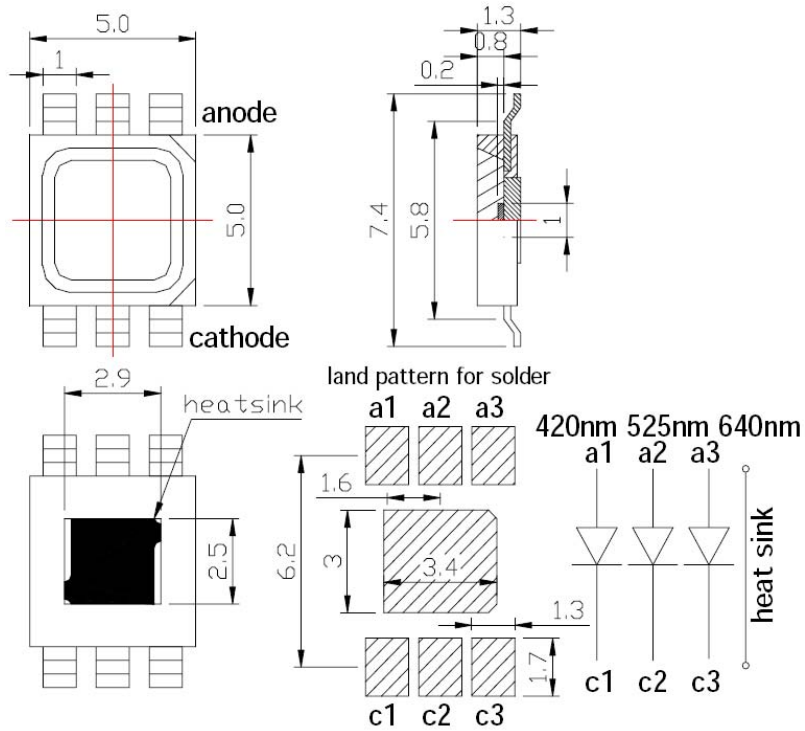
Notes

- Do not view directly into the emitting area of the LED during operation!
- The above specifications are for reference purpose only and subjected to change without prior notice.



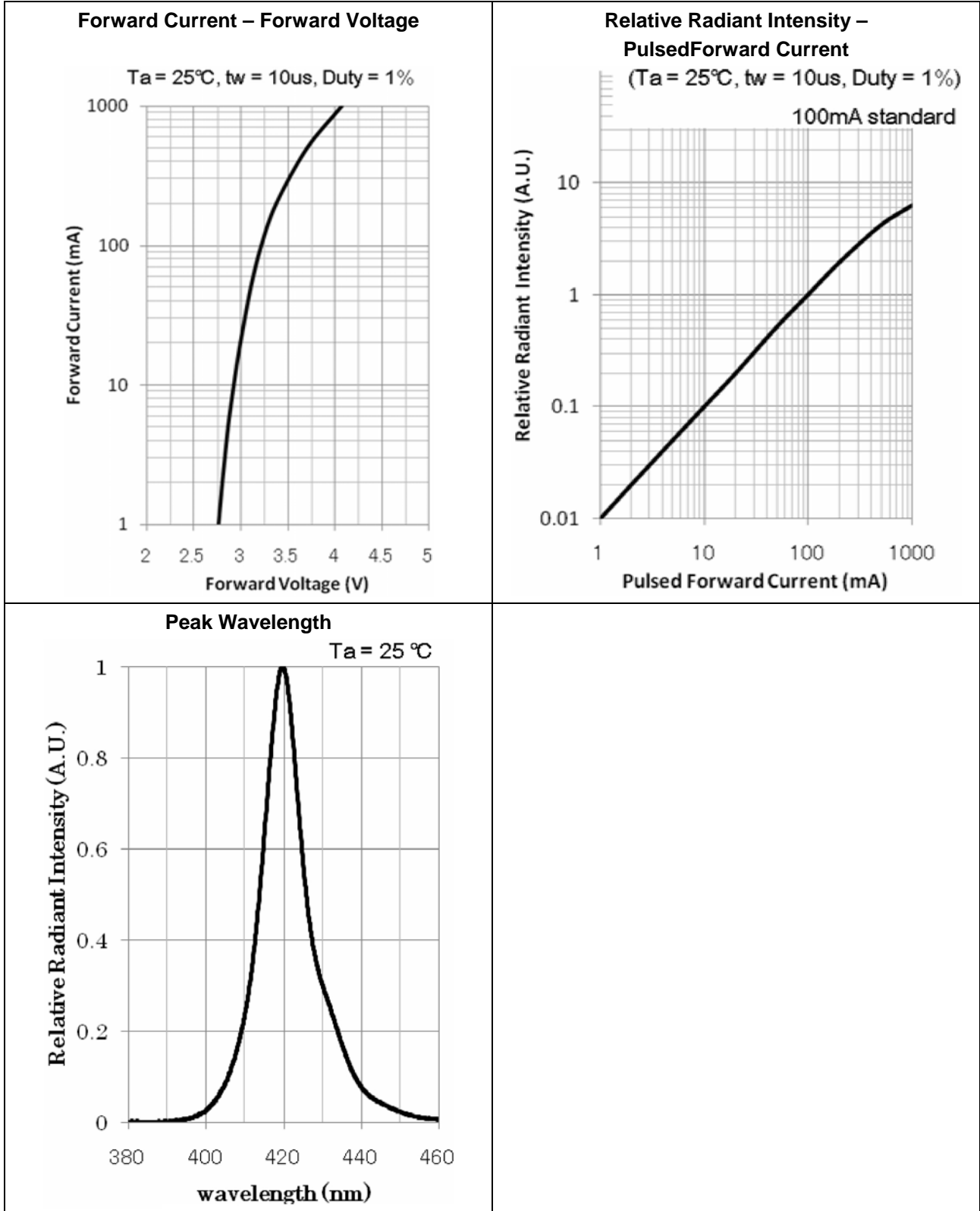
Package Dimensons

Unit:mm



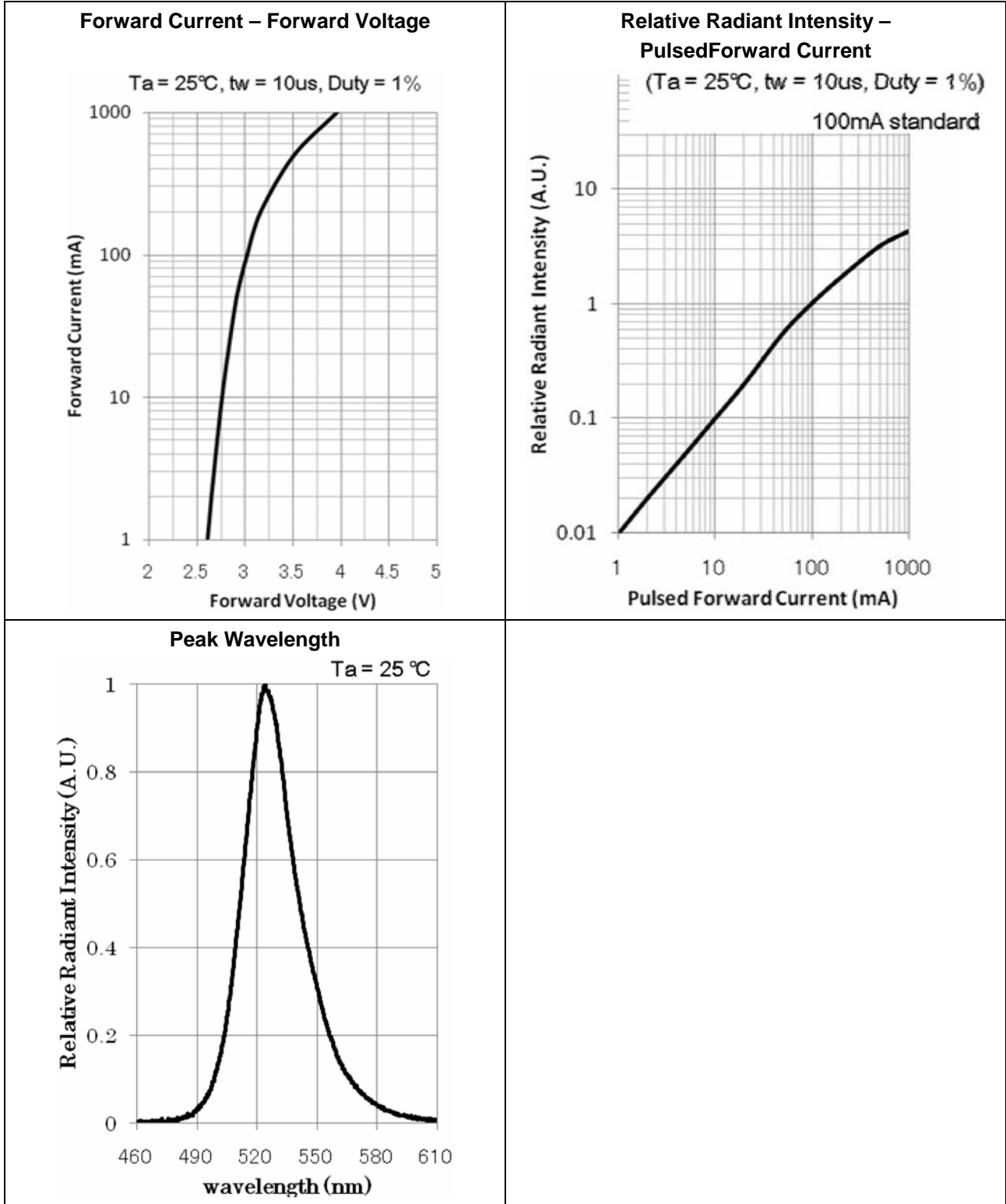


Typical Performance Curves, 420 nm



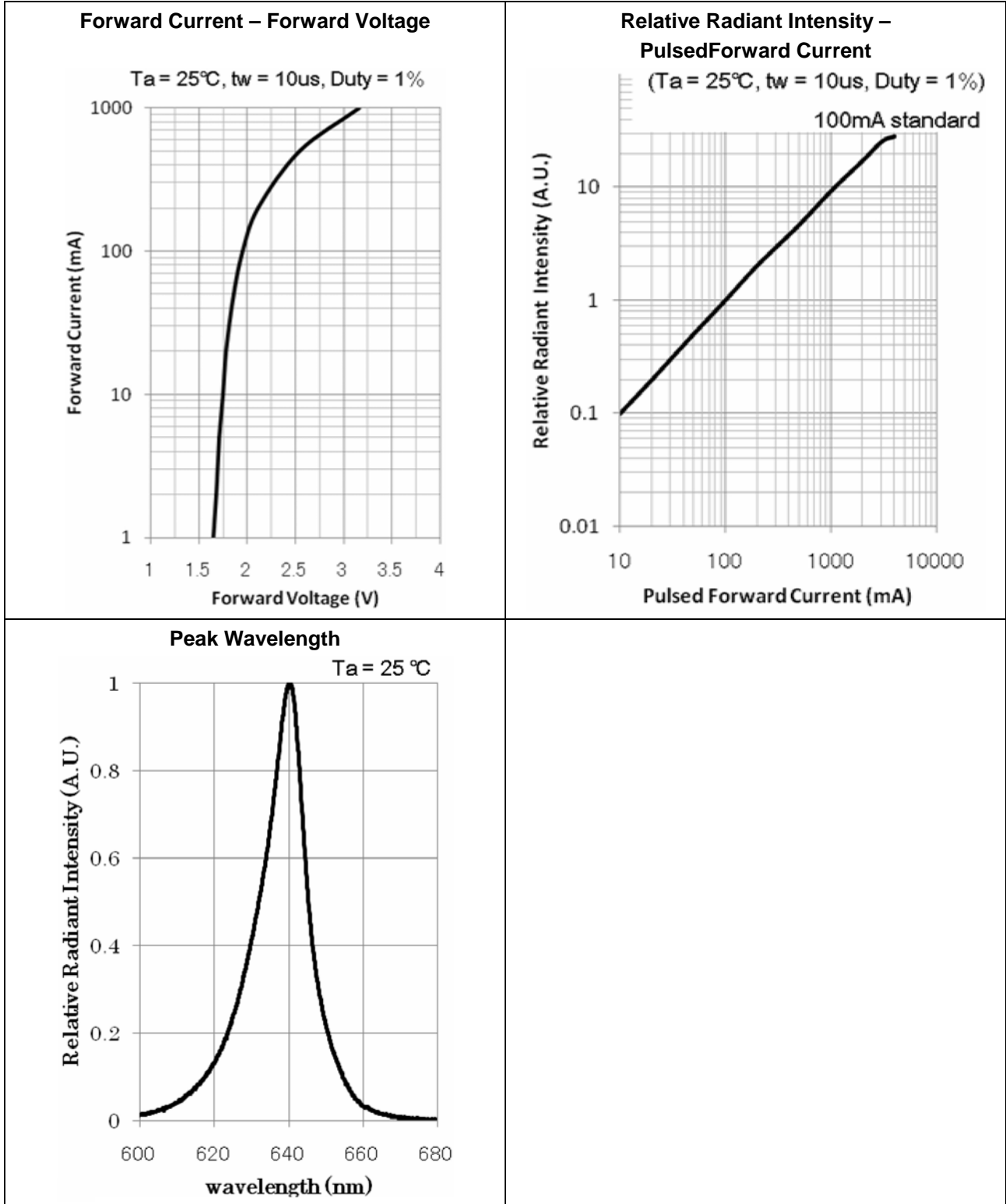


Typical Performance Curves, 525 nm



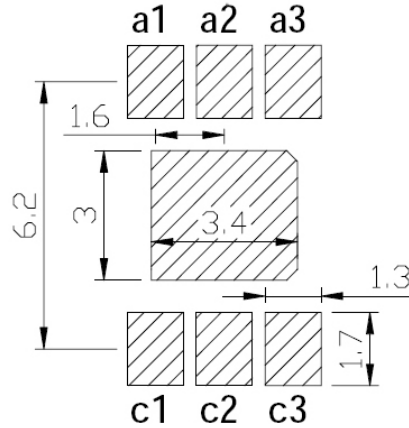


Typical Performance Curves, 640 nm





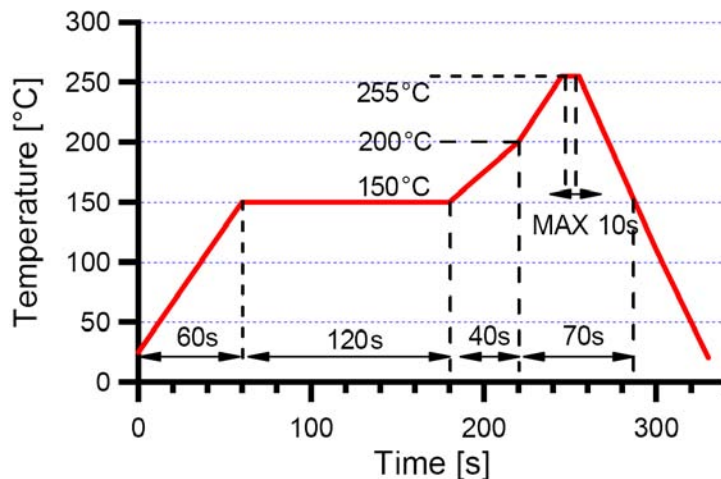
Recommended Land Layout (Unit: mm)



1. Soldering Conditions

- DO NOT apply any stress to the lead particularly when heat.
- After soldering the LEDs should be protected from mechanical shock or vibration until the LEDs return to room temperature.
- When it is necessary to clamp the LEDs to prevent soldering failure, it is important to minimize the mechanical stress on the LEDs.

Soldering Conditions



2. Static Electricity

- The LEDs are very sensitive to Static Electricity and surge voltage. So it is recommended that a wrist band or an anti-electrostatic glove be used when handling the LEDs.
- All devices, equipment and machinery must be grounded properly. It is recommended that precautions should be taken against surge voltage to the equipment that mounts the LEDs.

