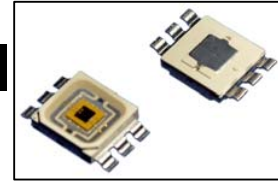




SMB3W-420/525/640-I



TECHNICAL DATA

High Power LED, SMD

AlGaInP

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

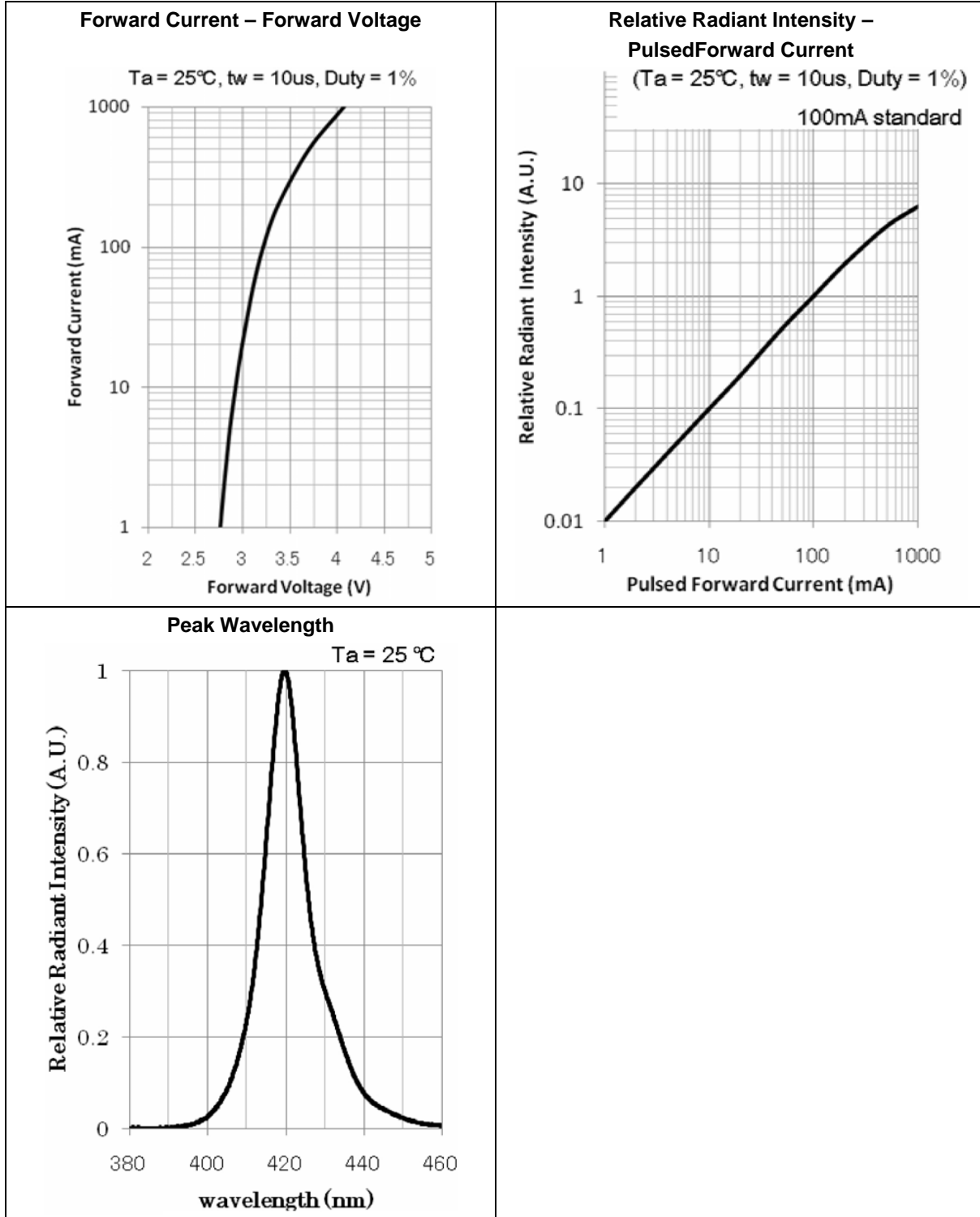
Radiant Intensity is measured by Tektronix J-6512

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.

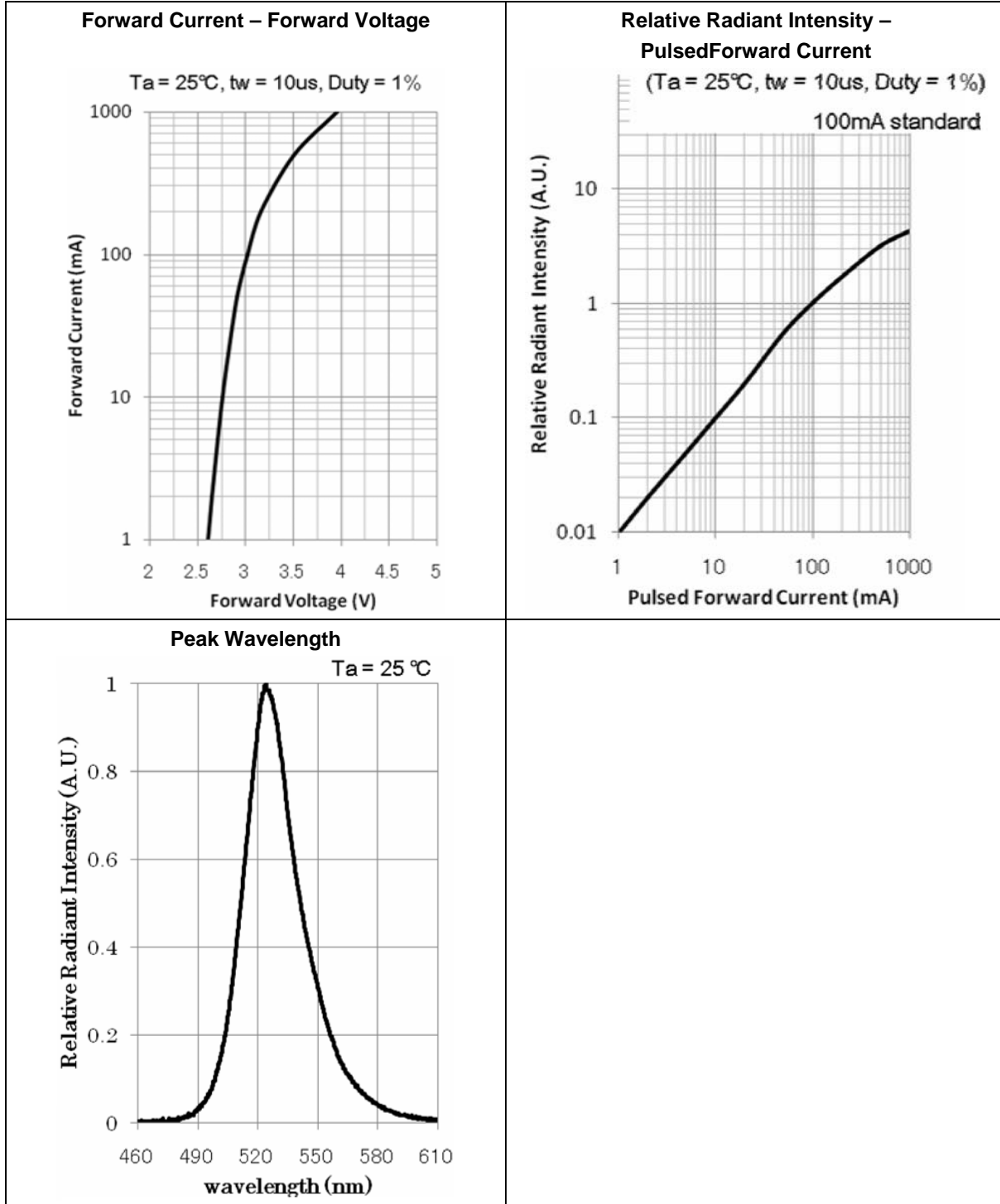


Typical Performance Curves, 420 nm



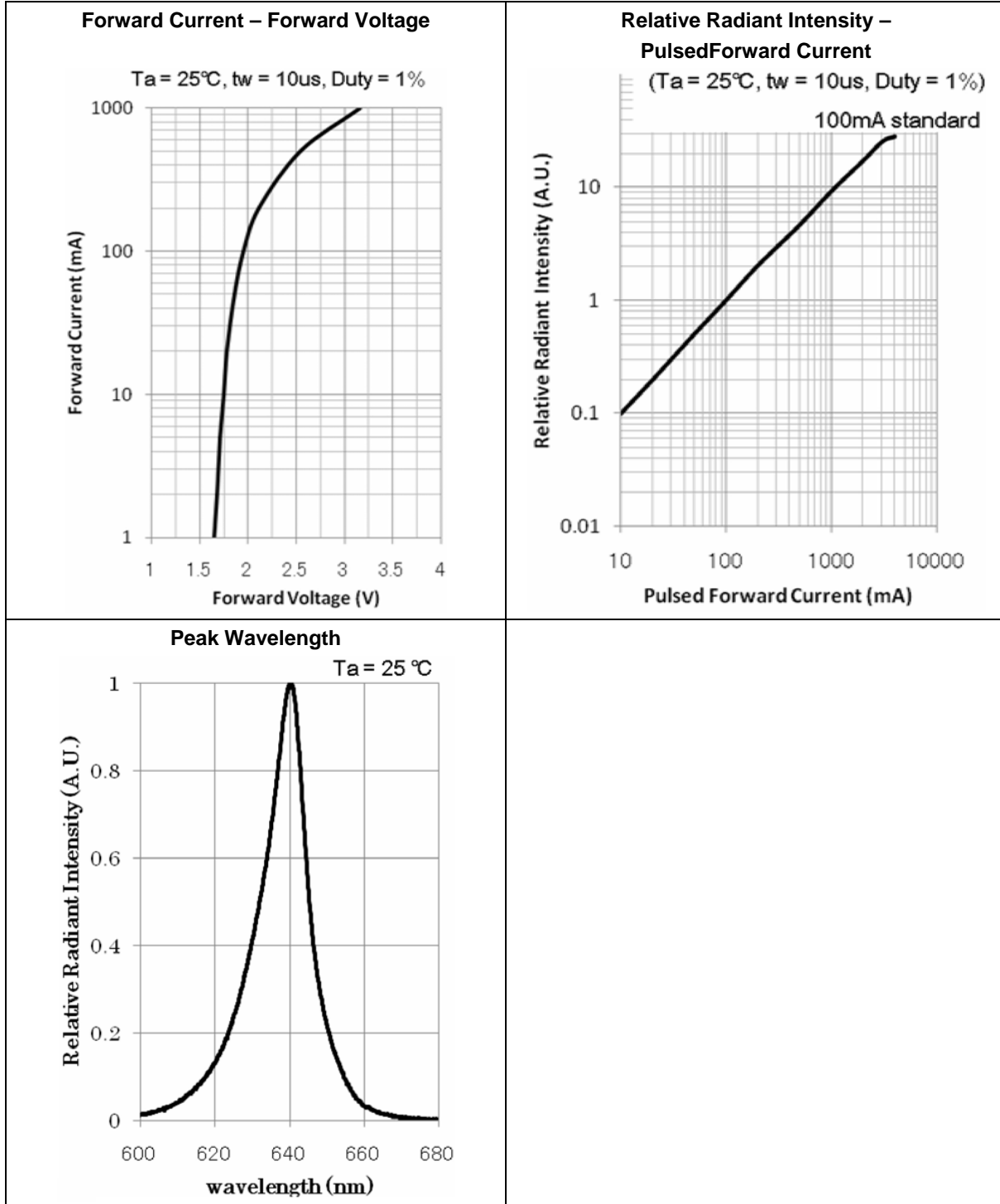


Typical Performance Curves, 525 nm



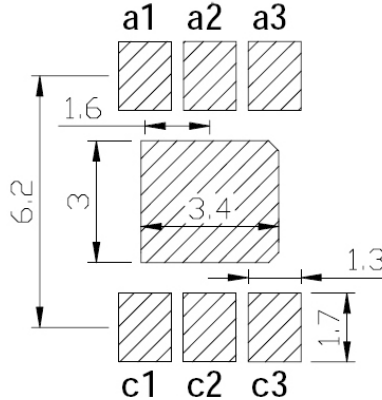


Typical Performance Curves, 640 nm





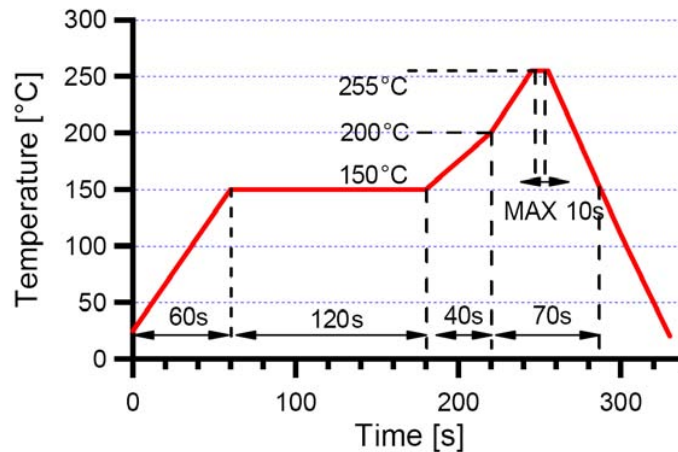
Recommended Land Layout (Unit: mm)



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.

