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SMC660N

- **RED SMD LED**
- **660 nm, 11 mW**
- **3020 Ceramic SMD package**
- **Beam Angle: ± 61°**

Description

SMC660N is a red surface mount LED, utilizing a AlGaInP based chip with a typical peak wavelength of 660 nm and optical output power of 11 mW @ 20 mA. **SMC660N** comes in 3020 ceramic SMD package with flat epoxy resin mold.

Maximum Ratings*

Parameter	Symbol	Values Min.	Values Max.	Unit
Power Dissipation	P_D		120	mW
Forward Current	I_F		50	mA
Pulse Forward Current **	I_{FP}		300	mA
Reverse Voltage (I_R = 10 µA)	U_R		5	V
Thermal Resistance	R_{THJA}		80	K/W
Junction Temperature	T_J		120	°C
Operating Temperature	T_{CASE}	- 40	+ 100	°C
Storage Temperature	T_{STG}	- 40	+ 100	°C
Lead Solder Temperature (t_{max}. 5s)	T_{SLD}		+ 250	°C

***** Operating close to or exceeding these parameters may damage the device, ** duty cycle = 1 %, pulse width = 10 µs

Electro-Optical Characteristics (T_{CASE} = 25°C)

Parameter	Symbol	Conditions	Values Min.	Values Typ.	Values Max.	Unit
Peak Wavelength	λ_P	I_F=20 mA	650	660	670	nm
Dominant Wavelength	λ_P	I_F=20 mA		640		
Half Width	λ_Δ	I_F=20 mA		16		nm
Forward Voltage	U_F	I_F=20 mA		1.9	2.3	V
	U_{FP}	I_{FP}=300 mA		3.5		
Total Radiated Power	P_O	I_F=20 mA		11		mW
		I_{FP}=300 mA		140		
Radiant Intensity	I_E	I_F=20 mA		3.4		mW/sr
		I_{FP}=300 mA		44		
Beam Angle	$2\theta_{1/2}$	I_F=20 mA		122		deg.
Rise Time	t_r	I_F=20 mA		10		ns
Fall Time	t_f	I_F=20 mA		10		ns

* duty cycle = 1 %, pulse width = 10 µs

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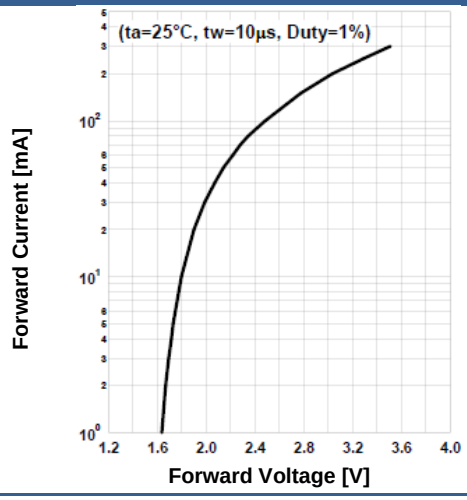
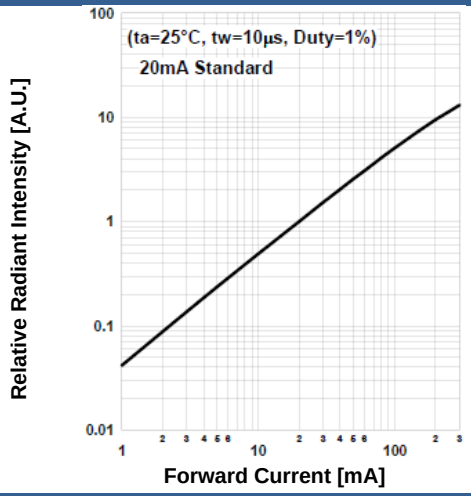
Typical Performance Curves

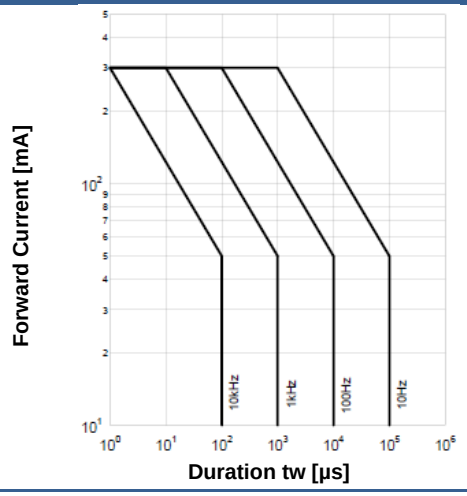
Forward Current vs. Forward Voltage



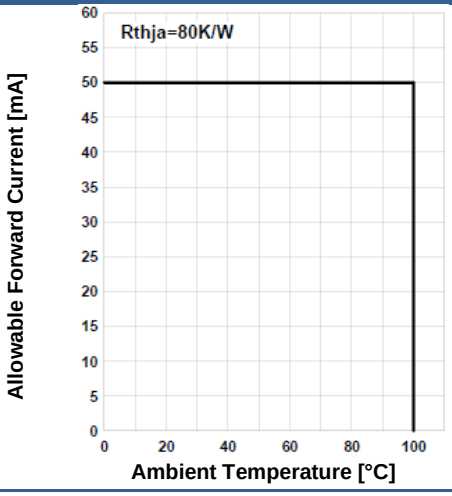
Relative Radiant Intensity vs. Forward Current



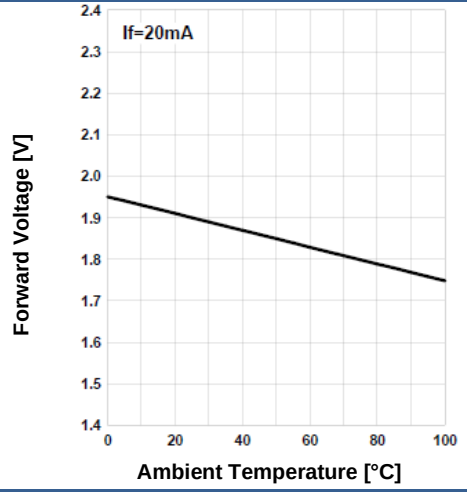
Forward Current vs. Pulse Duration



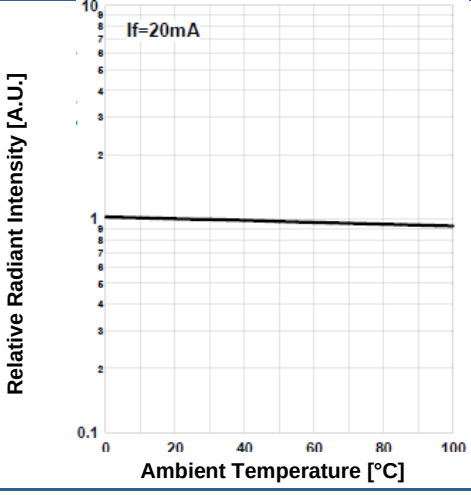
Allowed Forward Current vs. Amb. Temperature



Forward Voltage vs. Ambient Temperature



Rel. Radiant Intensity vs. Ambient Temperature



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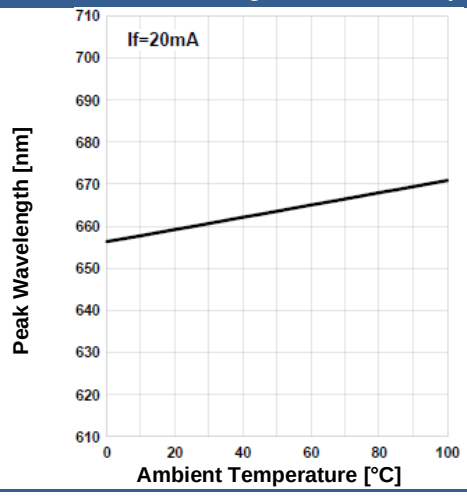
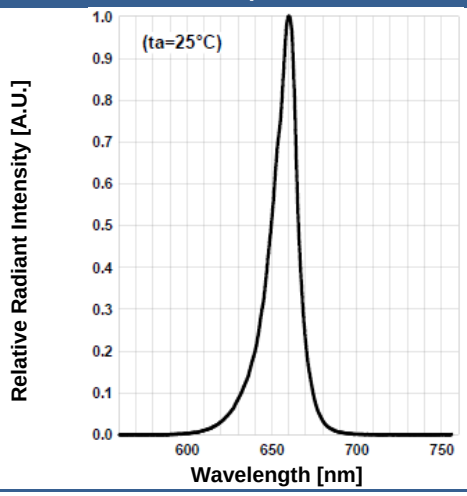
Typical Performance Curves

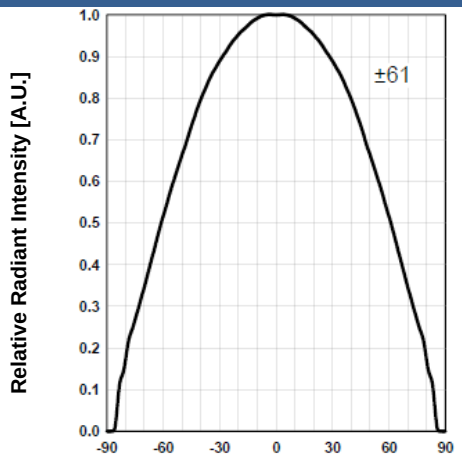
Peak Wavelength vs. Amb. Temp.



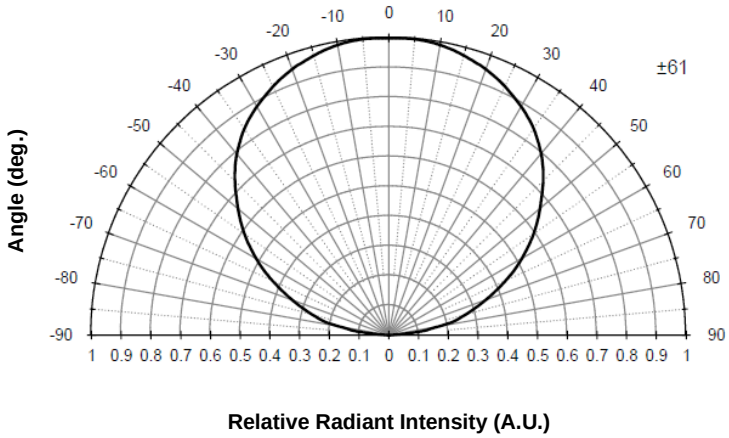
Relative Spectral Emission



Radiation Characteristics

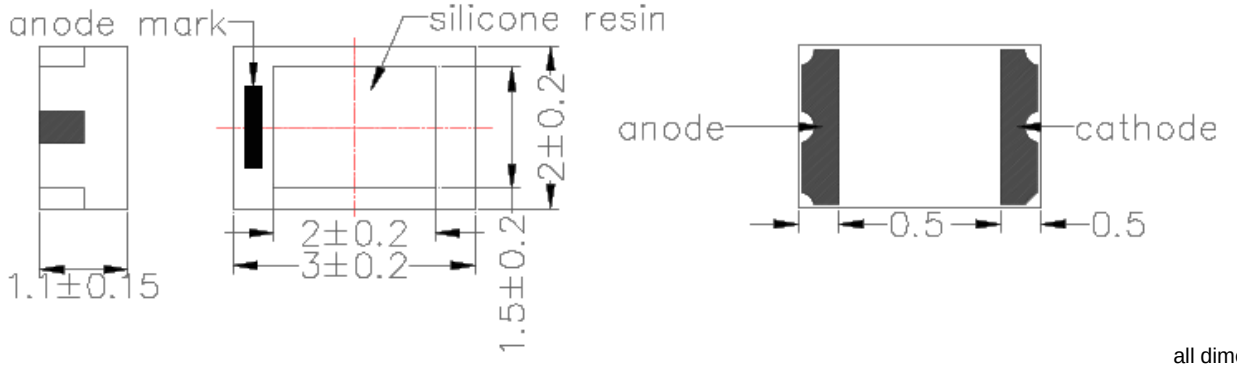


Radiation Characteristics



Outline Dimensions

3020 SMD



all dimensions in mm

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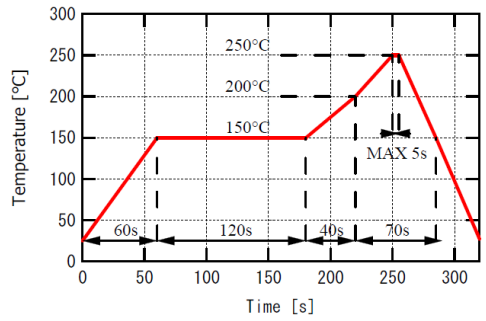
General Notes

Soldering

- Do avoid overheating of the LED
- Do avoid electrostatic discharge (ESD)
- Do avoid mechanical stress, shock, and vibration
- Do only use non-corrosive flux
- Do not apply current to the LED until it has cooled down to room temperature after soldering

Recommended soldering conditions



Cleaning

- **Cleaning with isopropyl alcohol, propanol, or ethyl alcohol is recommended**
- DO NOT USE acetone, chloroseen, trichloroethylene, or MKS
- DO NOT USE ultrasonic cleaners

Static Electricity

- **LEDs are sensitive to electrostatic discharge (ESD)**.
- Precautions against ESD must be taken when handling or operating these LEDs
- Surge voltage or electrostatic discharge can result in complete failure of the LED.

Radiation

- During operation these LEDs do emit light, which **could be hazardous to skin and eyes**, and **may cause cancer**.
- Do avoid exposure to the emitted light. Protective glasses if needed
- It is further advised to attach a warning label on products/systems.

Operation

- **Do *only* operate LEDs with a current source.**
- Running these LEDs from a voltage source will result in complete failure of the device.
- Current of a LED is an exponential function of the voltage across it. Usage of current regulated drive circuits is mandatory.

Storage

- The **maximum shelf life** of LEDs in the originally sealed aluminum bag is **12 months**.
- Before opening the aluminum bag, please store it at **<30 ºC, <60 % RH**.
- After opening the aluminum bag, please solder the LEDs within **72 hours (floor life)** at **5 – 30 ºC, <50 % RH**.
- Put any unused, remaining LEDs and silica gel back in the same aluminum bag and then vacuum-seal the bag.
- It is recommended to keep the re-sealed bag in a desiccator at <30%RH.

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