ROITHNER LASERTECHNIK GmbH
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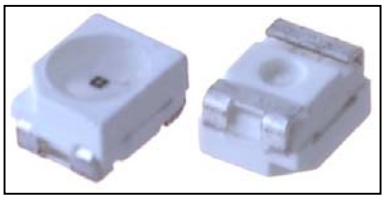
SMT405R



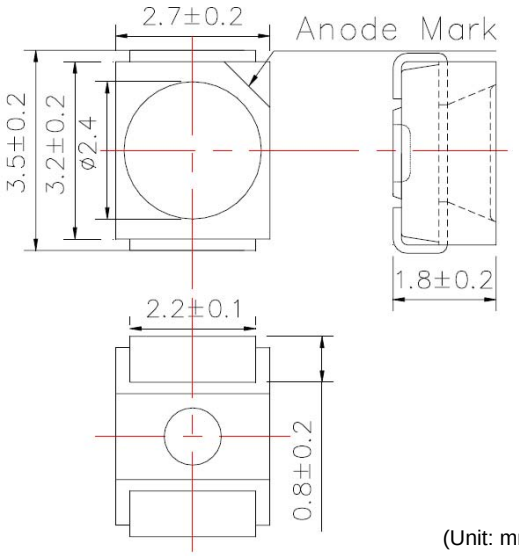
TECHNICAL DATA

Visible LED, SMT InGaN

SMT405R is a InGaN LED mounted on the lead frame as TOP LED package, sealed with UV resistant resin for damp proof. On forward bias, it emits a radiation of typical 12.5 mW at a peak wavelength of 405 nm.

Specifications

- Structure: InGaN
- Peak Wavelength: typ. 405 nm
- Optical Output Power: typ. 12.5 mW
- Package: PPA resin, UV resistant resin



(Unit: mm)

Absolute Maximum Ratings (T_a=25°C)

Item	Symbol	Value	Unit
Power Dissipation	P_D	240	mW
Forward Current	I_F	50	mA
Pulse Forward Current**	I_{FP}	100	mA
Reverse Voltage	V_R	5	V
Operating Temperature	T_{opr}	-20 … +80	°C
Storage Temperature	T_{stg}	-30 … +80	°C
Soldering Temperature *	T_{sol}	255	°C

* must be completed within 5 seconds
** max duty cycle 1%, max puls width 10µs

Electro-Optical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	I_F = 20 mA	-	3.5	4.0	V
Pulse Forward Voltage		I_{FP} = 100 mA	-	4.9	-	
Total Radiated Power	P_O	I_F = 20 mA	6.0	12.5	-	mW
		I_{FP} = 100 mA	-	50	-	
Radiation Intensity	I_E	I_F = 20 mA	-	2.6	-	mW/sr
Brightness	I_V	I_F = 20 mA	-	10	-	mcd
Peak Wavelength	λ_P	I_F = 20 mA	395	405	415	nm
Half Width	$\Delta\lambda$	I_F = 20 mA	-	15	-	nm
Viewing Half Angle	$\Theta_{1/2}$	I_F = 20 mA	-	±55	-	deg.

Total Radiated Power is measured by S3584-08
Radiated Intensity is measured by Ando Optical Multi Meter AQ2140 & AQ2741
Brigthness is measured by Tektronix J-16

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.

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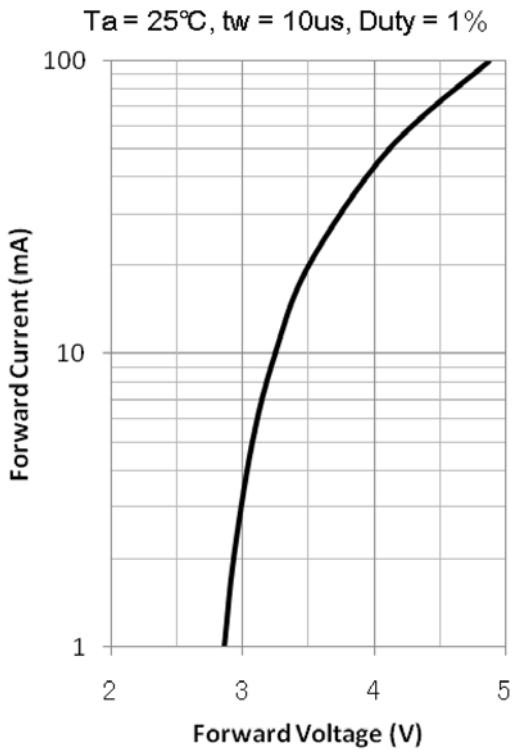
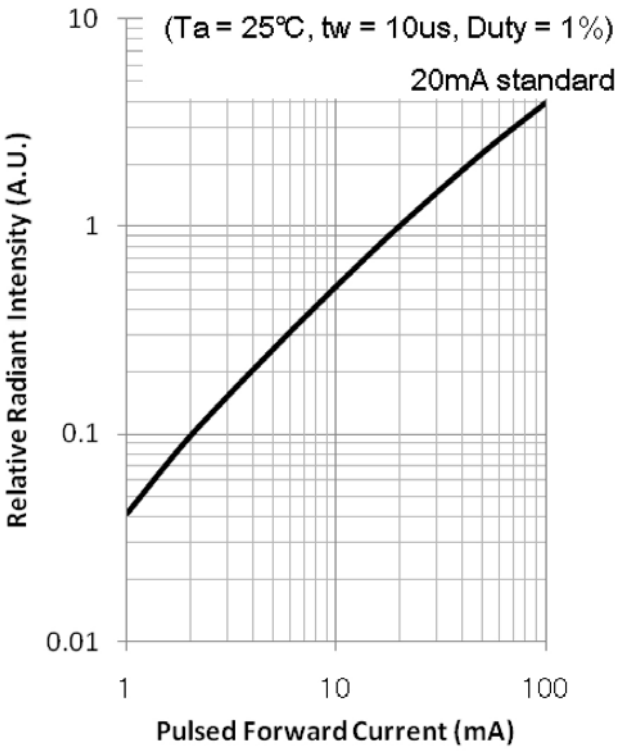
Typical Performance Curves

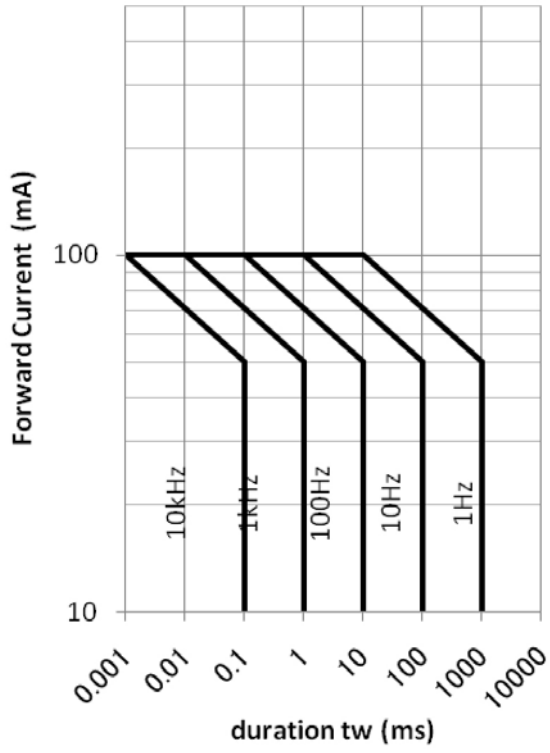
Forward Current – Forward Voltage



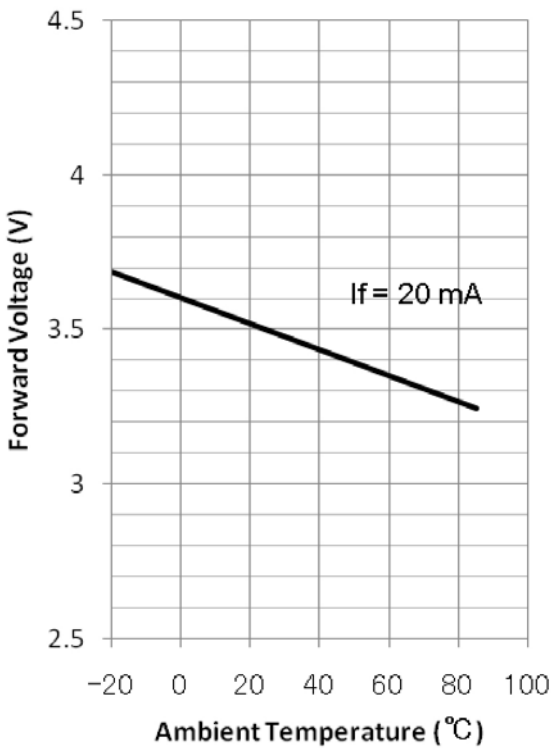
Relative Radiant Intensity – Pulsed Forward Current



Forward Current – Pulse Duration



Forward Voltage – Ambient Temperature



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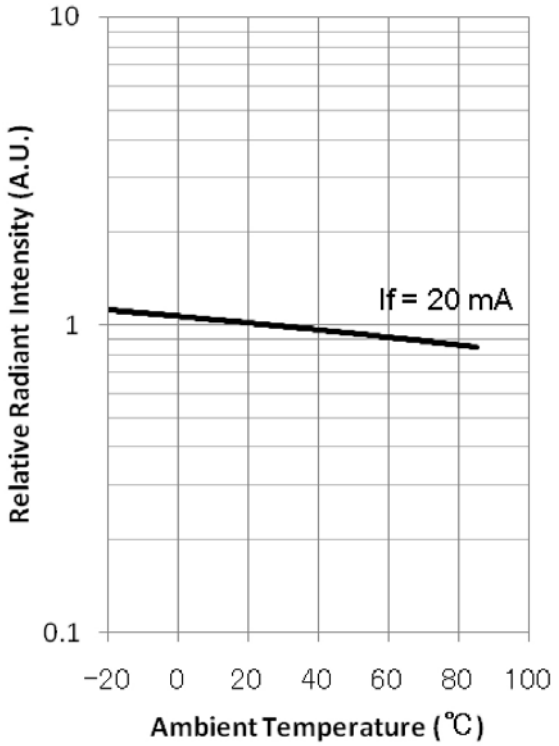
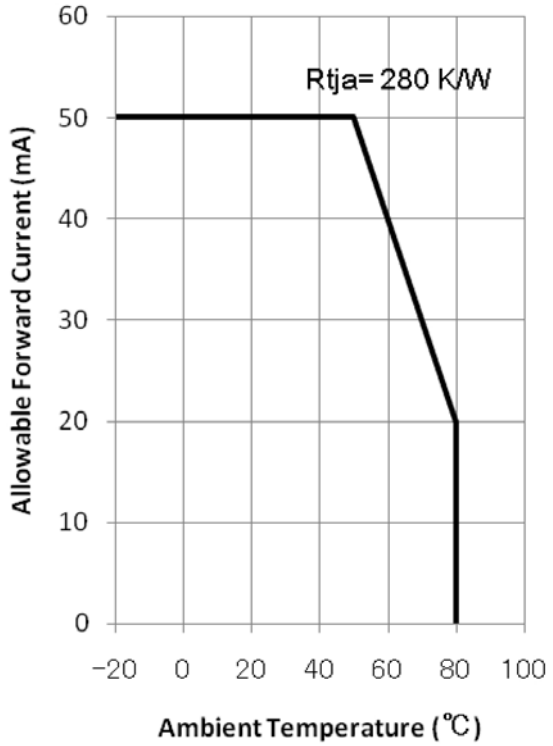
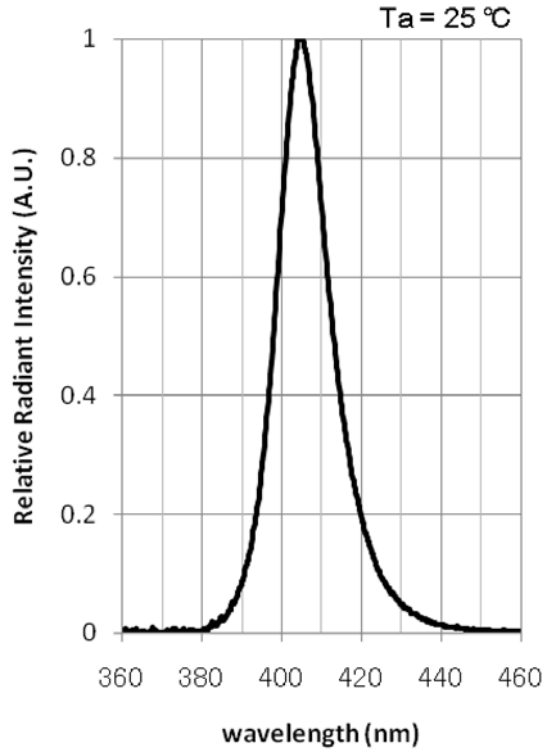
Relative Radiant Intensity – Ambient Temperature



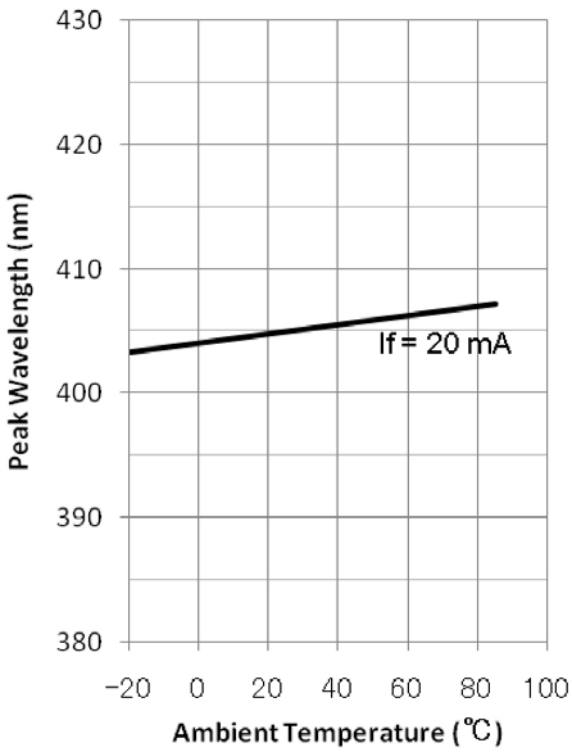
Allowable Forward Current – Ambient Temperature



Peak Wavelength



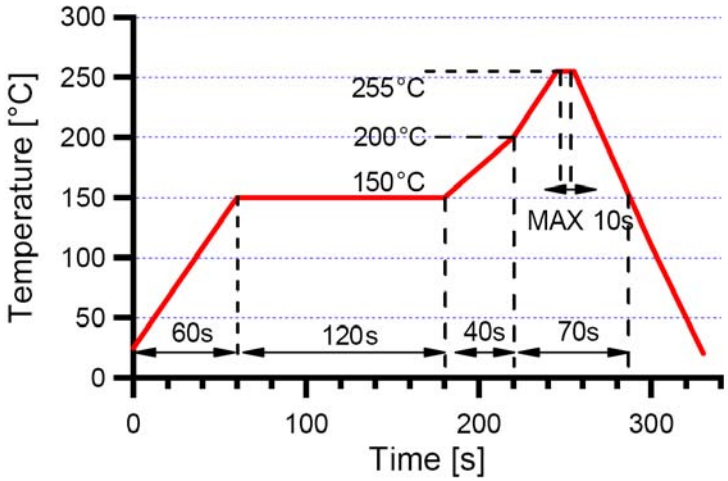
Peak Wavelength – Ambient Temperature



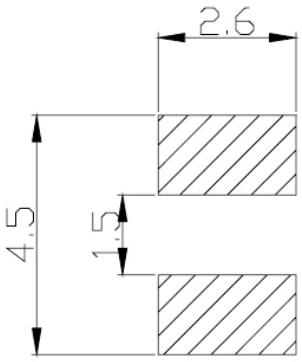
Soldering Conditions

- 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.

Temperature Profile



PCB Footprint Layout



(Unit: mm)

Static Electricity

- LEDs are very sensitive to Static Electricity and surge voltage. It is recommended to always wear a wrist band or an anti-electrostatic glove 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.