

ROITHNER LASERTECHNIK GMBH

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SMB1W-770R

TECHNICAL DATA

High Power LED, SMD

AIGaAs

SMB1W-770R are AlGaAs High Power LEDs mounted on a cooper heat sink with a 5x5 mm SMD package and molded with silicone resin. On forward bias, it emits a radiation of typical 330 mW at a peak wavelength of 770 nm.

Specifications

Structure: AlGaAs, 1W high power chip

Peak Wavelength: typ. 770 nm

Optical Output Power: typ. 330 mW

Package

SMD, PPA resin

Lead frame die: silver plated on copper

Lens: silicone resin

Absolute Maximum Ratings (T_a=25°C)

Item	Symbol	Value	Unit
Power Dissipation	P_{D}	2500	mW
Forward Current	I _F	800	mΑ
Pulse Forward Current *1	I _{FP}	3000	mΑ
Reverse Voltage	V_R	5	V
Thermal Resistance	R _{th}	10	K/W
Junction Temperature	TJ	135	°C
Operating Temperature	T_{opr}	-40 +125	°C
Storage Temperature	T _{stg}	-40 +125	°C
Soldering Temperature *2	T_{sol}	255	°C

land pattern for solder a1 a2 a3 heatsink c1c2c3

(Unit: mm)

Electro-Optical Characteristics

Item	Symbol	Condition	Min.	Тур.	Max.	Unit
Forward Voltage	V_{F}	$I_F = 800 \text{ mA}$	-	2.0	2.5	V
Pulsed Forward Current	V_{FP}	I _{FP} = 3 A	-	3.5	5.5	V
Total Radiated Power	Po	$I_F = 800 \text{ mA}$	-	330	-	- mW
		I _{FP} = 3 A	-	1250	-	
Radiant Intensity	I _E	$I_F = 800 \text{ mA}$	-	145	-	mW/sr
		I _{FP} = 3 A	-	550	-	
Peak Wavelength	λ_{P}	$I_F = 100 \text{ mA}$	-	770	-	nm
Half Width	Δλ	$I_F = 100 \text{ mA}$	-	25	-	nm
Viewing Half Angle	Θ _{1/2}	$I_F = 100 \text{ mA}$	-	±62	-	deg.
Rise Time	t _r	$I_F = 100 \text{ mA}$	-	80	-	ns
Fall Time	t _f	$I_F = 100 \text{ mA}$	-	80	-	ns

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.

 $^{^{*1}}$ duty = 1%, pulse width = 10 μ s

^{*2} must be completed within 5 seconds



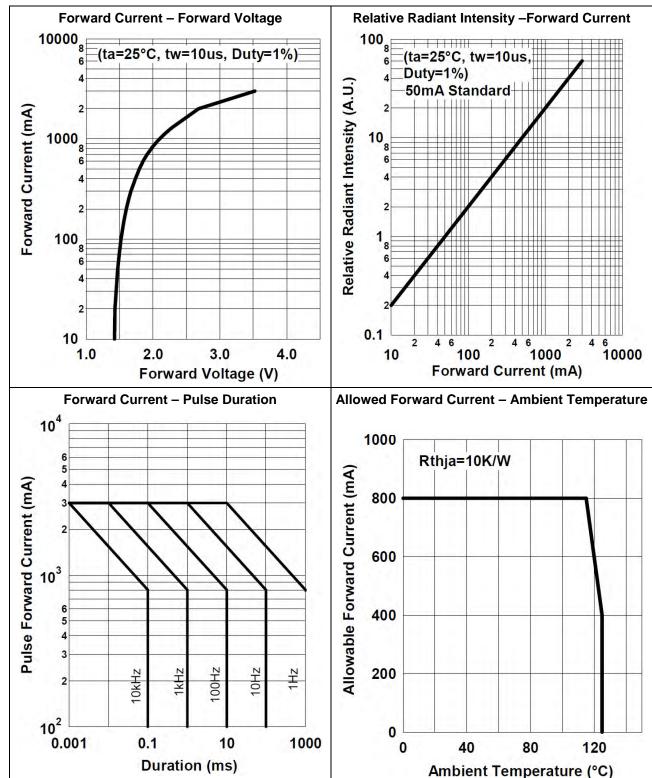
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Typical Performance Curves



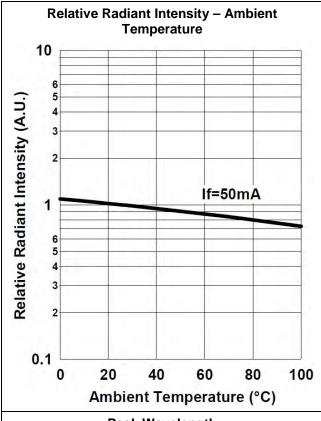


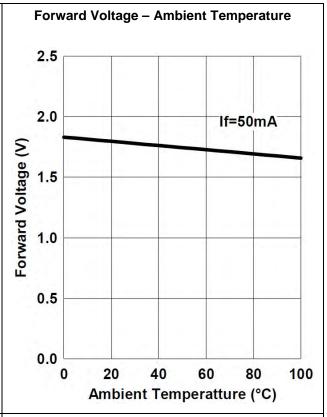
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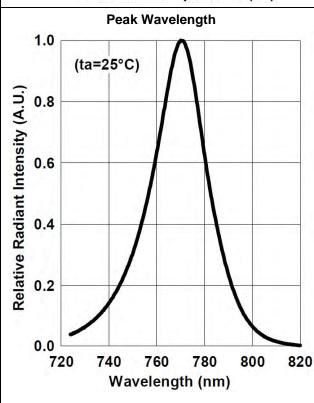


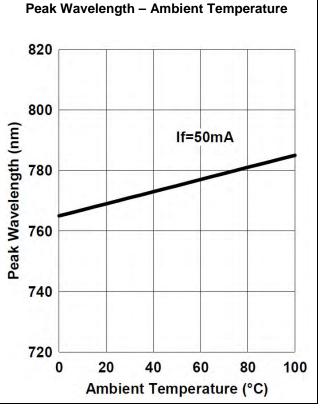
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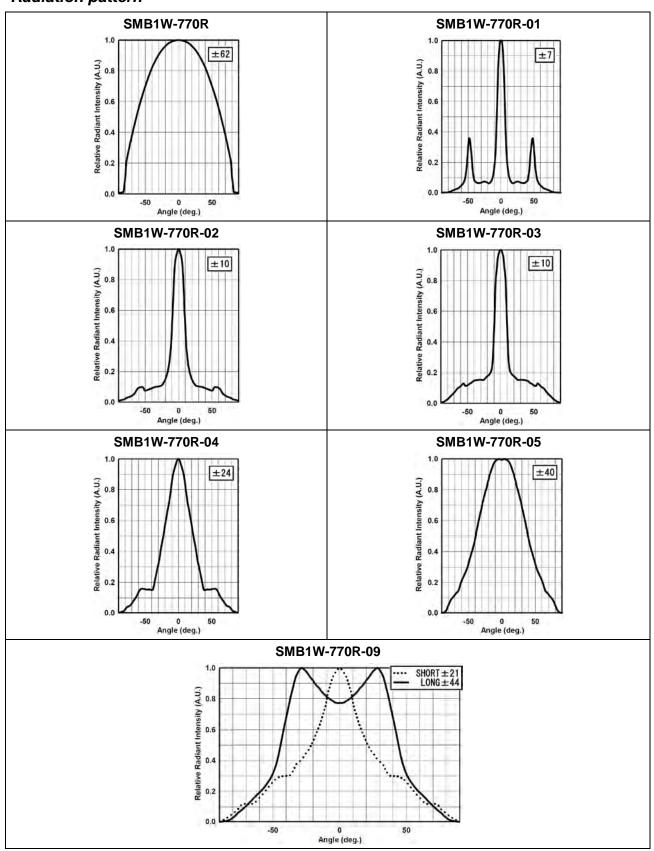
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Radiation pattern



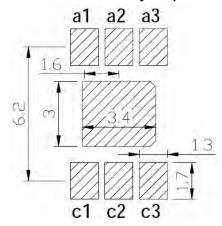


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Recommended Land Layout (Unit: mm)

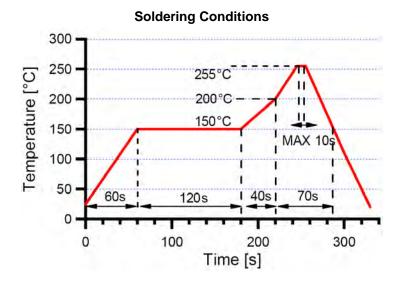


1. Soldering Conditions

DO NOT apply any stress to the lead particularly when heat.

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- 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.



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.

