OSRAM SPL PL90AT03

Datasheet

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Radial T1 3/4

SPL PL90AT03

Pulsed Laser Diode in Plastic Package 75 W Peak Power

Applications

- 3D Sensing
- Robotics

Features

- Laser wavelength 905 nm
- Suited for short laser pulses from 1 to 100 ns
- Cost effective plastic package for high volume applications
- Aperture width 110 µm

Ordering Information

Type	Peak output power typ. I_F = 25 A; t_p = 30 ns; f = 1 kHz; T_A = 25 °C P_{opt}	Ordering Code
SPLPL90AT03	75 W	Q65113A5477

Maximum Ratings

T_A = 25 °C

Parameter	Symbol		Values
Operating temperature	T_{op}	min. max.	-40 °C 85 °C
Storage temperature	T_{stg}	min. max.	-40 °C 100 °C
Peak output power	P_{opt}	max.	75 W
Forward current	I_F	max.	25 A
Pulse width (FWHM) (at 8 A, refer permissible pulse handling diagram)	t_P	max.	100 ns
Duty cycle	D	max.	0.1 %
Soldering temperature t_{max} = 10 s	T_S	max.	260 °C

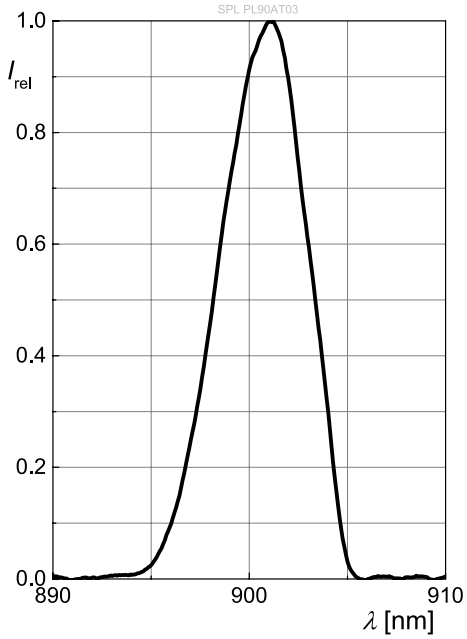
Characteristics

I_F = 8 A; t_p = 100 ns; T_A = 25 °C

Parameter	Symbol		Values
Operating voltage	V_{op}	typ.	6.5 V
Peak wavelength [1]	λ_{peak}	min. typ. max.	898 nm 905 nm 912 nm
Spectral bandwidth (FWHM)	$\Delta\lambda$	typ.	5 nm
Peak output power [2]	P_{opt}	min. typ. max.	20 W 25 W 30 W
Beam divergence (FWHM) parallel to pn-junction	$\Theta_{\parallel}$	typ.	12 °
Beam divergence (FWHM) perpendicular to pn-junction	$\Theta_{\perp}$	typ.	25 °
Threshold current	I_{th}	typ.	0.3 A
Temperature coefficient of wavelength	TC_{λ}	typ.	0.28 nm / K
Temperature coefficient of optical power	TC_P	typ.	-0.4 % / K
Thermal resistance junction ambient real	R_{thJA}	typ.	200 K / W

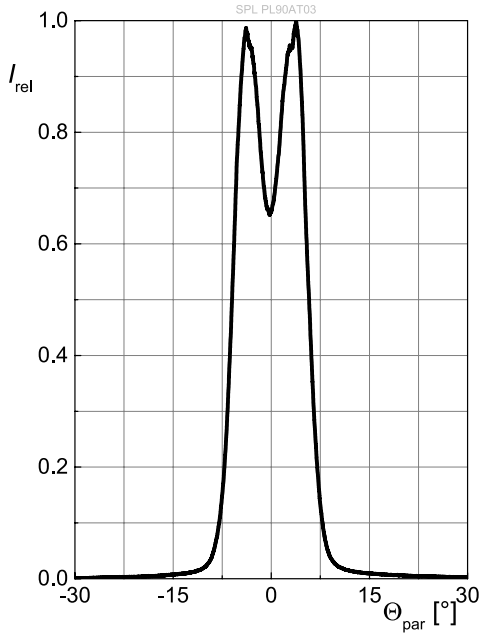
Relative Spectral Emission [3], [4]

$I_{e,rel} = f(\lambda)$; I_F = 25 A; P_{opt} = 75 W; t_p = 30 ns



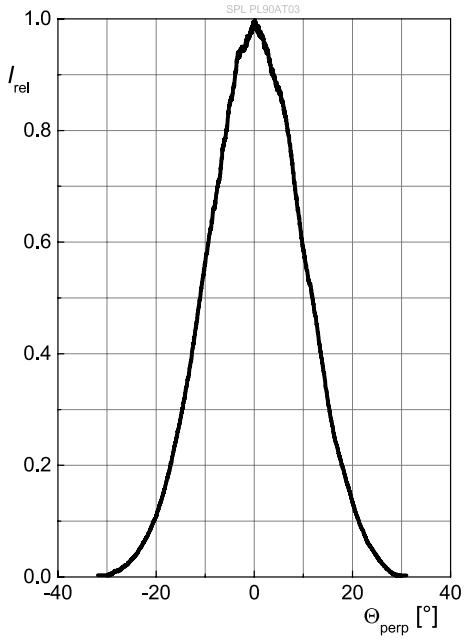
Far-Field Distribution Parallel to pn-Junction [3], [4]

$I_{rel} = f(\Theta_{II})$; P_{opt} = 75 W; t_p = 30 ns; f = 1 kHz



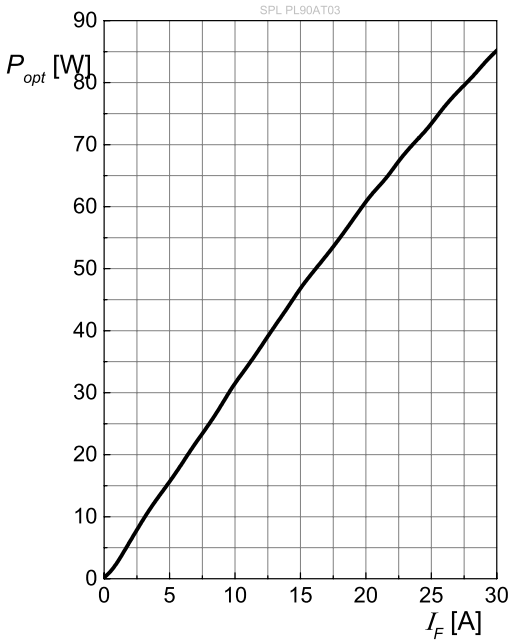
Far-Field Distribution Perpendicular to pn-Junction 3), 4)

$I_{rel} = f(\Theta_{\perp})$; P_{opt} = 75 W; t_p = 30 ns; f = 1 kHz



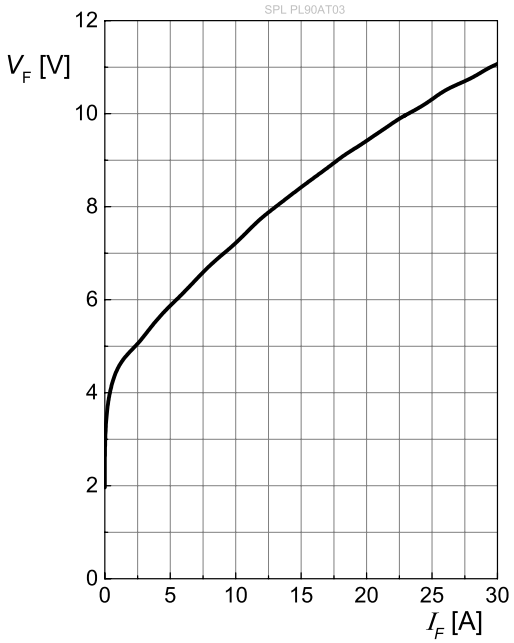
Optical Output Power 3), 4)

$P_{opt} = f(I_F)$; t_p = 30 ns; f = 1 kHz



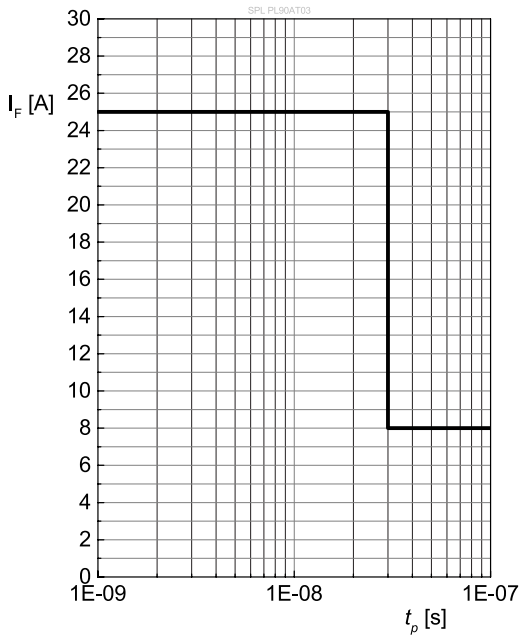
Forward Voltage 3), 4)

$V_F = f(I_F)$; t_p = 30 ns; f = 1 kHz

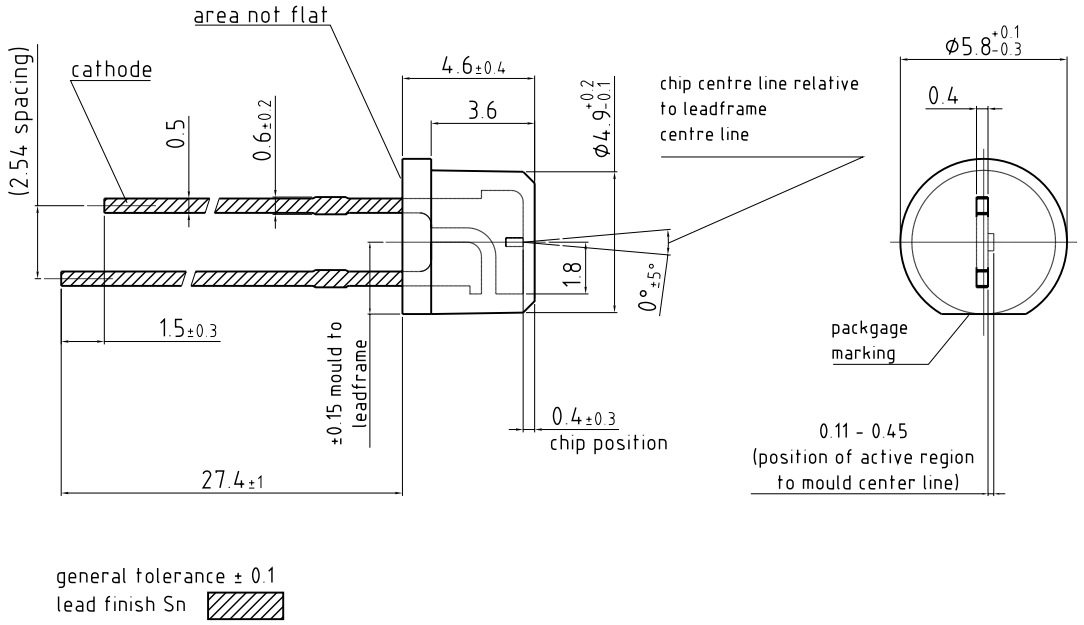


Permissible Pulse Handling Capability

$I_F = f(t_p)$



Dimensional Drawing [5)]



C67062-A0447-A1-01

Further Information:

Approximate Weight: 241.0 mg

Package marking: Anode

Notes

Depending on the mode of operation, these devices emit highly concentrated visible and non visible light which can be hazardous to the human eye. Products which incorporate these devices have to follow the safety precautions given in IEC 60825-1.

Subcomponents of this device contain, in addition to other substances, metal filled materials including silver. Metal filled materials can be affected by environments that contain traces of aggressive substances. Therefore, we recommend that customers minimize device exposure to aggressive substances during storage, production, and use. Devices that showed visible discoloration when tested using the described tests above did show no performance deviations within failure limits during the stated test duration. Respective failure limits are described in the IEC60810.

For further application related information please visit https://ams-osram.com/support/application-notes

Disclaimer

Attention please!

The information describes the type of component and shall not be considered as assured characteristics.
Terms of delivery and rights to change design reserved. Due to technical requirements components may contain dangerous substances.
For information on the types in question please contact our Sales Organization.
If printed or downloaded, please find the latest version on our website.

Packing

Please use the recycling operators known to you. We can also help you – get in touch with your nearest sales office. By agreement we will take packing material back, if it is sorted. You must bear the costs of transport. For packing material that is returned to us unsorted or which we are not obliged to accept, we shall have to invoice you for any costs incurred.

Product and functional safety devices/applications or medical devices/applications

Our components are not developed, constructed or tested for the application as safety relevant component or for the application in medical devices.
Our products are not qualified at module and system level for such application.

In case buyer – or customer supplied by buyer – considers using our components in product safety devices/ applications or medical devices/applications, buyer and/or customer has to inform our local sales partner immediately and we and buyer and /or customer will analyze and coordinate the customer-specific request between us and buyer and/or customer.

Glossary

1) **Wavelength:** The wavelengths are measured with a tolerance of ±1 nm.

2) **Brightness:** The brightness values are measured with a tolerance of ±11%.

3) **Typical Values:** Due to the special conditions of the manufacturing processes of semiconductor devices, the typical data or calculated correlations of technical parameters can only reflect statistical figures. These do not necessarily correspond to the actual parameters of each single product, which could differ from the typical data and calculated correlations or the typical characteristic line. If requested, e.g. because of technical improvements, these typ. data will be changed without any further notice.

4) **Testing temperature:** TA = 25°C (unless otherwise specified)

5) **Tolerance of Measure:** Unless otherwise noted in drawing, tolerances are specified with ±0.1 and dimensions are specified in mm.

Revision History

Version	Date	Change
1.0	2023-04-12	Initial Version
1.1	2024-10-14	Features Characteristics

EU RoHS and China RoHS compliant product
此产品符合欧盟 RoHS 指令的要求；
按照中国的相关法规和标准，
不含有毒有害物质或元素。

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