

# Impuls-Laserdiode im Plastikgehäuse 4 W Spitzenleistung Pulsed Laser Diode in Plastic Package 4 W Peak Power

**Lead (Pb) Free Product - RoHS Compliant**

**SPL PL90\_0**



## Besondere Merkmale

- Kostengünstiges Plastikgehäuse
- Zuverlässiges InGaAs/GaAs kompressiv verspanntes Halbleiter-Material
- Hochleistungslaser mit „Large-Optical-Cavity“ (LOC) Struktur für ein schmales Fernfeld
- Laterale Austrittsöffnung 60 µm

## Anwendungen

- Entfernungsmessung
- Sicherheit, Überwachung
- Beleuchtung, Zündung
- Test- und Messsysteme

## Sicherheitshinweise

Je nach Betriebsart emittieren diese Bauteile hochkonzentrierte, nicht sichtbare Infrarot-Strahlung, die gefährlich für das menschliche Auge sein kann. Produkte, die diese Bauteile enthalten, müssen gemäß den Sicherheitsrichtlinien der IEC-Norm 60825-1 behandelt werden.

## Features

- Low cost plastic package
- Reliable strained InGaAs/GaAs material
- High power large-optical-cavity (LOC) structure for a narrow far-field
- Lateral laser aperture 60 µm

## Applications

- Range finding
- Security, surveillance
- Illumination, ignition
- Test and measurement systems

## Safety Advices

Depending on the mode of operation, these devices emit highly concentrated non visible infrared 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 “Safety of laser products”.

Typ Type	Opt. Spitzenausgangsleistung Opt. Peak Power	Wellenlänge Wavelength	Bestellnummer Ordering Code
SPL PL90_0	4 W	905 nm	Q62702OP5270

Grenzwerte ( $T_A = 25\text{ °C}$ )

## Maximum Ratings

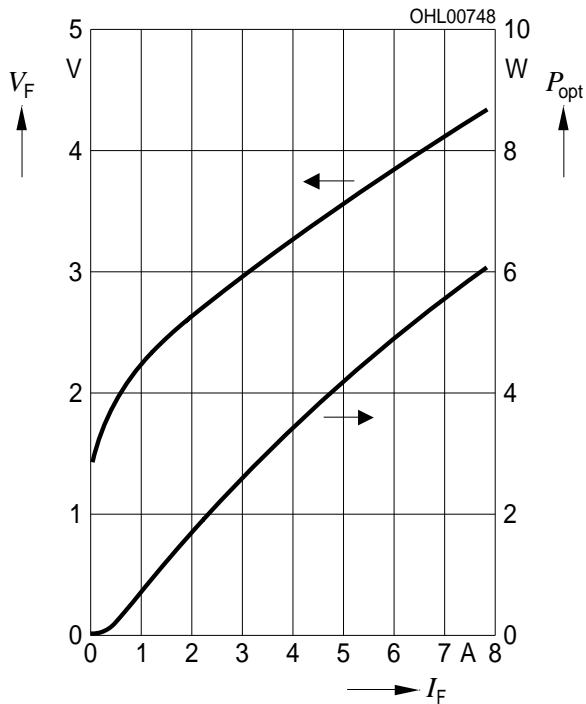
Parameter Parameter	Symbol Symbol	Werte Values		Einheit Unit
		min.	max.	
Spitzenausgangsleistung Peak output power	$P_{\text{peak}}$	–	5	W
Durchlaßstrom Forward current	$I_F$	–	6	A
Pulsbreite (Halbwertsbreite) Pulse width (FWHM)	$t_p$	–	100	ns
Tastverhältnis Duty cycle	<i>d.c.</i>	–	0.1	%
Sperrspannung Reverse voltage	$V_R$	–	3	V
Betriebstemperatur Operating temperature	$T_{\text{op}}$	- 40	+ 85	°C
Lagertemperatur Storage temperature	$T_{\text{stg}}$	- 40	+ 100	°C
Löttemperatur ( $t_{\text{max}} = 10\text{ s}$ , 2 mm von Gehäuseunterseite) Soldering temperature ( $t_{\text{max}} = 10\text{ s}$ , 2 mm from bottom edge of case)	$T_s$	–	+ 260	°C

**Optische Kennwerte ( $T_A = 25\text{ °C}$ )**  
**Optical Characteristics**

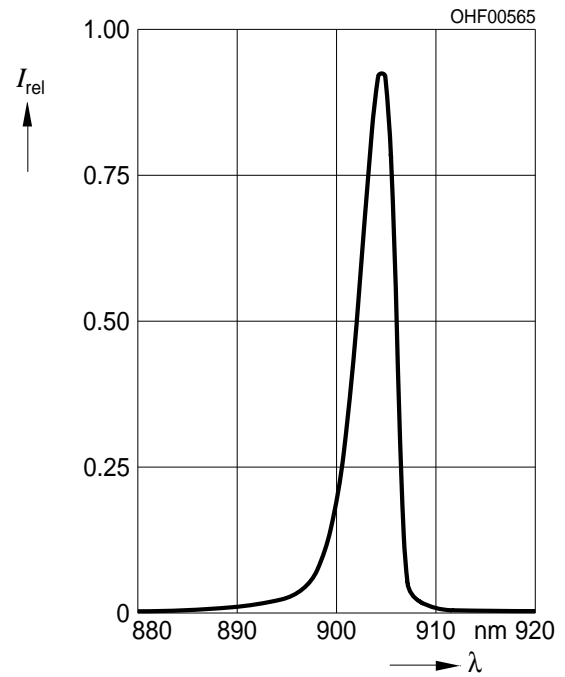
Parameter Parameter	Symbol Symbol	Werte Values			Einheit Unit
		min.	typ.	max.	
Zentrale Emissionswellenlänge <sup>1)</sup> Emission wavelength <sup>1)</sup>	$\lambda_{\text{peak}}$	895	905	915	nm
Spektrale Breite (Halbwertsbreite) <sup>1)</sup> Spectral width (FWHM) <sup>1)</sup>	$\Delta\lambda$	–	3	–	nm
Spitzenausgangsleistung <sup>1)</sup> Peak output power <sup>1)</sup>	$P_{\text{op}}$	3	4	5	W
Schwellstrom Threshold current	$I_{\text{th}}$	0.15	0.3	0.5	A
Betriebsspannung <sup>1)</sup> Operating voltage <sup>1)</sup>	$V_{\text{op}}$	2.7	3.4	4	V
Minimale Anstiegs- und Abfallzeit (10% ... 90%) Minimum rise and fall time (10% ... 90%)	$t_r, t_f$	-	1	-	ns
Austrittsöffnung Aperture size	$w \times h$		$60 \times 2$		$\mu\text{m}^2$
Strahldivergenz (Halbwertsbreite) Beam divergence (FWHM)	$\theta_{\parallel} \times \theta_{\perp}$	–	$11^\circ \times 25^\circ$	–	Grad deg.
Temperaturkoeffizient der Wellenlänge <sup>2)</sup> Temperature coefficient of wavelength <sup>2)</sup>	$\partial\lambda / \partial T$	–	0.28	–	nm/K
Temperaturkoeffizient der opt. Ausgangsleistung Temperature coefficient of optical power	$\partial P_{\text{op}} / P_{\text{op}} \partial T$	–	-0.4	–	%/K
Thermischer Widerstand Thermal resistance	$R_{\text{th JA}}$	–	160	–	K/W

- <sup>1)</sup> Standardbetriebsbedingungen beziehen sich auf eine Pulsbreite von 100 ns bei einer Puls wiederholrate von 1 kHz und einem Betriebsstrom von 5 A bei  $T_A = 25\text{ °C}$ .  
Standard operating conditions refer to pulses of 100 ns width at 1 kHz repetition rate with 5 A operating current at  $T_A = 25\text{ °C}$ .

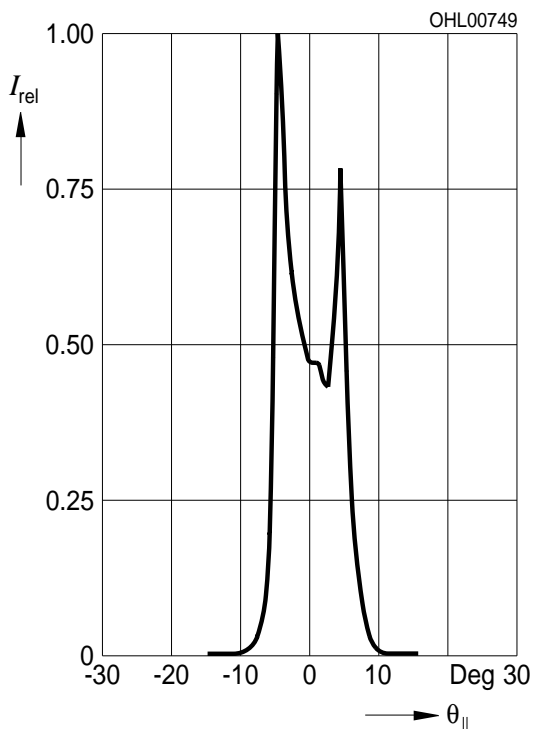
Optical output power  $P_{opt}$  and forward voltage  $V_F$  vs. forward current  $I_F$  ( $T_A = 25\text{ }^\circ\text{C}$ )



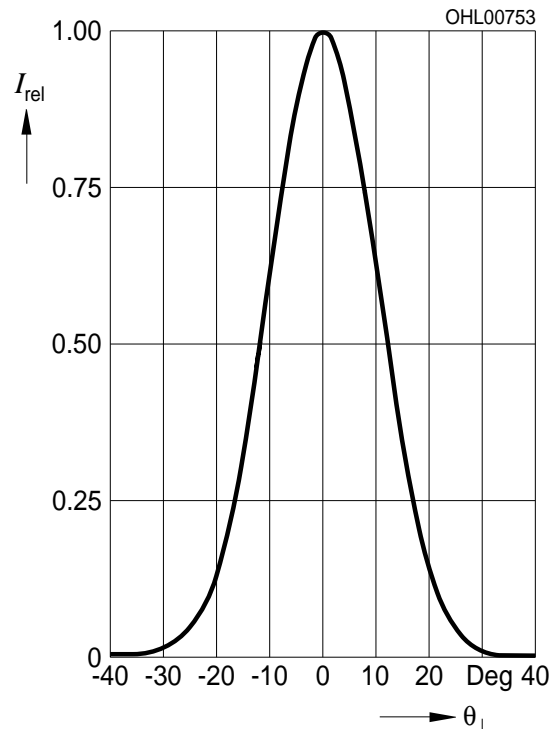
Optical spectrum, relative intensity  $I_{rel}$  vs. Wavelength  $\lambda$  ( $T_A = 25\text{ }^\circ\text{C}$ ,  $P_{opt} = 0.3\text{ W}$ )



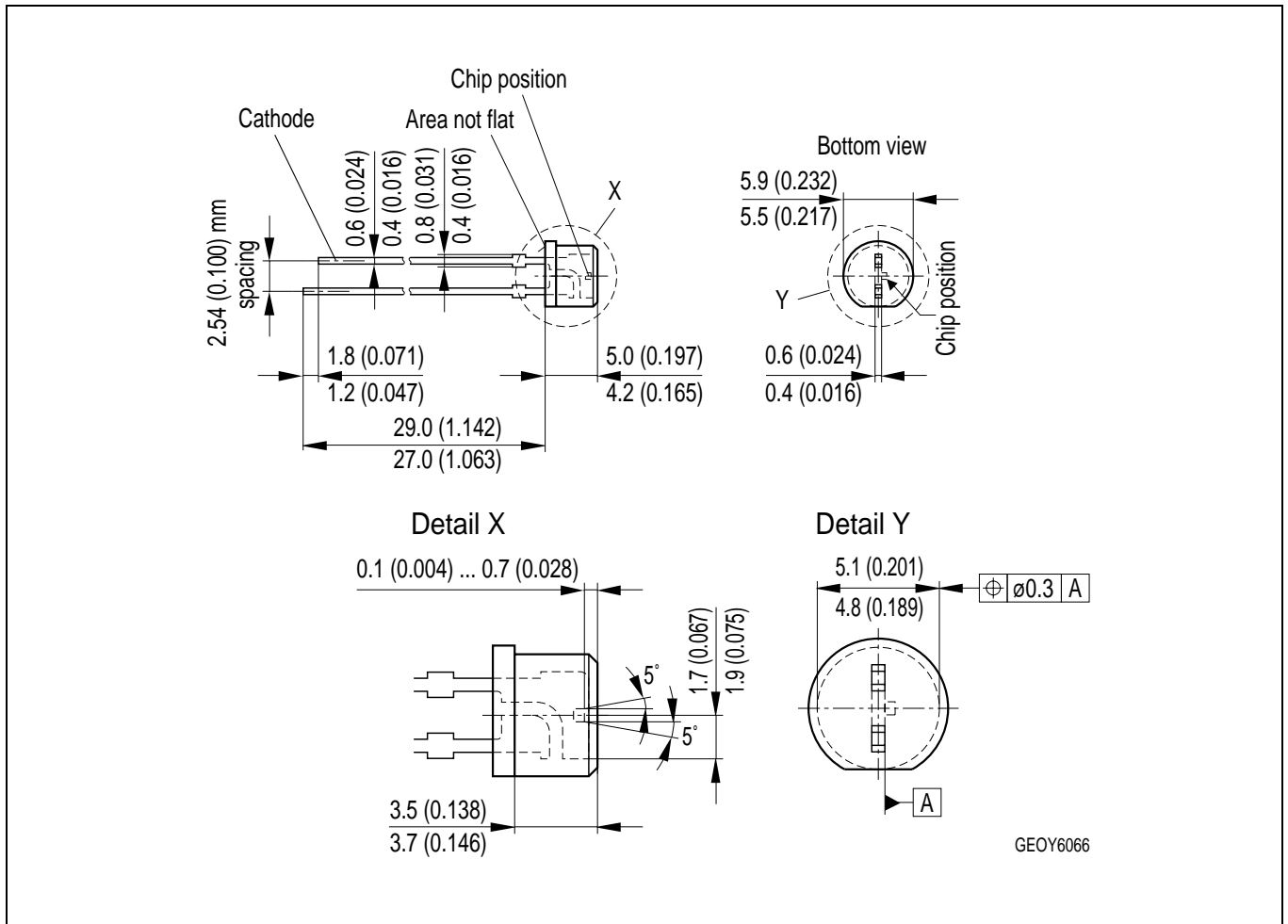
Far-field distribution parallel to junction  $I_{rel}$  vs.  $\theta_{\parallel}$  ( $T_A = 25\text{ }^\circ\text{C}$ ,  $P_{opt} = 0.3\text{ W}$ )



Far-field distribution perpendicular to junction  $I_{rel}$  vs.  $\theta_{\perp}$  ( $T_A = 25\text{ }^\circ\text{C}$ ,  $P_{opt} = 0.3\text{ W}$ )



Maßzeichnung  
Package Outlines



Maße in mm (inch) / Dimensions in mm (inch).

Published by  
**OSRAM Opto Semiconductors GmbH**  
Wernerwerkstrasse 2, D-93049 Regensburg  
[www.osram-os.com](http://www.osram-os.com)

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<sup>2</sup> Life support devices or systems are intended (a) to be implanted in the human body, or (b) to support and/or maintain and sustain human life. If they fail, it is reasonable to assume that the health of the user may be endangered.

EU RoHS and China RoHS compliant product



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