

Impuls-Laserdiode im Plastikgehäuse 10 W Spitzenleistung Pulsed Laser Diode in Plastic Package 10 W Peak Power

Lead (Pb) Free Product - RoHS Compliant

SPL PL85



Besondere Merkmale

- Kostengünstiges Plastikgehäuse
- Zuverlässiges InGaAs/GaAs kompressiv verspanntes Halbleiter-Material
- Hochleistungslaser mit „Large-Optical-Cavity“ (LOC) Struktur für ein schmales Fernfeld
- Laterale Austrittsöffnung 200 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 200 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 PL85 | 10 W | 850 nm | Q62702P1759 |

Grenzwerte ($T_A = 25\text{ °C}$)

Maximum Ratings

| Parameter Parameter | Symbol Symbol | Werte Values | | Einheit Unit |
|---|-------------------|-----------------|-------|-----------------|
| | | min. | max. | |
| Spitzenausgangsleistung Peak output power | P_{peak} | – | 13 | W |
| Durchlaßstrom Forward current | I_F | – | 12 | A |
| Pulsbreite (Halbwertsbreite) Pulse width (FWHM) | t_p | – | 100 | ns |
| Tastverhältnis Duty cycle | $d.c.$ | – | 0.1 | % |
| Sperrspannung Reverse voltage | V_R | – | 3 | V |
| Betriebstemperatur Operating temperature | T_{op} | - 40 | + 85 | °C |
| Lagertemperatur Storage temperature | T_{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 ($T_A = 25\text{ °C}$)

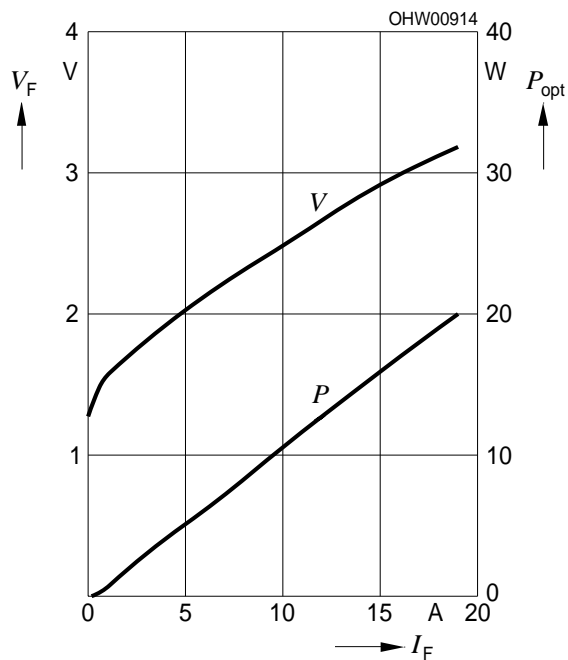
Optical Characteristics

| Parameter Parameter | Symbol Symbol | Werte Values | | | Einheit Unit |
|--|---|-----------------|-----------|------|-----------------|
| | | min. | typ. | max. | |
| Zentrale Emissionswellenlänge ¹⁾ Emission wavelength ¹⁾ | λ_{peak} | 840 | 850 | 860 | nm |
| Spektrale Breite (Halbwertsbreite) ¹⁾ Spectral width (FWHM) ¹⁾ | $\Delta\lambda$ | – | 4 | – | nm |
| Spitzenausgangsleistung ¹⁾ Peak output power ¹⁾ | P_{op} | 7 | 10 | 13 | W |
| Schwellstrom Threshold current | I_{th} | 0.5 | 0.75 | 1 | A |
| Betriebsspannung ¹⁾ Operating voltage ¹⁾ | V_{op} | 2.0 | 2.5 | 3.0 | V |
| Minimale Anstiegs- und Abfallzeit (10% ... 90%) Minimum rise and fall time (10% ... 90%) | t_r, t_f | - | 1 | - | ns |
| Austrittsöffnung Aperture size | $w \times h$ | | 200 × 2 | | μm^2 |
| Strahldivergenz (Halbwertsbreite) Beam divergence (FWHM) | $\theta_{\parallel} \times \theta_{\perp}$ | – | 11° × 25° | – | Grad deg. |
| Temperaturkoeffizient der Wellenlänge ²⁾ Temperature coefficient of wavelength ²⁾ | $\partial\lambda / \partial T$ | – | 0.25 | – | 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 |

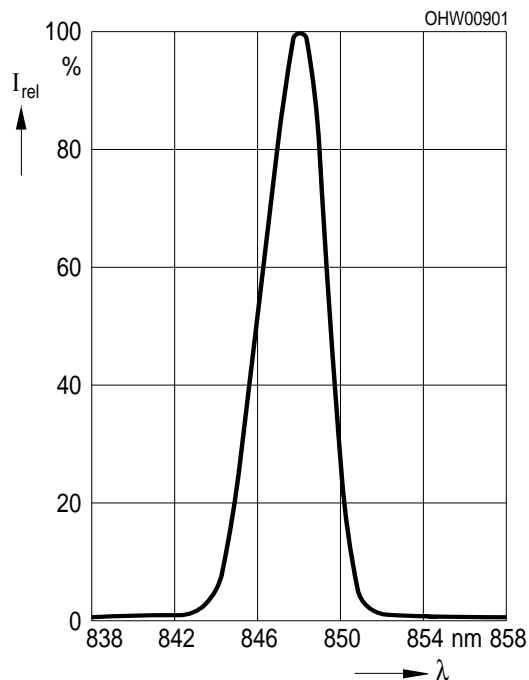
¹⁾ Standardbetriebsbedingungen beziehen sich auf eine Pulsbreite von 100 ns bei einer Frequenz von 1 kHz und einem Betriebsstrom von 10 A bei $T_A = 25\text{ °C}$.

Standard operating conditions refer to pulses of 100 ns width at 1 kHz rate with 10 A operating current at $T_A = 25\text{ °C}$.

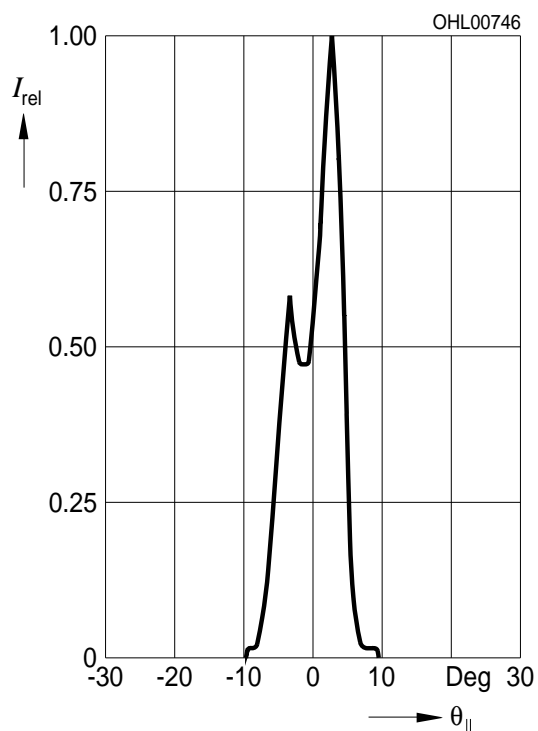
Optical output power P_{opt} and forward voltage V_F vs. forward current I_F ($T_A = 25\text{ °C}$)



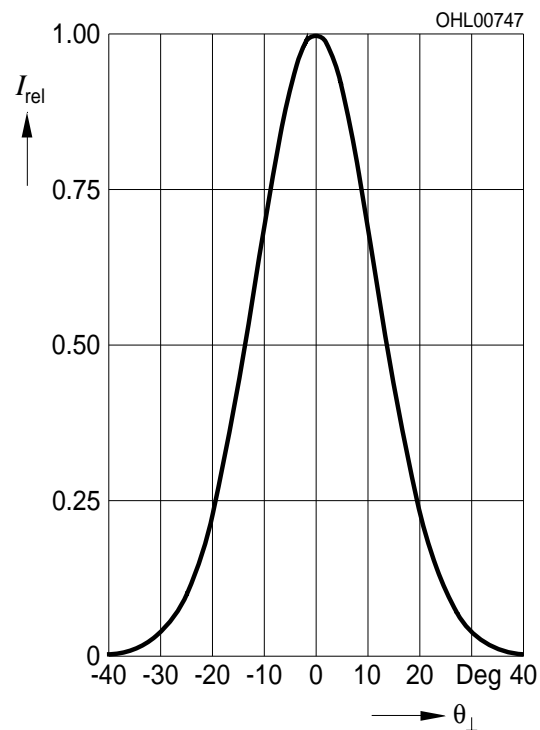
Optical spectrum, relative intensity I_{rel} vs. Wavelength λ ($T_A = 25\text{ °C}$, $P_{opt} = 10\text{ W}$)



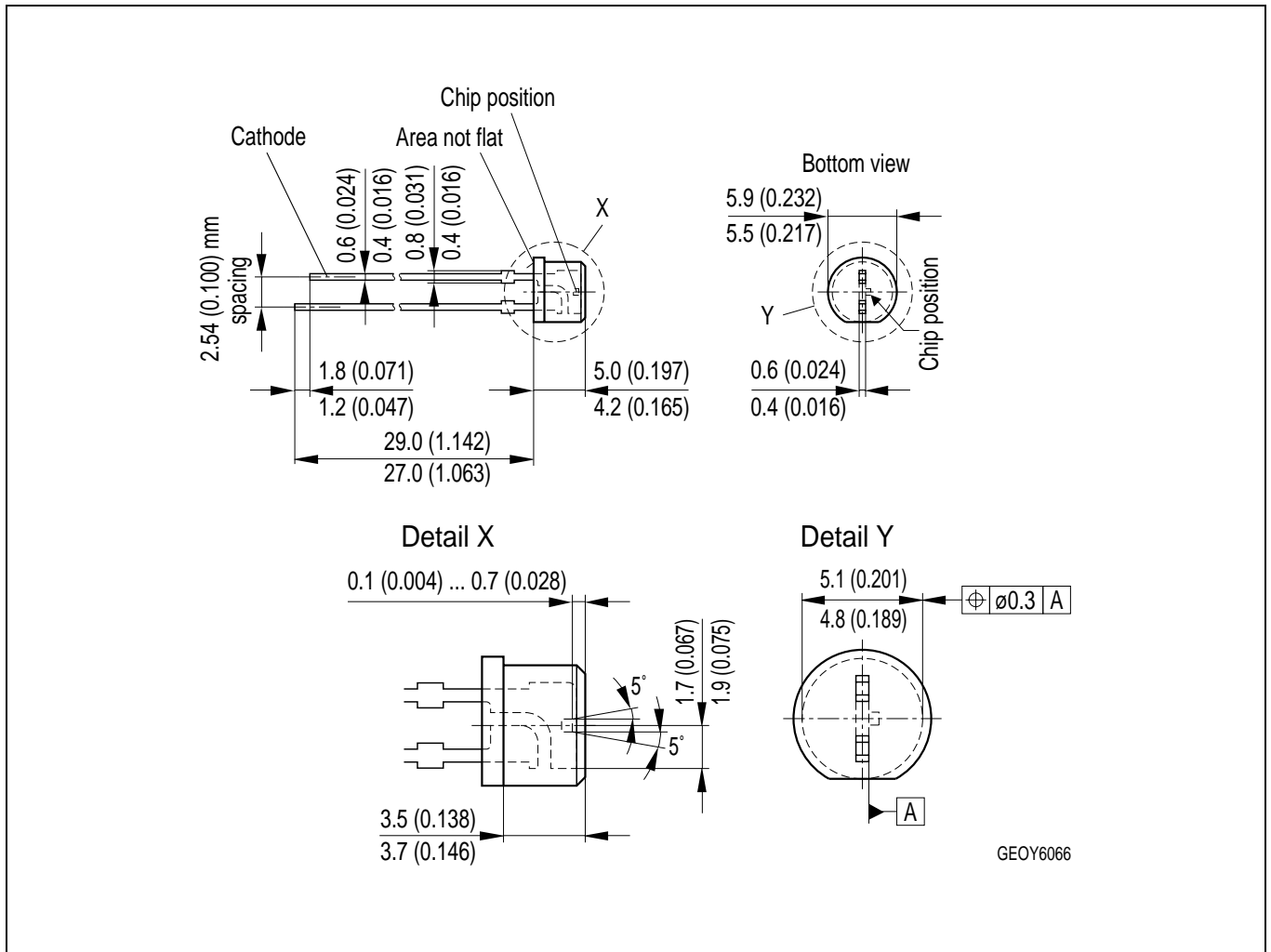
Far-field distribution parallel to junction I_{rel} vs. $\theta_{||}$ ($T_A = 25\text{ °C}$, $P_{opt} = 10\text{ W}$)



Far-field distribution perpendicular to junction I_{rel} vs. θ_{\perp} ($T_A = 25\text{ °C}$, $P_{opt} = 10\text{ W}$)



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

© All Rights Reserved.

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.

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.

Components used in life-support devices or systems must be expressly authorized for such purpose! Critical components¹, may only be used in life-support devices or systems² with the express written approval of OSRAM OS.

¹ A critical component is a component used in a life-support device or system whose failure can reasonably be expected to cause the failure of that life-support device or system, or to affect its safety or effectiveness of that device or system.

² 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



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。