



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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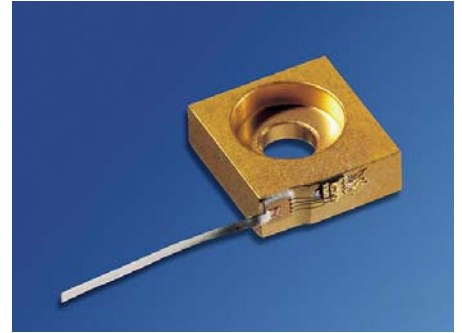
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Red Laser Diode on Submount 0.5 W cw Rote Laser Diode in offener Bauform 0.5 W cw

SPL CG65



Besondere Merkmale

- Effiziente Strahlungsquelle für Dauerstrichbetrieb
- Zuverlässige kompressiv verspannte InGaP Quantenfilm-Struktur
- Laterale Austrittsöffnung 100 μm
- Kleiner Kupfer-Kühlkörper (C-Typ) für OEM Design

Anwendungen

- Medizinische Anwendungen (Krebsbehandlung, Augenheilkunde, Hautbehandlung)
- Pumpen von Festkörperlasern (LiSAF, LiCAF)
- Messtechnik
- Laser show, Unterhaltung

Sicherheitshinweise

Je nach Betriebsart emittieren diese Bauteile hochkonzentrierte, sichtbare 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

- Efficient radiation source for cw operation
- Reliable strained InGaP quantum-well structure
- Lateral laser aperture 100 μm
- Small C-type copper submount for OEM designs

Applications

- Medical applications (cancer treatment, ophthalmology, dermatology)
- Pumping of solid state lasers (LiSAF, LiCAF)
- Alignment
- Laser show, entertainment

Safety Advices

Depending on the mode of operation, these devices emit highly concentrated 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 "Safety of laser products".

Typ Type	Wellenlänge Wavelength	Bestellnummer Ordering Code
SPL CG65	650 nm	Q65110A1718

Grenzwerte (kurzzeitiger Betrieb) (Umgebungstemperatur $T_A = 20\text{ °C}$)

Maximum Ratings (short time operation) (Ambient temperature $T_A = 20\text{ °C}$)

Parameter Parameter	Symbol Symbol	Werte Values		Einheit Unit
		min.	max.	
Ausgangsleistung (Dauerstrichbetrieb) ¹⁾ Output power (continuous wave) ¹⁾	P_{cw}	–	0.5	W
Sperrspannung Reverse voltage	V_R	–	3	V
Betriebstemperatur ²⁾ Operating temperature ²⁾	T_{op}	– 10	+ 40	°C
Lagertemperatur ²⁾ Storage temperature ²⁾	T_{stg}	– 40	+ 85	°C
Löttemperatur an der Lötflanke, max. 5 s Soldering temp. at solder flag, max. 5 s	T_{s1}	–	250	°C
Löttemperatur am Kupferträger, max. 10 s Soldering temp. at submount, max. 10 s	T_{s2}	–	140	°C

¹⁾ Zur Leistungsmessung wird die gesamte Lichtleistung in eine Ulbrichtkugel eingekoppelt. Der spezifizierte maximale Wert der Ausgangleistung darf bei keiner Temperatur inklusive Temperaturen unterhalb der Raumtemperatur überschritten werden.

Optical power is measured by coupling into an integrating sphere. The specified maximum value of output power shall not be exceeded at any temperature including temperatures below room temperature.

²⁾ Die Entstehung von Kondensflüssigkeiten auf dem Bauelement muß ausgeschlossen werden. Das Bauelement muß vor Feuchtigkeit geschützt werden.

Bedewing on the device has to be excluded. Protection of the device against humidity must be assured.

Dioden Kennwerte (Umgebungstemperatur $T_A = 20\text{ °C}$)

Diode Characteristics (Ambient temperature $T_A = 20\text{ °C}$)

Parameter Parameter	Symbol Symbol	Werte Values			Einheit Unit
		min.	typ.	max.	
Zentrale Emissionswellenlänge ¹⁾ Emission wavelength ¹⁾	λ_{peak}	640	650	660	nm
Spektrale Breite (Halbwertsbreite) ¹⁾ Spectral width (FWHM) ¹⁾	$\Delta\lambda$	–	2.00	–	nm
Opt. Ausgangsleistung im Betriebspunkt ²⁾ Output power ²⁾	P_{op}	–	–	0.50	W
Differentielle Effizienz ¹⁾²⁾ Differential efficiency ¹⁾²⁾	η	0.70	0.80	–	W/A
Schwellstrom Threshold current	I_{th}	0.30	0.45	0.60	A
Betriebsstrom ¹⁾ Operating current ¹⁾	I_{op}	–	1.10	1.30	A
Betriebsspannung ¹⁾ Operating voltage ¹⁾	V_{op}	2.00	2.20	2.40	V
Differentieller Serienwiderstand Differential series resistance	R_s	–	0.20	0.40	Ω
Austrittsöffnung Aperture size	$w \times h$	–	100×1	–	μm^2
Strahldivergenz (Halbwertsbreite) ¹⁾ Beam divergence (FWHM) ¹⁾	$\theta_{\parallel} \times \theta_{\perp}$	–	8°×40°	–	Grad deg.
Charakteristische Temperatur (Schwelle) ³⁾ Characteristic temperature (threshold) ³⁾	T_0	–	55	–	K
Temperaturkoeffizient des Betriebsstroms Temperature coefficient of operating current	$\partial I_{\text{op}} / I_{\text{op}} \partial T$	–	1.50	–	%/K
Temperaturkoeffizient der Wellenlänge Temperature coefficient of wavelength	$\partial \lambda / \partial T$	–	0.14	–	nm/K

Dioden Kennwerte (Umgebungstemperatur $T_A = 20\text{ °C}$)

Diode Characteristics (Ambient temperature $T_A = 20\text{ °C}$) (cont'd)

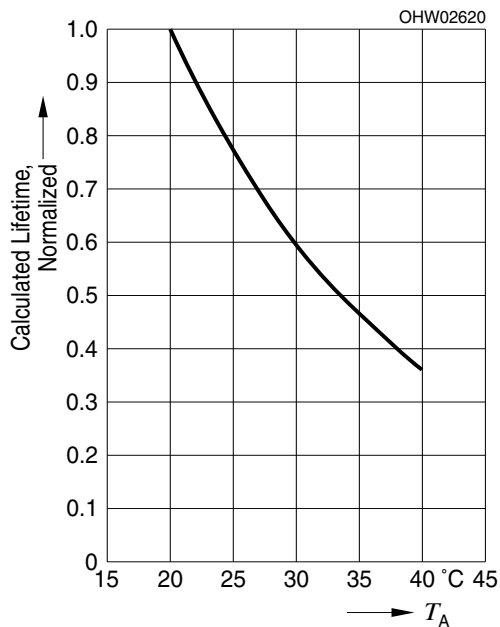
Parameter Parameter	Symbol Symbol	Werte Values			Einheit Unit
		min.	typ.	max.	
Thermischer Widerstand (pn-Übergang → Wärmesenke) Thermal resistance (junction → heat sink)	R_{th}	–	12	–	K/W

- 1) Standardbetriebsbedingungen beziehen sich auf 0.5W cw optische Ausgangsleistung und auf 20°C Umgebungstemperatur.
Standard operating conditions refer to 0.5W cw optical output power and 20°C ambient temperature.
- 2) Optische Leistungen werden mit einer Ulbrichtkugel gemessen.
Optical power measurements refer to an integrating sphere.
- 3) Modelle zur Bestimmung des thermischen Verhaltens bzgl. des Schwellstroms (Die charakteristische Temperatur gilt für einen Temperaturbereich von 10°C bis 30°C):
Model for the thermal behavior of threshold current (The characteristic temperature is valid in the temperature range of 10°C to 30°C):

$$I_{th}(T_2) = I_{th}(T_1) \times \exp(T_2 - T_1)/T_0$$

Berechnete normierte Lebensdauer in Abhängigkeit von der Umgebungstemperatur für eine Ausgangsleistung von 500 mW

Calculated normalized lifetime versus the ambient temperature for an output power of 500 mW



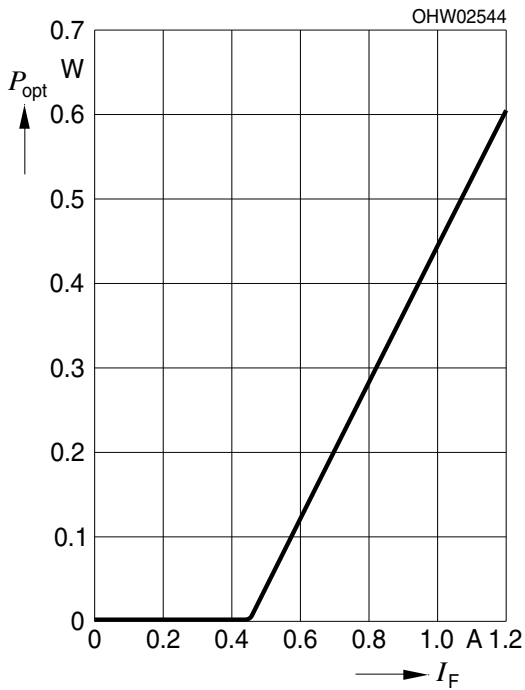
Das Diagramm zeigt die berechnete Lebensdauer in Abhängigkeit von Umgebungstemperatur, wobei ein abgeschätzter Wert für die Aktivierungsenergie angenommen wird. Das Diagramm stellt eine Abschätzung für die Lebensdauer dar und darf nicht als zugesicherte Eigenschaft verstanden werden.

The graph shows the calculated lifetime versus the ambient temperature based on an estimated value for activation energy. The graph describes an estimation for lifetime and cannot be considered as assured characteristics.

Optische Kennwerte SPL CG65

(Parameter werden vorn detaillierter aufgeführt).

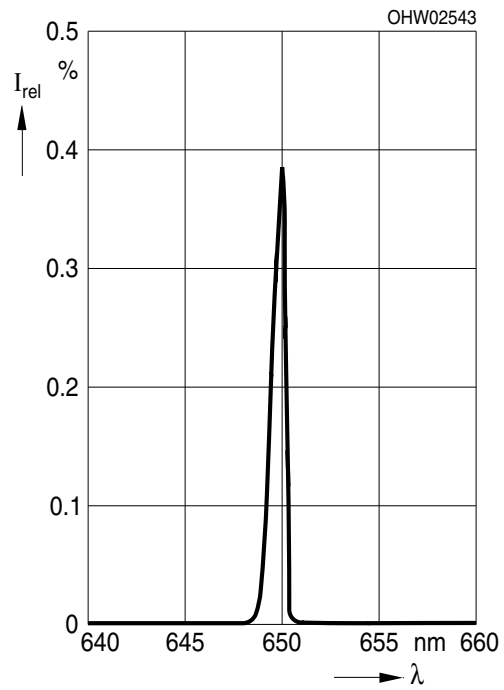
Optical Output Power P_{opt} vs. Forward Current I_F ($T_A = 20\text{ °C}$)



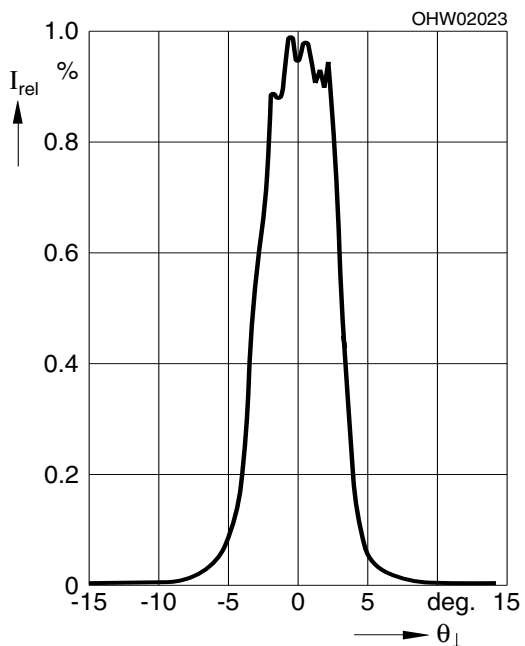
Optical Characteristics SPL CG65

(parameters are listed on previous page in detail).

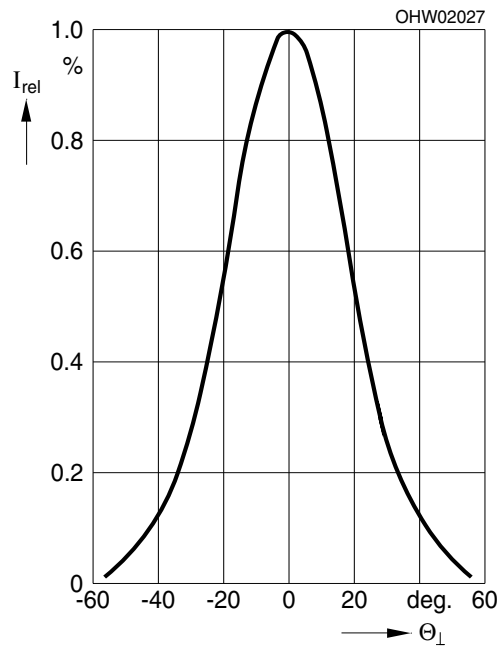
Optical Spectrum, Relative Intensity I_{rel} vs. Wavelength λ ($T_A = 20\text{ °C}$, $P_{opt} = 0.5\text{ W}$)



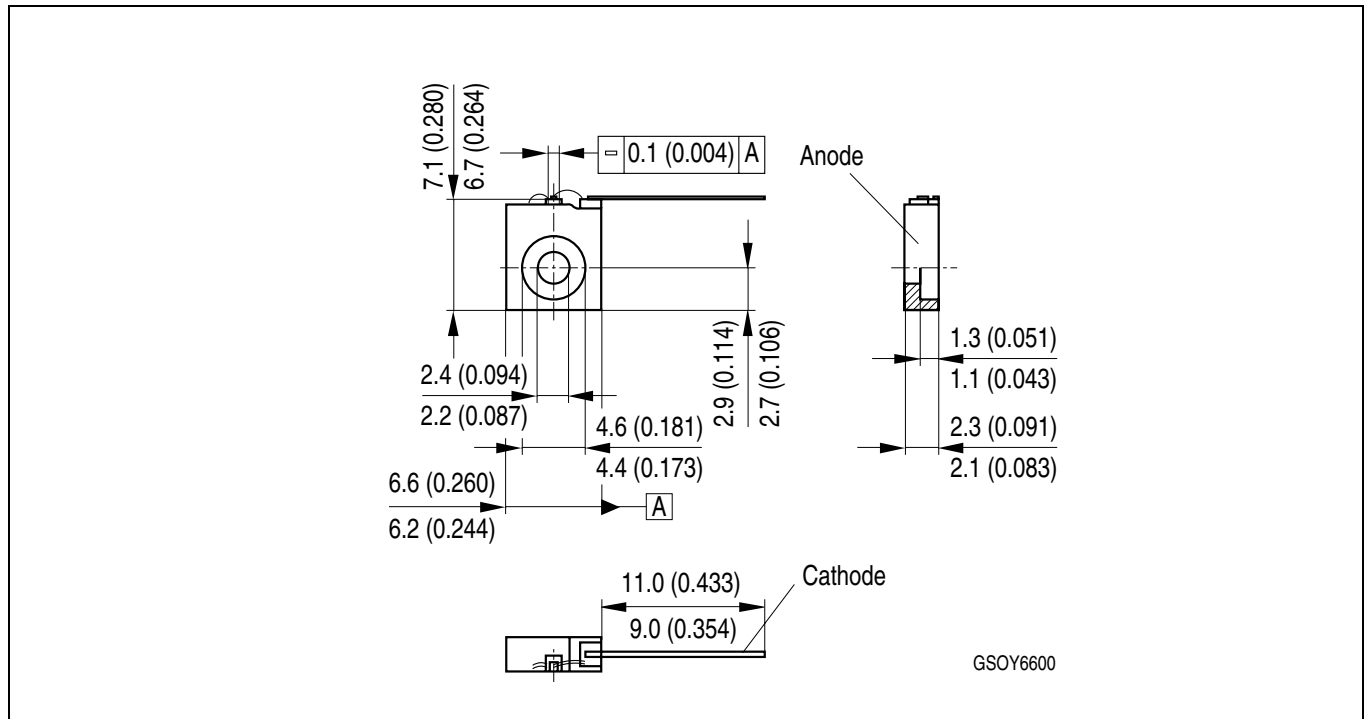
Farfield Distribution Parallel to Junction I_{rel} vs. $\theta_{||}$



Farfield Distribution Perpendicular to Junction I_{rel} vs. θ_{\perp}



Maßzeichnung Package Outlines



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

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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.

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