SIEMENS

Pulsed Laser Diode in Plastic Package
10 W Peak (Class 3 Laser Product)

SPL PLxx
(SFH 4884xx)

Preliminary

Features

- Low cost plastic package
- Reliable strained InGaAs/GaAs material
- High power large-optical-cavity structure
- Single emitting area 200 µm × 2 µm

Applications

- Range finding
- Security, surveillance
- Illumination, ignition
- Testing and measurement

Type	Old Type (as of Oct. 1996)	Wavelength *)	Ordering Code
SPL PL85	SFH 488425	850 nm	Q62702-P1759
SPL PL90	–	904 nm	on request

*) Other wavelengths in the range of 780 nm ... 980 nm are available on request.

Maximum Ratings

(T_A = 25 °C)

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Forward current	I_F	–	–	20	A
Pulse width (FWHM)	t_p	–	–	100	ns
Duty factor	D	–	0.1	–	%
Reverse voltage	V_R	–	–	3	V
Operating temperature	T_{op}	– 20	…	+ 85	°C
Storage temperature	T_{stg}	– 40	…	+ 100	°C
Soldering temperature ($t_{m,ax}$ = 5 s, 2 mm from bottom edge of case)	T_s	–	–	260	°C

Optical Characteristics

(T_A = 25 °C)

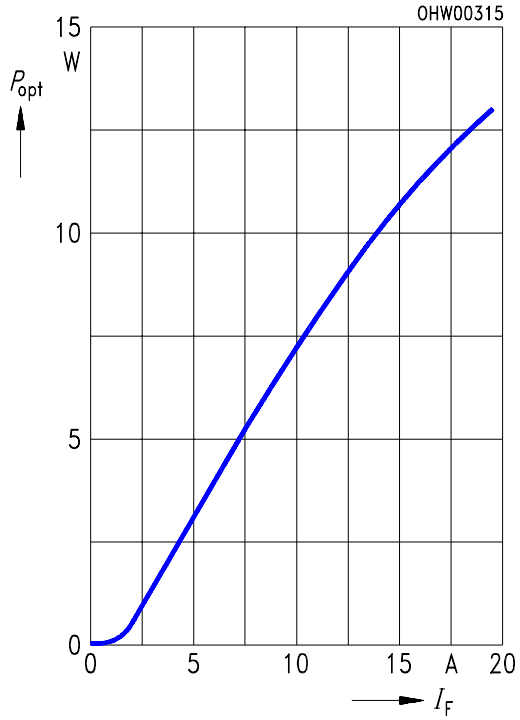
Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Emission wavelength [1]	λ	830	850	870	nm
Spectral width (FWHM) [1]	$\Delta\lambda$		4		nm
Forward current (10 W) [1]	I_f	–	–	14	A
Threshold current	I_{th}	–	1	–	A
Forward voltage (0.1 A)	V_F	–	1.6	–	V
Forward voltage (20 A)	V_F	–	6	10	V
Rise and fall time (10% ... 90%)	t_r, t_r	2	10	–	ns
Beam spread at 20 A (FWHM)	$\theta_{\parallel} \times \theta_{\perp}$	–	10×30	–	°
Temperature coefficient of wavelength [2]	$\partial\lambda / \partial T$	0.25	0.27	0.30	nm/K
Temperature coefficient of optical power	$\partial P / \partial T$	–	– 0.5	–	%/K
Thermal resistance	$R_{th\ JA}$	–	160	–	K/W

1) Standard operating conditions refer to pulses of 50 ns at 10 kHz rate with 10 W peak power into NA = 0.5

2) Depending on emission wavelength.

Optical Characteristics (T_A = 25 °C)

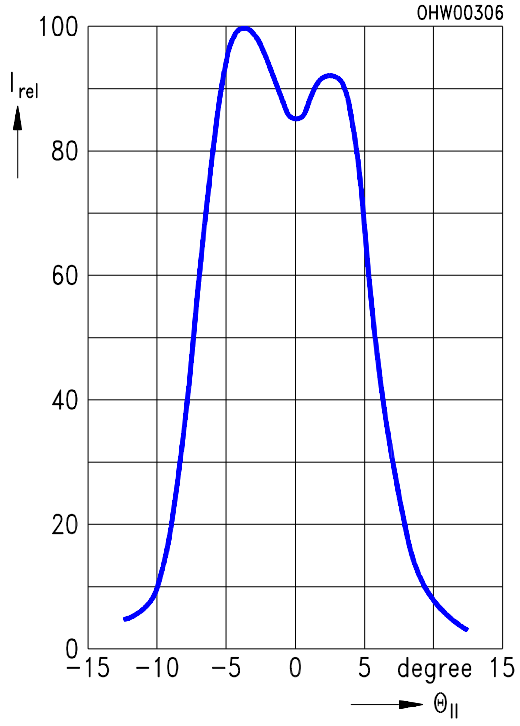
Radiant Power P_{cw} vs. I_F



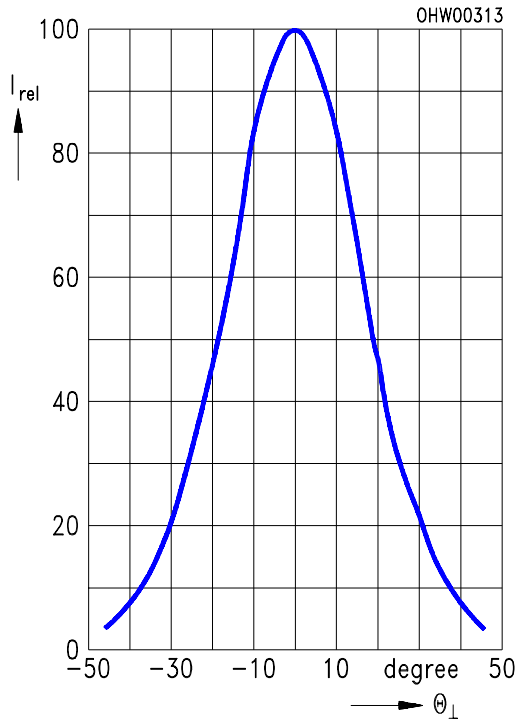
Permissible pulse handling capability; I_F vs. t; Parameter D (duty cycle)

Max. forward current vs pulse length I_F vs. τ; parameter D duty cycle is under evaluation

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



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



Package Outlines
(Dimensions in mm, unless specified)