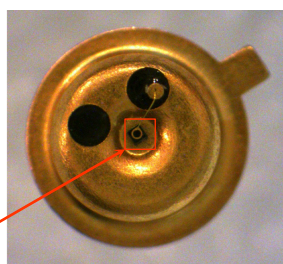
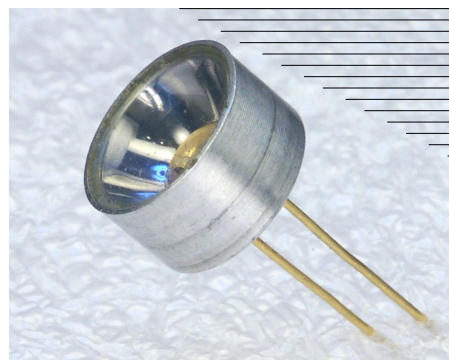


## Features

- High reliability
- Spectral Selectivity
- Easy to use in lock-in circuits
- Parabolic reflector with window



LED chip

## Applications

- Measuring equipment
- Gas analysis ( $\text{H}_2\text{O}$ ,  $\text{H}_2\text{S}$ )
- Analytical spectral devices

## Options

- Power supply: [LED Driver D-31M](#)

## Description

Light emitting diode **LED19-PRW** demonstrates typical maximum of emitting wavelength of  $\lambda_p = 1.95 \mu\text{m}$  ( $I = 150 \text{ mA}$ ,  $f = 0.5 \text{ KHz}$ , duty cycle: 50%).

Light emitting diode **LED19-PRW** is equipped with quartz window. The components is mounted in a standard 5.5 mm TO-18 package with parabolic reflector (PR).

LED heterostructure is grown on GaSb substrate.

Related products: **LED19-PRW** can be used in optical pair with our [PD24](#) photodiodes.

## General characteristics

Package	Parameter	Symbol	Value	Unit
TO-18 with PRW	Maximum operating current	$I^*_{\text{QCW}}$	220	mA
		$I^{**}_{\text{Pulsed}}$	2000	
	Soldering temperature	$T_s$	+ 230	$^{\circ}\text{C}$
	Operating temperature	$T_{\text{opr}}$	- 30...+ 50	$^{\circ}\text{C}$
	Storage temperature	$T_{\text{stg}}$	- 55...+ 60	$^{\circ}\text{C}$
	Weight	m	0.68	g
	Size	D	9.0	mm
H		18.5		

\* Quasi-CW mode: Repetition rate: 0.5 kHz, pulse duration: 1 ms, duty cycle: 50%

\*\* Pulse mode: Repetition rate: 0.5 kHz, pulse duration: 2  $\mu\text{s}$ , duty cycle: 0.1%

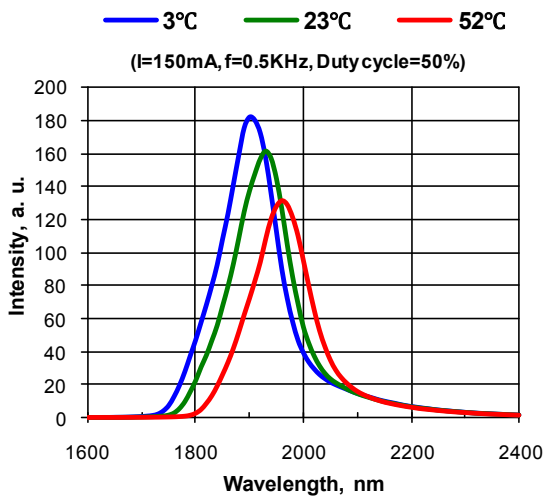
## Electrical and optical characteristics

Parameter	Symbol	Condition	Min	Max	Unit
Peak emission wavelength	$\lambda_p$	$I_F = 150 \text{ mA}$	$\lambda_{typ} = 1.95$		$\mu\text{m}$
			1.92	1.97	
Spectral FWHM	$\Delta\lambda$	$I_F = 150 \text{ mA}$	100	200	nm
Pulse optical power	$P^*_{QCW}$	$I_F = 200 \text{ mA}$	0.8	1.2	mW
	$P^{**}_{Pulsed}$	$I_F = 1000 \text{ mA}$	4.4	6.6	
Forward voltage	$V_F$	(*)	0.5	1.5	V
Switching time	$\tau$		10	30	ns

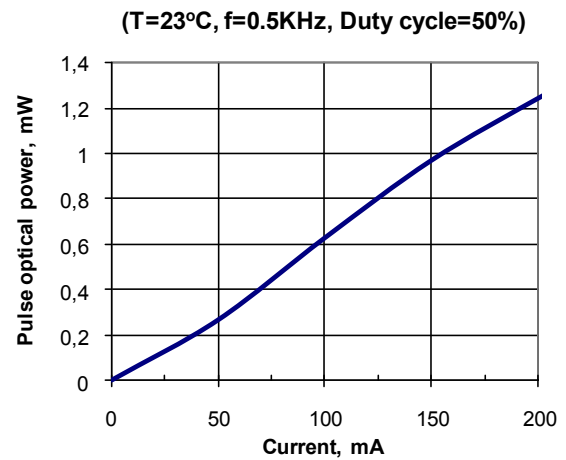
\* Quasi-CW mode: repetition rate: 0.5 kHz, pulse duration: 1 ms, duty cycle: 50%, current: 200 mA

\*\* Pulse mode: repetition rate: 0.5 kHz, pulse duration: 2  $\mu\text{s}$ , duty cycle: 0.1%, current: 1 A

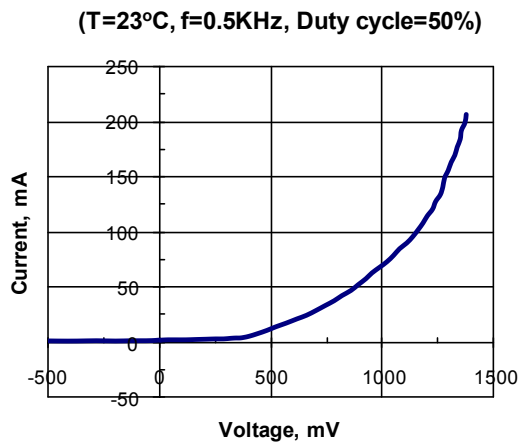
Electroluminescence spectra



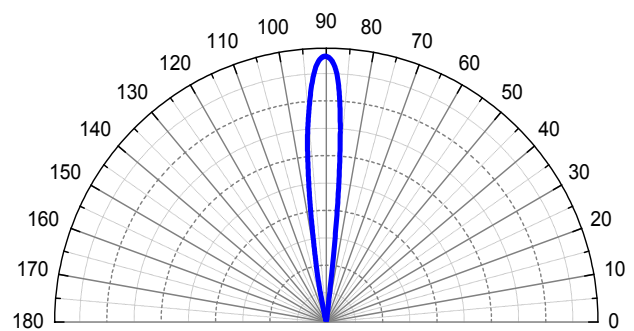
Pulse optical power vs. current



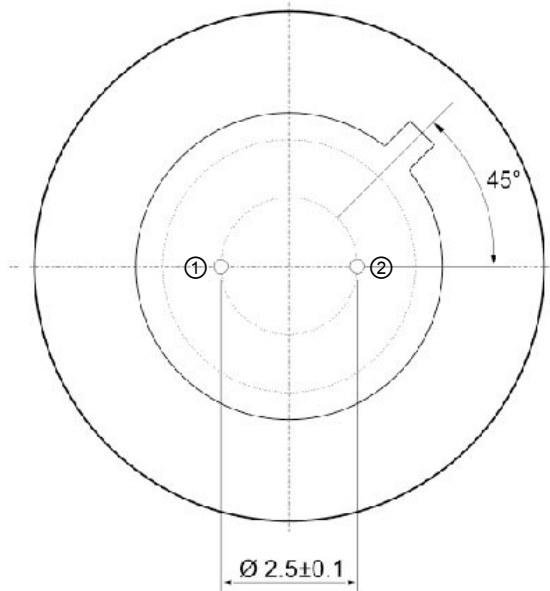
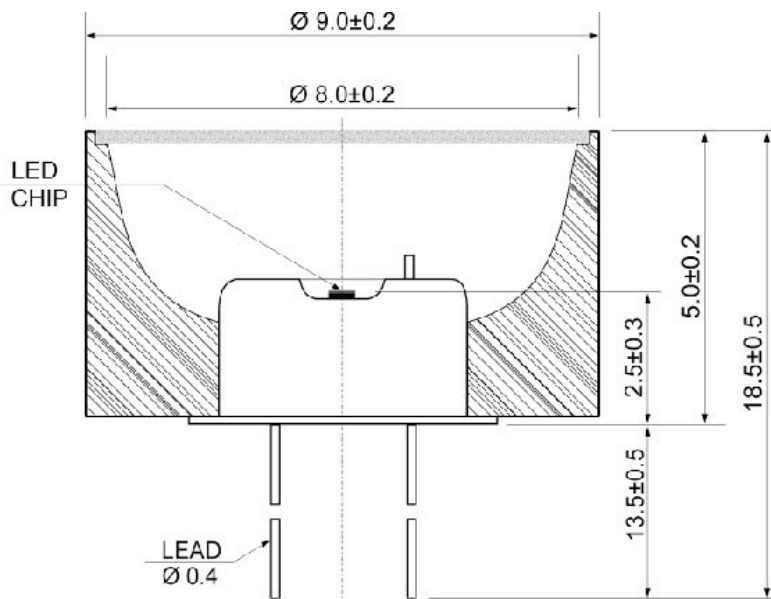
Current vs. voltage



Field pattern



▼ TO-18 package with PR - dimensions (mm)



Pin	Description
① Common to case	Diode (cathode)*
②	Diode (anode)*

\* Attention: Pin polarity can be changed.