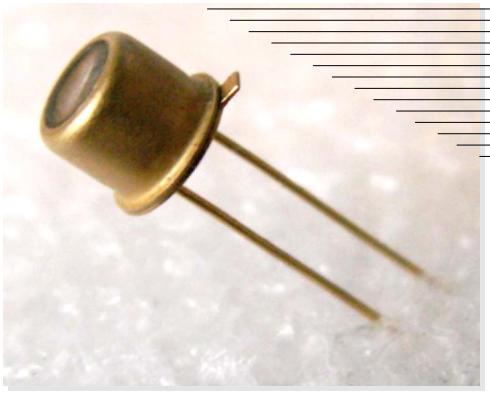
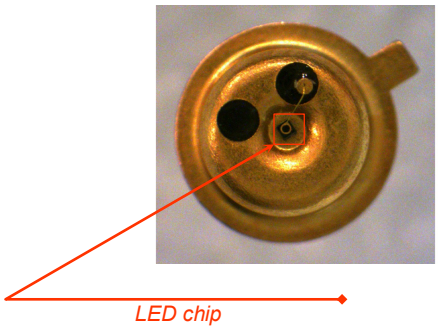
Mid infrared IBSG Optoelectronics



Features

- High reliability
- Spectral Selectivity
- Easy to use in lock-in circuits



Applications

- Measuring equipment
- Gas analysis (N_2O, SO_2)
- Analytical spectral devices

Options

- Power supply: LED Driver D-31M

Description

Light emitting diode **LED41** demonstrates typical maximum of emitting wavelength of λ_P= 4.05 µm (I = 150 mA, f = 0.5 KHz, duty cycle: 50%).

LED chip is mounted in a standard TO-18 package.

LED heterostructure is grown on InAs substrate.

Related products: **LED41** can be used in optical pair with our PD48-05-WS photodiodes.

General characteristics

Package	Parameter	Symbol	Value	Unit
TO-18	Maximum operating current	I^*_{QCW}	220	mA
		I^{**}_{Pulsed}	2000	
	Soldering temperature	T_s	+ 230	°C
	Operating temperature	T_{opr}	− 30…+ 50	°C
	Storage temperature	T_{stg}	− 55…+ 60	°C
	Weight	m	0.26	g
	Size	D	5.5	mm
		H	17.7	

* 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 µs, duty cycle: 0.1%

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Electrical and optical characteristics

Parameter	Symbol	Condition $T_a \approx +20$ °C	Min	Max	Unit
Peak emission wavelength	λ_p	I_F = 150 mA	λ_{typ}= 4.05		µm
			3.95	4.1	
Spectral FWHM	$\Delta\lambda$	I_F = 150 mA	700	1000	nm
Pulse optical power	P^*_{QCW}	I_F = 200 mA	15	30	µW
	P^{**}_{Pulsed}	I_F = 1000 mA	70	160	
Forward voltage	V_F	(*)	0.2	0.4	V
Switching time	τ		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 µs, duty cycle: 0.1%, current: 1 A

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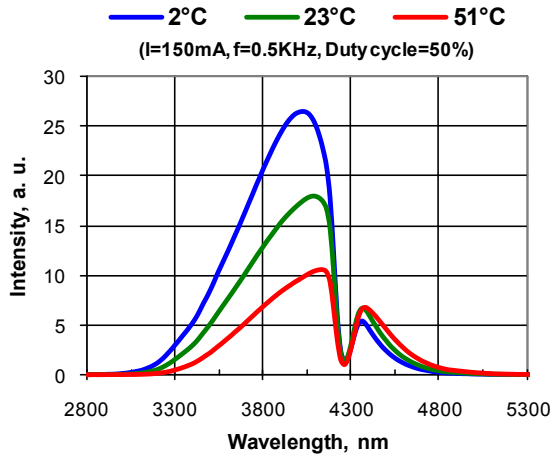
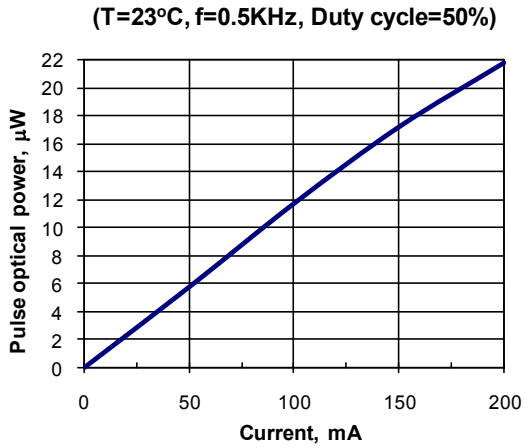
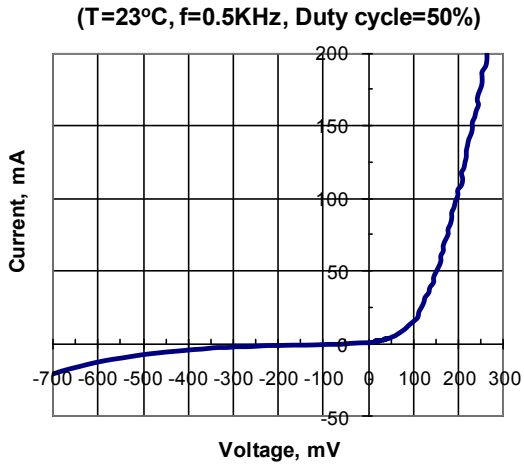
Electroluminescence spectra



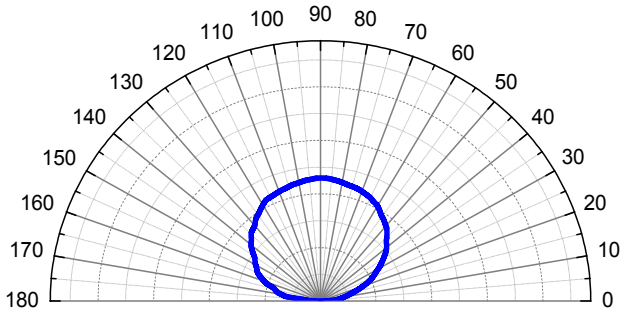
Pulse optical power vs. current



Current vs. voltage



Field pattern



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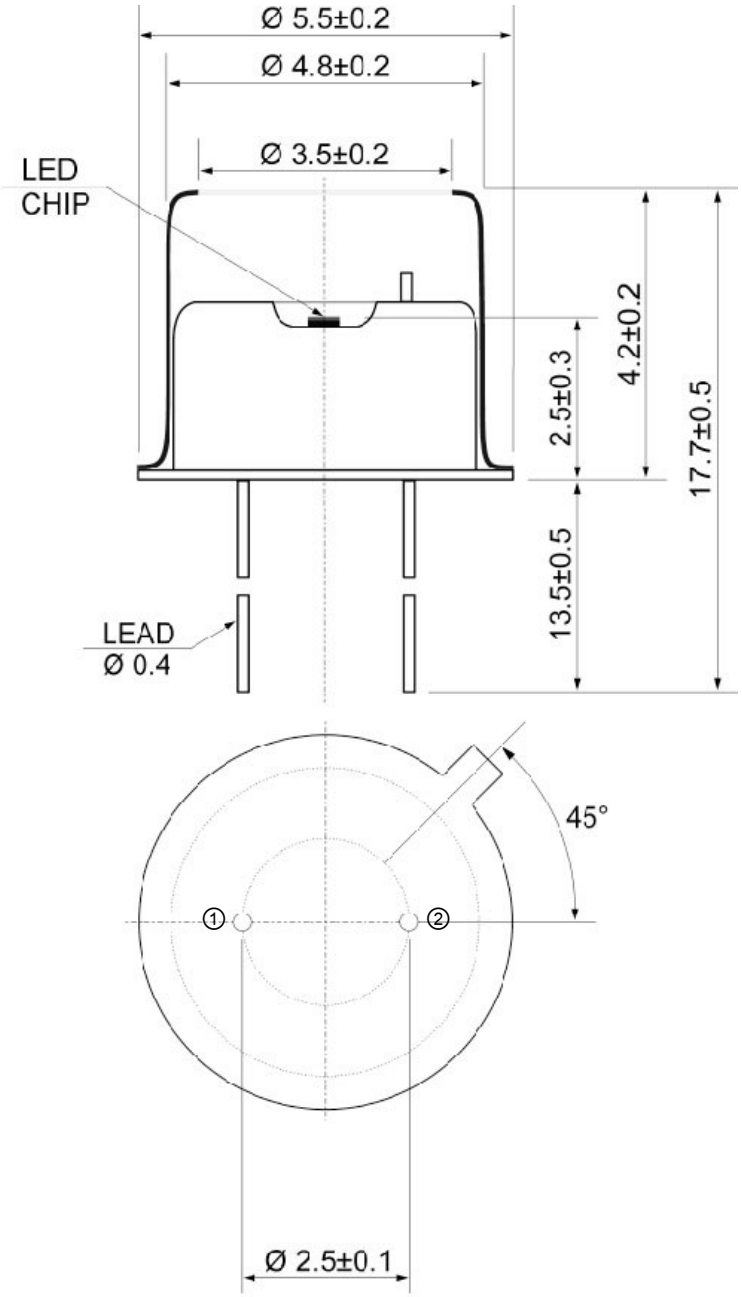
TO-18 package dimensions (mm)



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

* **Attention**: Pin polarity can be changed.

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