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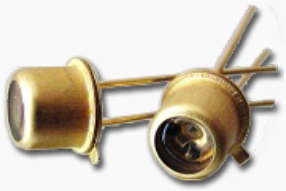
v 2.0 24.11.2014

LED43

- Mid-IR LED
- 4.15 µm, 0.01 mW qCW
- TO-18
- With cap and without window



RoHS COMPLIANT Pb-Free

Description

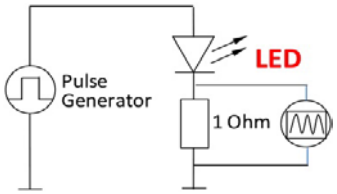
LED43 series are fabricated from narrow band-gap InAsSb/InAsSbP heterostructures lattice matched to InAs substrate. This Mid-IR LED provides a typical peak wavelength of **4.15 µm** and optical power of typ. **0.01 mW qCW**. It comes in TO-18 package a with a glass window.

Electro-Optical Characteristics (T_{CASE} = 25°C)

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Peak Wavelength *[1]	λ_P	I_F=150mA qCW	4.10	4.15	4.30	µm
Half Width (FWHM)	$\Delta\lambda$	I_F=150mA qCW	700	850	1000	nm
Optical Output Power, qCW	P_O	I_F=200mA qCW	0.08	0.01	0.012	mW
Optical Output Power, pulsed	P_O	I_F=1A, f=1kHz, duty cycle 0.1%	0.18	0.20	0.22	mW
Operating Voltage	V_{OP}	I_F=200mA qCW	0.2	-	0.8	V
Switching Time	V_F		10	20	30	ns
Operating Temperature	T_{CASE}		-200	-	+50	°C
Soldering Temperature	T_{SOLD}				180	°C

Operating Regime

LED Basic Circuit Connection



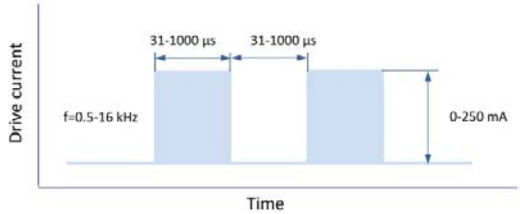
Suitable Drivers And Evaluation Boards

- **D-31M**
- **D-41**
- **D-51**
- **mD-1c**
- **mD-1p**

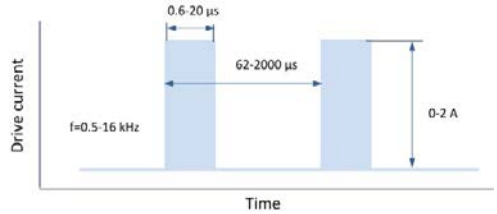
We recommend to use **Quasi Continuous Wave (qCW) mode** with duty cycle 50% or 25% to obtain maximum average optical power, and short **Pulse mode** to obtain maximum peak power.

CW (continuous wave) mode is **NOT** recommended!

Quasi Continuous Wave (qCW) mode



Pulse Mode



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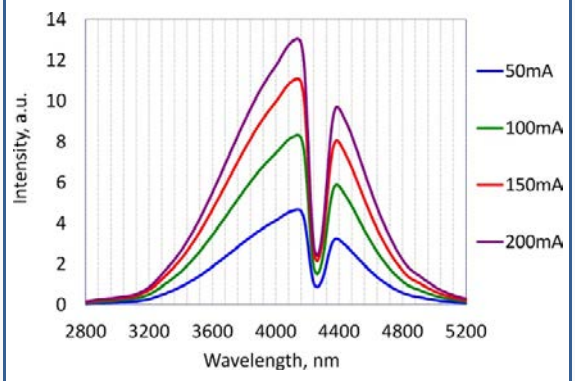
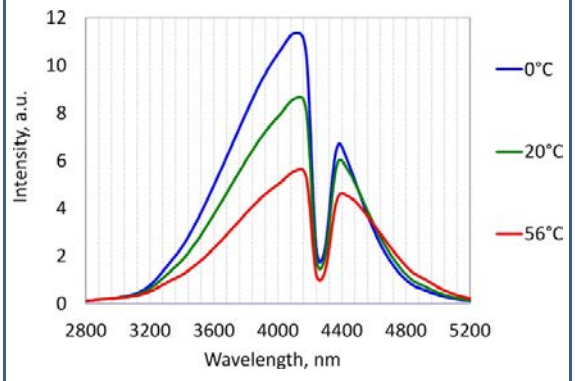
Performance Characteristics

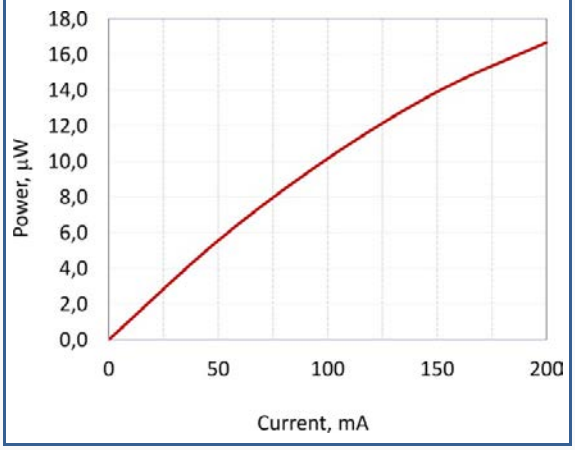
Spectra At Different Currents (qCW, T_{CASE}=25°C)



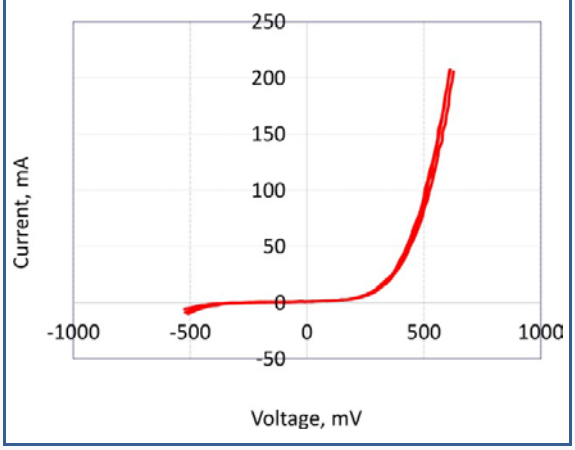
Spectra At Different Temperatures (qCW, I_F=150mA)



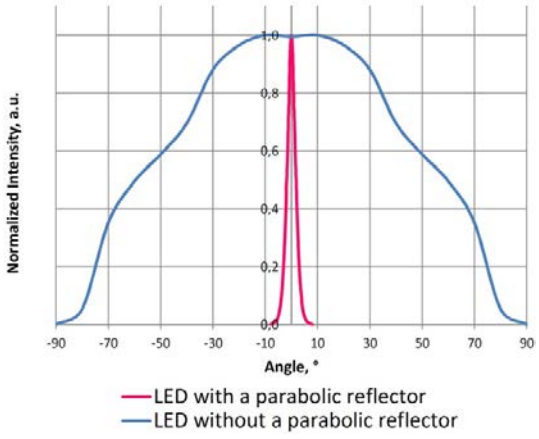
Output Power vs. Operating Current (qCW, T_{CASE}=25°C)



Forward Current vs. Forward Voltage (T_{CASE}=25°C)



Beam Divergence



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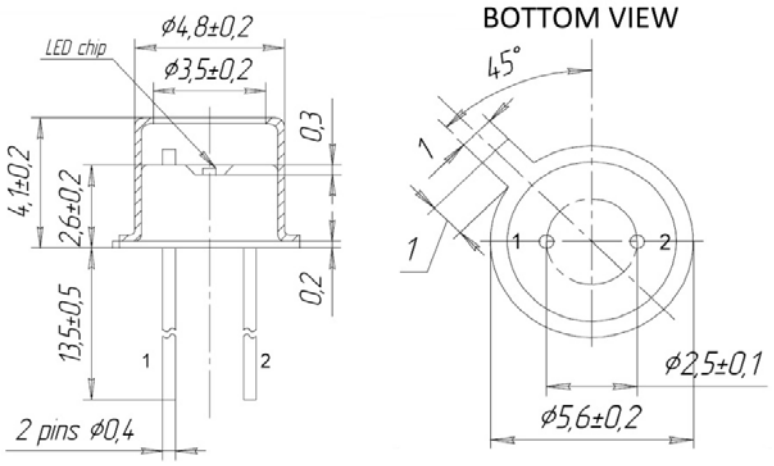
Outline Dimensions

LED21



Lead	Description
PIN 1	Cathode
PIN 2	Anode

All dimensions in mm

Material – kovar, finish – gold/plating

Precautions

Cautions:

- Check your connection circuits before turning on the LED.
- Observe the LED polarity: LED anode is marked with a RED dot.
- DO NOT connect the LED to the multimeter!

Soldering:

- Do avoid overheating of the LED
- Do avoid electrostatic discharge (ESD)
- Do avoid mechanical stress, shock, and vibration
- Do only use non-corrosive flux
- Do not apply current to the LED until it has cooled down to room temperature after soldering

Static Electricity:

LEDs are sensitive to electrostatic discharge (ESD). Precautions against ESD must be taken when handling or operating these LEDs. Surge voltage or electrostatic discharge can result in complete failure of the device.

Operation:

Do *only* operate LEDs with a current source.

Running these LEDs from a voltage source will result in complete failure of the device.

Current of a LED is an exponential function of the voltage across it. Usage of current regulated drive circuits is mandatory.