

Lms21LED-R



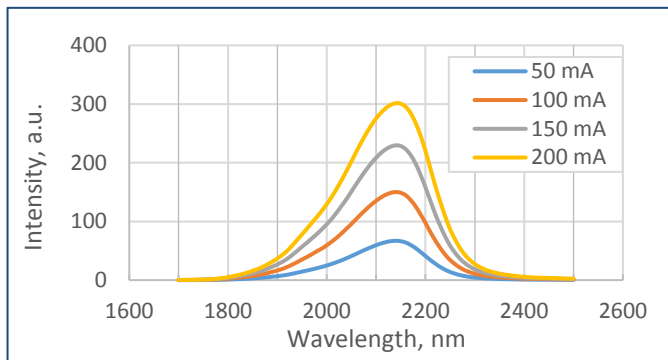
| Device parameters | Symbol | Value | Units |
|--|------------------|-----------|--------------------|
| Operating/ storage temperature | T_{stg} | -60..+90* | $^{\circ}\text{C}$ |
| Soldering temperature (can be applied for not more than 5 secs) | T_{sol} | +180 | $^{\circ}\text{C}$ |

*LED design for different storage/operating temperature range can be considered under request.

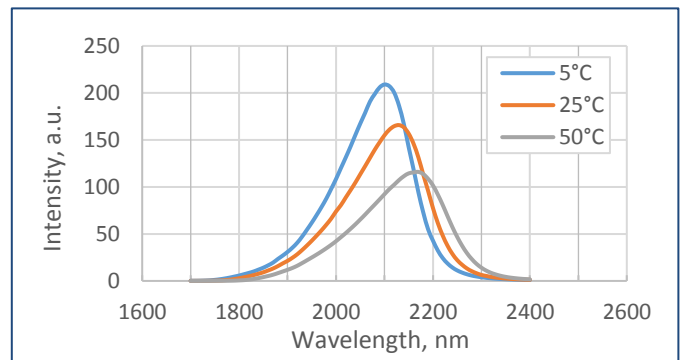
All parameters are for LED operation at 25 $^{\circ}\text{C}$ unless otherwise stated.

| LED parameters | Conditions | Symbol | Value | Units |
|--|--|------------------|-------------------|---------------|
| Peak emission wavelength ¹ | qCW mode ³ $I = 150 \text{ mA}$ | λ_p | 2.10 - 2.19 | μm |
| FWHM of the emission band ¹ | qCW mode ³ $I = 150 \text{ mA}$ | FWHM | 150 - 250 | nm |
| Average optical power (minimal / typical) ¹ | qCW mode ³ $I = 200 \text{ mA}$ | P_{qCW} | min 0.8 / typ 1.2 | mW |
| Peak optical power (minimal / typical) ² | Pulse mode ⁴ $I = 1 \text{ A}$ | P_{pul} | min 7.5 / typ 12 | mW |
| Maximum operating current | qCW mode ³ | I_{qCW} | 250 | mA |
| | Pulse mode ⁴ | I_{pul} | 2 | A |
| Forward voltage ¹ | qCW mode ³ $I = 200 \text{ mA}$ | V | 0.5 - 2.5 | V |

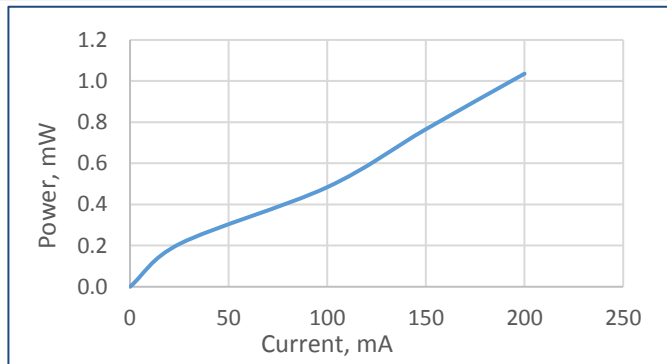
Typical spectra (qCW³)



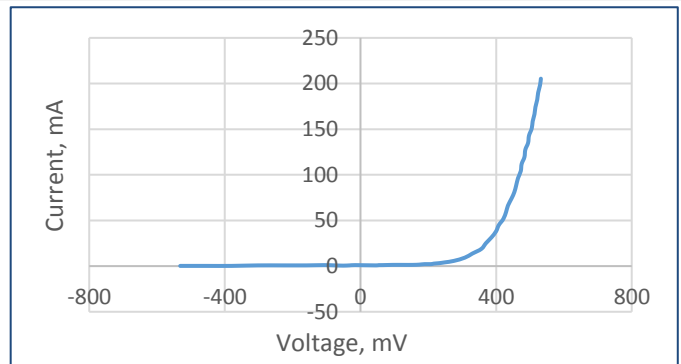
Spectra at different temperatures (qCW³, 150 mA)



Typical optical power characteristic (qCW³)



Typical current-voltage characteristic (qCW³)



¹ Parameter tested for each device.

² Parameter tested for representative sampling.

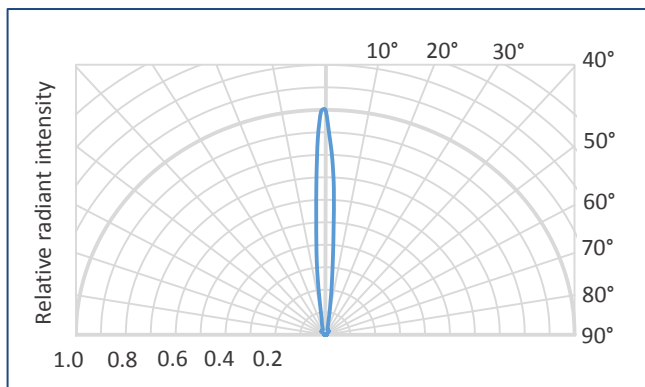
³ qCW mode: repetition rate: 0.5 KHz, pulse duration: 1 ms, duty cycle: 50%.

⁴ Pulse mode: repetition rate: 0.5 KHz, pulse duration: 20 μs , duty cycle: 1%.

| Packages | Model |
|--|----------------|
| TO-18 with a cap with a glass window | Lms21LED |
| TO-18 with a parabolic reflector without a glass window | Lms21LED-R |
| TO-18 with a parabolic reflector with a glass window | Lms21LED-RW |
| TO-5 with a built-in thermocooler and thermoresistor, covered by a cap with a glass window | Lms21LED-TEM |
| TO-5 with a built-in thermocooler and thermoresistor, covered by a parabolic reflector with a glass window | Lms21LED-TEM-R |

Radiant characteristic (far-field pattern)

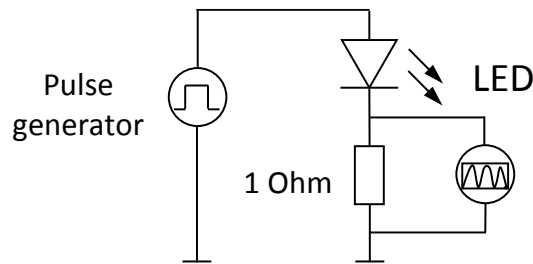
TO-18 package with a parabolic reflector



Related products:

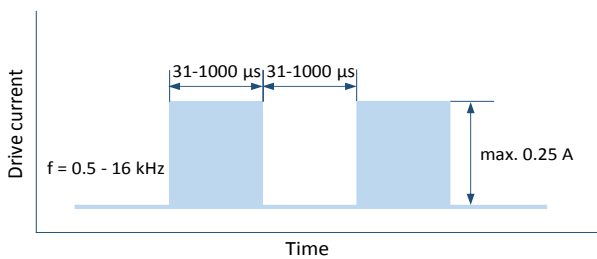
- **Photodiodes Lms24PD, Lms25PD series** - detectors of mid-infrared radiation;
- **LED drivers (D-41i, D-51i, minidrivers mD-1c, mD-1p)** - provide LED power supply in pulse modes.

To drive the LED we recommend the following basic circuit connection:

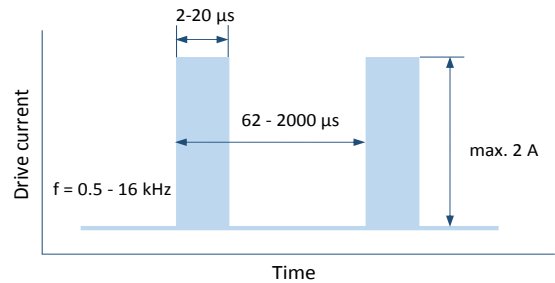


We recommend using **Quasi Continuous Wave (qCW) mode** with a duty cycle 50% or 25% to obtain maximum average optical power and short **Pulse modes** to obtain maximum peak power. Hard CW (continuous wave) mode is NOT recommended.

Quasi Continuous Wave (qCW) mode



Pulse mode

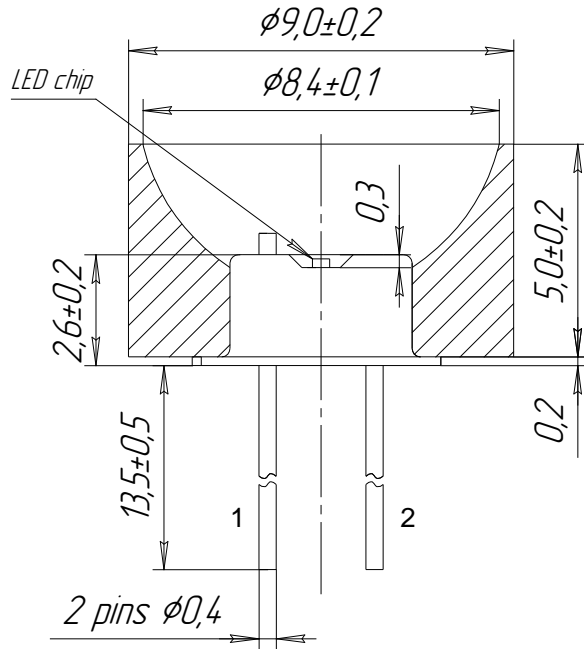


IMPORTANT CAUTIONS:

- please check your connection circuit before turning on the LED;
- please mind the LED polarity: anode is marked with a RED dot; REVERSE voltage applying is FORBIDDEN;
- please do not connect the LED to the multimeter;
- please control the CURRENT applied to the LED in order NOT to EXCEED the maximum allowable values.

Technical Drawing

Lms21LED-R



1 - LED cathode
2 - LED anode

TOP VIEW

BOTTOM VIEW

