LED Microsensor NT

Mid-Infrared (MIR) Light-Emitting Diode

Series with glass cover

3.30 - 3.44 µm

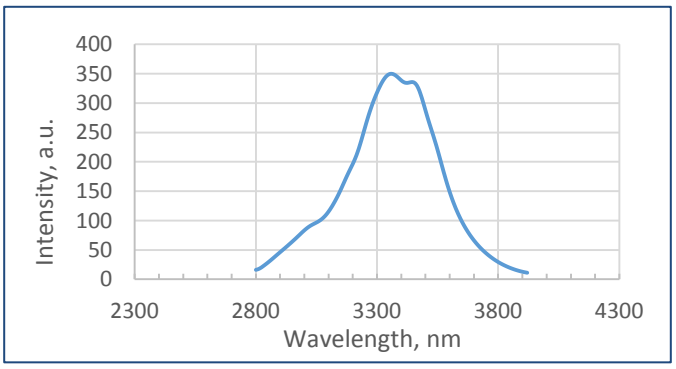
Lms34LED-CG

Device parameters	Symbol	Value	Units
Operating temperature	T_{opr}	0..+50	°C
Storage temperature	T_{stg}	0..+40	°C
Soldering temperature (time < 3 seconds, 3 mm from case)	T_{sol}	+180	°C

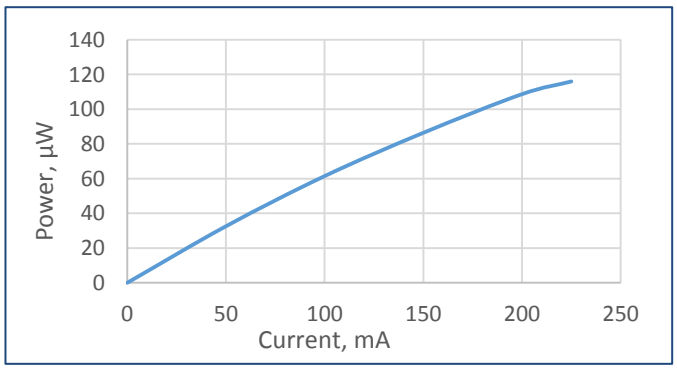
All parameters are for LED operation at 25°C unless otherwise stated.

LED parameters	Conditions	Symbol	Value	Units
Peak emission wavelength[1]	qCW mode[3] I = 150 mA	λ_p	3.30 - 3.44	µm
FWHM of the emission band[1]	qCW mode[3] I = 150 mA	FWHM	250 - 600	nm
Average optical power (minimal / typical)[1]	qCW mode[3] I = 200 mA	P_{qcw}	min 100 / typ 300	µW
Peak optical power (minimal / typical)[2]	Pulse mode[4] I = 1 A	P_{pul}	min 700 / typ 2000	µW
Maximum operating current	qCW mode[3]	$I_{max\ qcw}$	200	mA
	Pulse mode[4]	$I_{max\ pulse}$	1	A
Forward voltage[1]	qCW mode[3] I = 200 mA	V	0.2 - 1.3	V

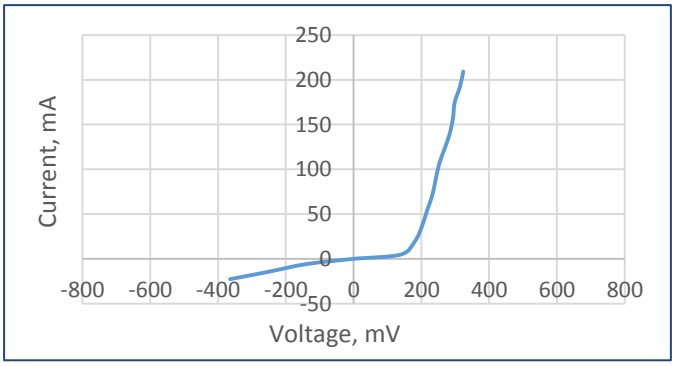
Typical spectrum (qCW[3])



Typical optical power characteristic (qCW[3])



Typical current-voltage characteristic (qCW[3])



[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%.

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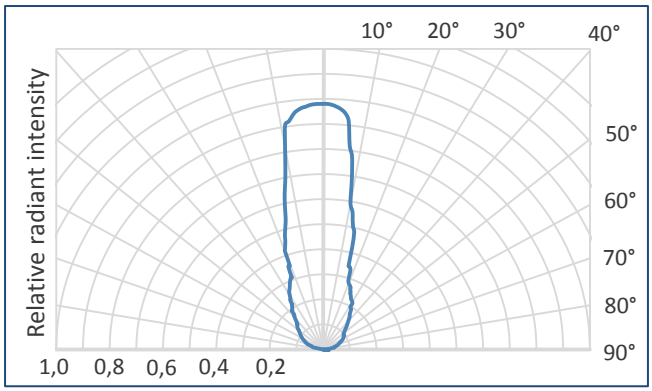
Packages	Model
TO-18 with glass cover	Lms34LED-CG

Radiant characteristic (far-field pattern)

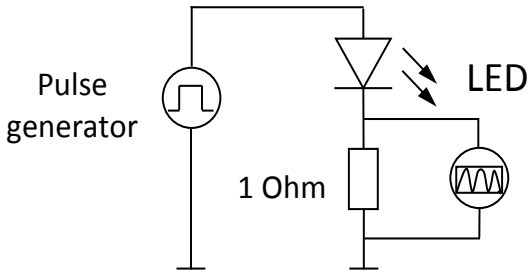
TO-18 package with glass cover



Related products:

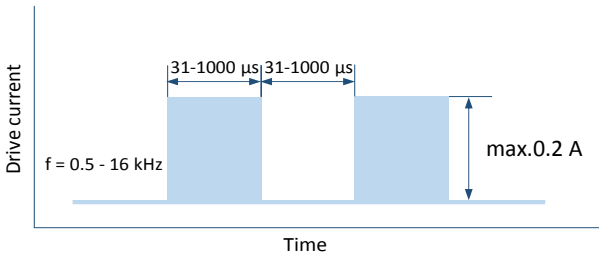
- **Photodiodes Lms36PD series** - detectors of mid-infrared radiation;
- **LED drivers (D-41i, D-51i, minidrivers mD-1c, mD-1p)** - provide LED power supply in pulse modes.

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

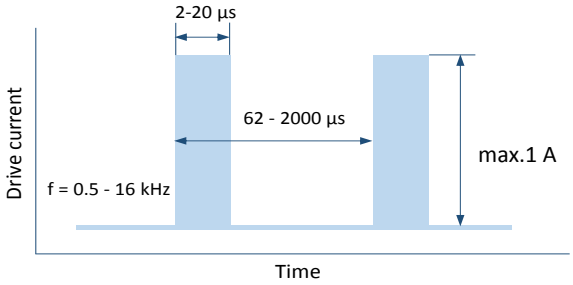


We recommend using **Quasi Continuous Wave (qCW) mode** with a duty cycle 50% or 25% to obtain maximum average optical power and short **Pulse modes** to obtain maximum peak power. Hard CW (continius wave) mode is NOT recommended.

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;
- please do not touch glass covering and do not apply any force to it;
- please observe the operating and storage temperature, exceeding the allowable range may cause irreparable damage of glass covering.

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Technical Drawing

Lms34LED-CG