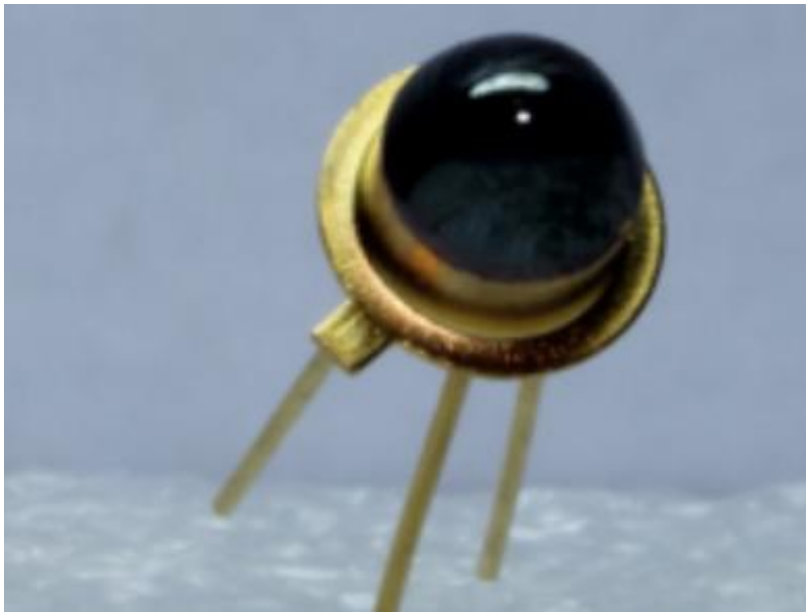
3.30-3.44um MIR LED with Glass Cap



Product Description

Idealphptonics is pleased to announce new light-emitting diodes with a special glass cap, which increases the LED output optical power (up to 3-5 times). This allows for higher precision in various gas, liquid, and solid sensing and analysis applications. Along with other advantages (compact size, low power consumption, high modulation range), our LEDs become an even more impressive component basis for sensors and analyzers.

Product features

Mid-infrared band; High optical efficiency; TO package; Fast response; Wide operating temperature

Part Number

MP-LED-3300-0.3-TO18

Application area

Moisture detection | Gas sensing | Medical diagnostics | Material analysis | Security monitoring

Core parameters

Peak Emission Wavelength	Operating Current
3.30-3.44um	200mA/1000mA

General Parameters

LED models with glass cap								
Model	Peak Emission Wavelength [um]	FWHM of Emission	Average Optical Power	Peak Optical Power	Voltage[1] [V] (200 mA)	Oparating Current in	Operating Current in	Operating/Storage Tempe

	min-max	Band [nm] min-max	in qCW Mode [uW] Min/Typ	in Pulse Mode[2,3] [uW] Min/Typ	min-max	qCW Mode[1] [mA]	Pulse Mode[2] [mA]	rature[4] [°C]
MP-LED-2700-0.15-TO18	2.70-2.79	300-500	50/150	370/1000	0.2-1.0	200	1000	0..+50/0..+40
MP-LED-2830-0.3-TO18	2.83-2.90	300-500	100/300	700/2000	0.2-1.0	200	1000	0..+50/0..+40
MP-LED-3300-0.3-TO18	3.30-3.44	250-600	100/300	700/2000	0.2-1.3	200	1000	0..+50/0..+40
MP-LED-3700-0.18-TO18	3.70-3.94	400-700	80/180	500/1500	0.2-0.8	250	2000	0..+50/0..+40
MP-LED-4050-0.18-TO18	4.05-4.30	400-1200	80/180	500/1500	0.2-0.8	250	2000	0..+50/0..+40

[1] Repetition rate: 0.5 kHz, pulse duration: 1 ms, duty cycle: 50%

[2] Repetition rate: 0.5 kHz, pulse duration: 20 µs, duty cycle: 1%

[3] Parameters tested on a representative sample; all other parameters tested for each device

[4] Temperature range may vary depending on package type

Device Parameters

Device Parameter	Symbol	Value	Unit
Operating/Storage Temperature	T_opr	0...+50	℃
Solerding Temperature(time<3 sec, 3mm from housing)	T_sol	+180	℃

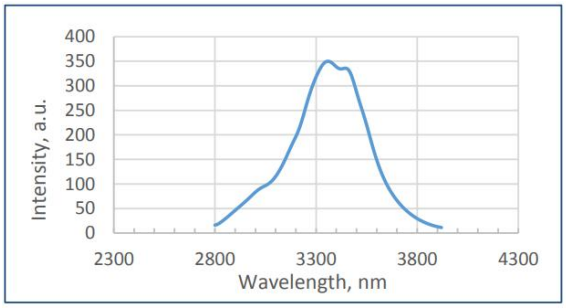
All parameters apply to LED operation at 25℃ unless otherwise stated.

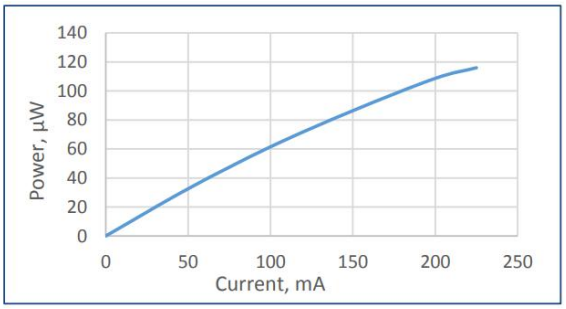
LED Parameters

Parameter	Condition	Symbol	Value	Unit
Peak Emission Wavelength[1]	qCW mode[3] I = 150 mA	λ_p	3.30-3.44	μm
FWHM of Emission Band[1]	qCW mode[3] I = 150 mA	FWHM	250-600	nm
Average Optical Power (Min/Typ)[1]	qCW mode[3] I = 200 mA	P_{qcw}	min 100 / typ 300	uW
Peak Optical Power (Min/Typ)[2]	Pulse mode[4] I = 1 A	P_{pul}	min700 / typ 2000	uW
Max 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

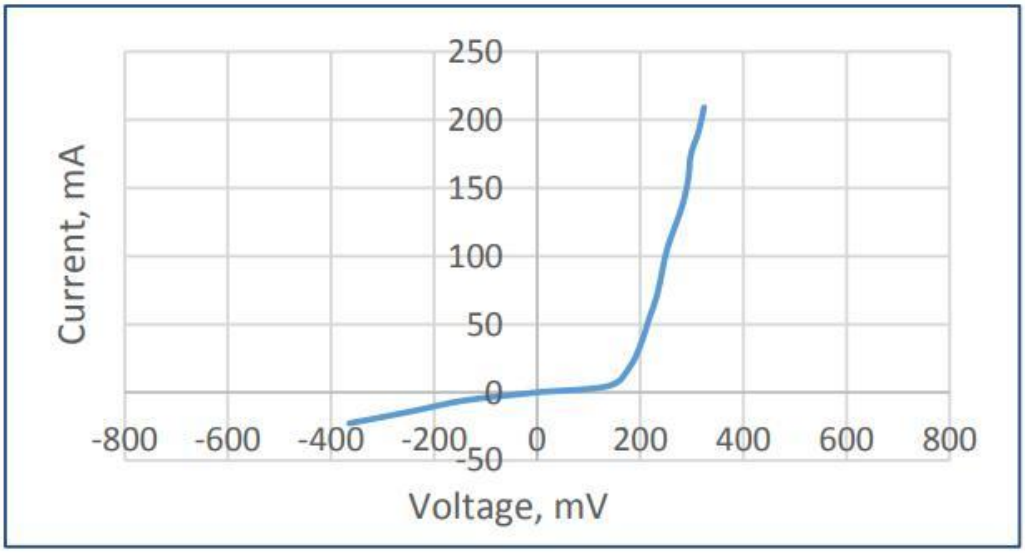
Product Characteristics

Typical spectrum (qCW[3]) and typical optical power characteristics (qCW[3])





Typical current-voltage characteristics (qCW[3])



[1] **Parameter tested for each device.**

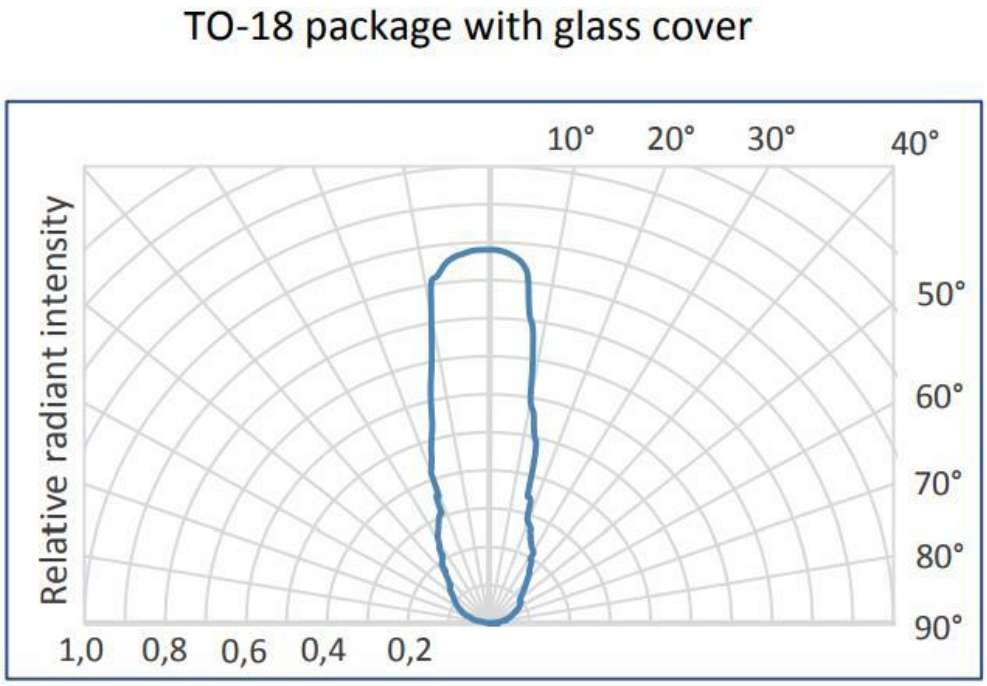
[2] **Parameter tested on a representative sample.**

[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%.**

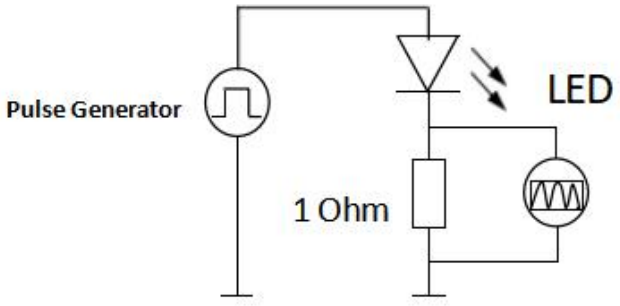
Radiation Characteristics (Far Field Pattern)

TO-18 package with glass cap



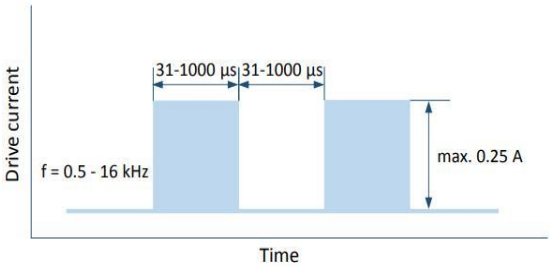
Related Products

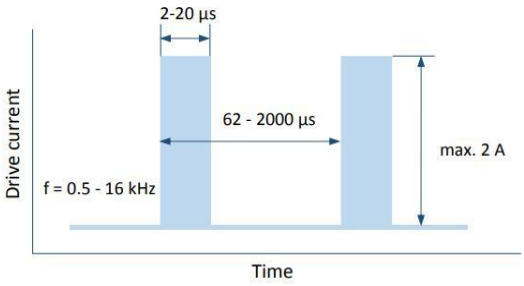
To drive the LED, we recommend the following basic circuit connection:



We recommend using quasi-CW mode with a duty cycle of 50% or 25% to obtain maximum average optical power, and short pulse mode to obtain the highest peak power. Strong CW (continuous wave) mode is not recommended.

Quasi-CW (qCW) mode and Pulse mode





Precautions

Please check your connection circuit before turning on the LED.

Please pay attention to LED polarity: the anode is marked with a red dot;

reverse voltage is prohibited.

Do not connect the LED to a multimeter.

Please control the current applied to the LED and do not exceed the maximum

allowable value.

Do not touch the glass cap or apply any force to it.

Please pay attention to the operating and storage temperatures; exceeding the

allowable range may cause irreparable damage to the glass cap.