



## LED19-PR

- Mid-IR LED
- 1.95  $\mu\text{m}$ , 1 mW qCW
- TO-18, with parabolic reflector
- without window



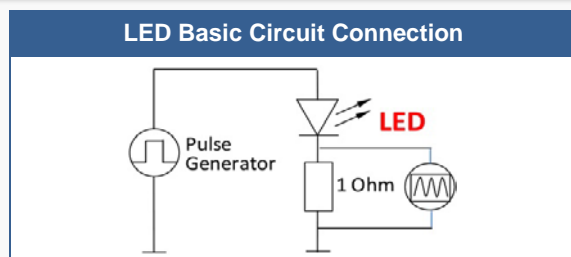
### Description

LED19-PR series are fabricated from narrow band-gap GaInAsSb/AlGaAsSb heterostructures lattice matched to GaSb substrate. This Mid-IR LED provides a typical peak wavelength of **1.95  $\mu\text{m}$**  and optical power of typ. **1 mW qCW**. It comes in TO-18 package, with a parabolic reflector and a without window (on request).

### Electro-Optical Characteristics ( $T_{\text{CASE}} = 25^\circ\text{C}$ )

Parameter	Symbol	Conditions	Values			Unit
			Min.	Typ.	Max.	
Peak Wavelength *1	$\lambda_P$	$I_F=150\text{mA}$ qCW	1.90	1.95	1.99	$\mu\text{m}$
Half Width (FWHM)	$\Delta\lambda$	$I_F=150\text{mA}$ qCW	100	150	200	nm
Optical Output Power, qCW	$P_O$	$I_F=200\text{mA}$ qCW	0.8	1.0	1.2	mW
Optical Output Power, pulsed	$P_O$	$I_F=1\text{A}$ , $f=1\text{kHz}$ , duty cycle 0.1%	20	25	30	mW
Operating Voltage	$V_{OP}$	$I_F=200\text{mA}$ qCW	0.5	-	1.5	V
Switching Time	$V_F$		10	20	30	ns
Operating Temperature	$T_{\text{CASE}}$		-200	-	+50	$^\circ\text{C}$
Soldering Temperature	$T_{\text{SOLD}}$				180	$^\circ\text{C}$

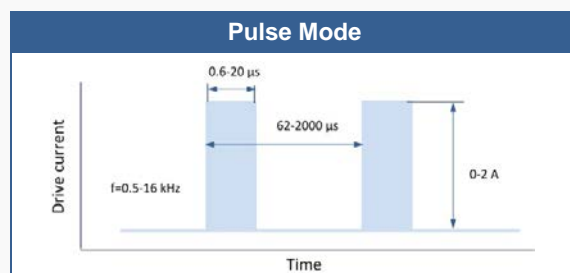
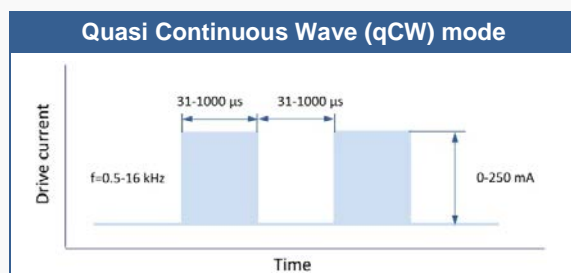
### Operating Regime



- Suitable Drivers And Evaluation Boards**
- D-31M
  - D-41
  - D-51
  - mD-1c
  - mD-1p

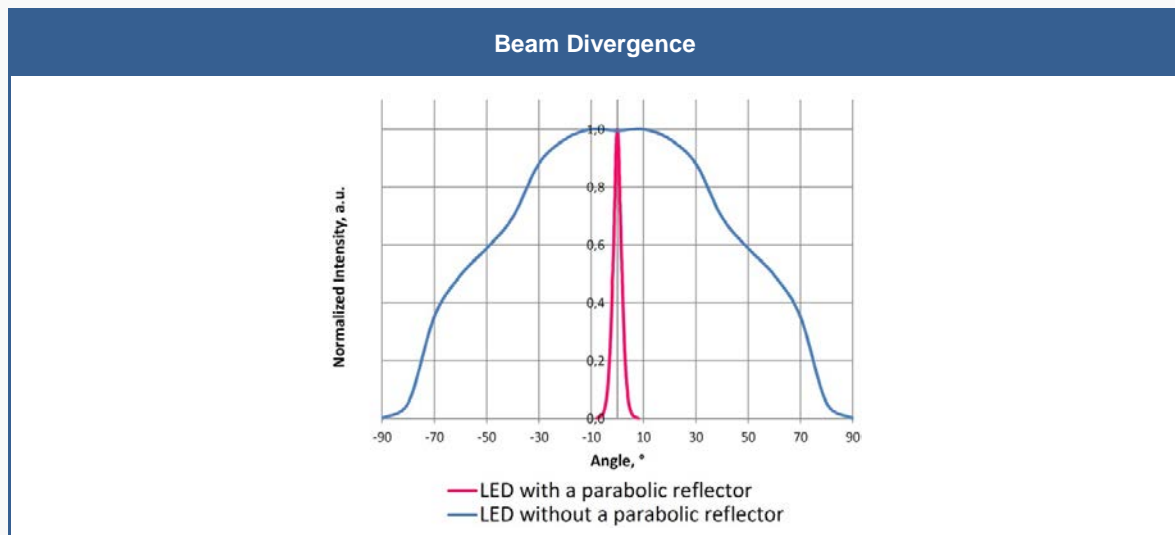
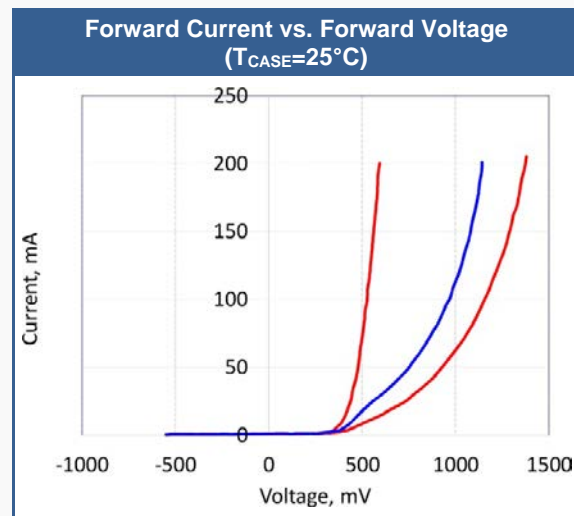
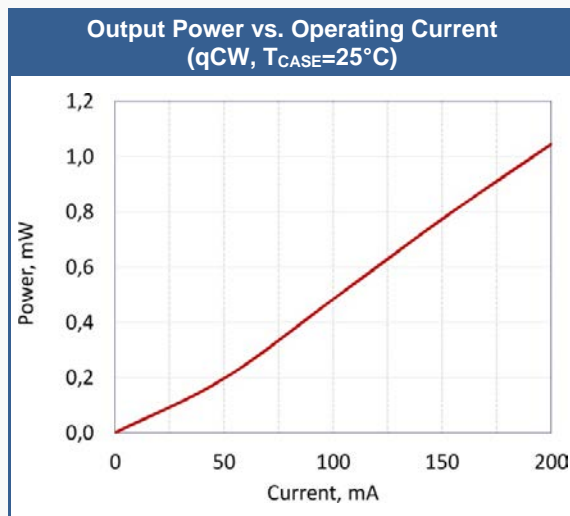
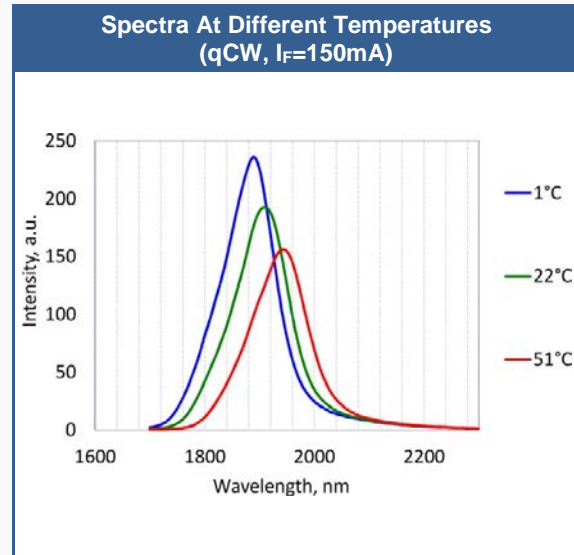
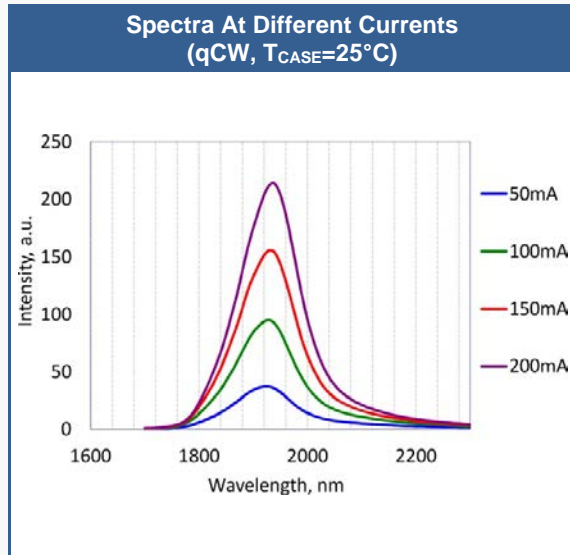
We recommend to use **Quasi Continuous Wave (qCW) mode** with duty cycle 50% or 25% to obtain maximum average optical power, and short **Pulse mode** to obtain maximum peak power.

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





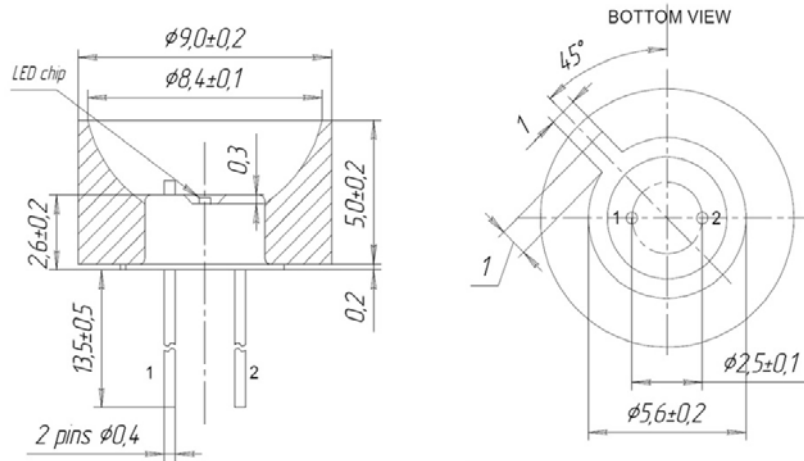
## Performance Characteristics





## Outline Dimensions

### LED22-PR



Lead	Description
PIN 1	Cathode
PIN 2	Anode

All dimensions in mm

Material – kovar, finish – gold/plating

Parabolic reflector – protects the LED from damage and provides the reduction of the radiation divergence.

## 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.