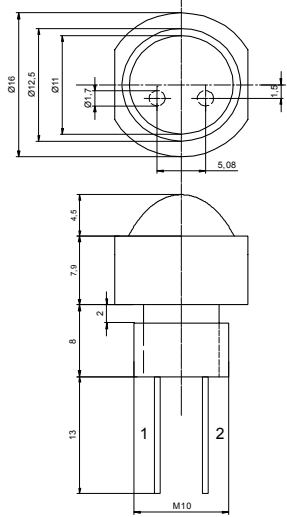


Radiation	Type	Technology	Case
Infrared	3.6 W	AlGaAs/GaAs	Plastic lens, metal case

 <p><b>Outline:</b></p> <p>H = 12.4 mm (± 0.5)</p> <p>D = 16.0 mm (± 0.5)</p> <p>Thread M10</p> <p>Pin 1 – cathode</p> <p>Pin 2 – anode</p>	<p><b>Description</b></p> <p>High-power infrared LED in an aluminium case with thread socket, for easy handling and heat sink mounting</p>
	<p><b>Applications</b></p> <p>Medical appliances, remote control and light barriers, measurement applications and security systems</p>

**Absolute Maximum Ratings**

at T<sub>amb</sub> = 25°C, on heat sink (S ≥ 200 cm<sup>2</sup>), unless otherwise specified

Parameter	Test conditions	Symbol	Value	Unit
DC forward current	on heat sink	I <sub>F</sub>	1.8	A
Peak forward current	t <sub>p</sub> ≤ 10 μs, f ≤ 500 Hz	I <sub>FM</sub>	2,2	A
Power dissipation	on heat sink	P	3,6	W
Operating temperature range	on heat sink	T <sub>amb</sub>	-25 to +100	°C
Storage temperature range	on heat sink	T <sub>stg</sub>	-25 to +100	°C
Junction temperature	on heat sink	T <sub>j</sub>	100	°C

**Electrical Characteristics**

T<sub>amb</sub> = 25°C, unless otherwise specified

Parameter	Test conditions	Symbol	Min	Typ	Max	Unit
Forward voltage	I <sub>F</sub> = 350 mA	V <sub>F</sub>		1.35	1.6	V
Forward voltage*	I <sub>F</sub> = 1500 mA	V <sub>F</sub>		1.9	2.4	V
Switching time	I <sub>F</sub> = 350 mA	t <sub>r</sub> , t <sub>f</sub>		600		ns
Reverse voltage	I <sub>R</sub> = 10 μA	V <sub>R</sub>	5			
Thermal resistance junction-case		R <sub>thJC</sub>		10		K/W

\*only recommended on optimal heat sink

We reserve the right to make changes to improve technical design and may do so without further notice. Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer.

**Optical Characteristics**

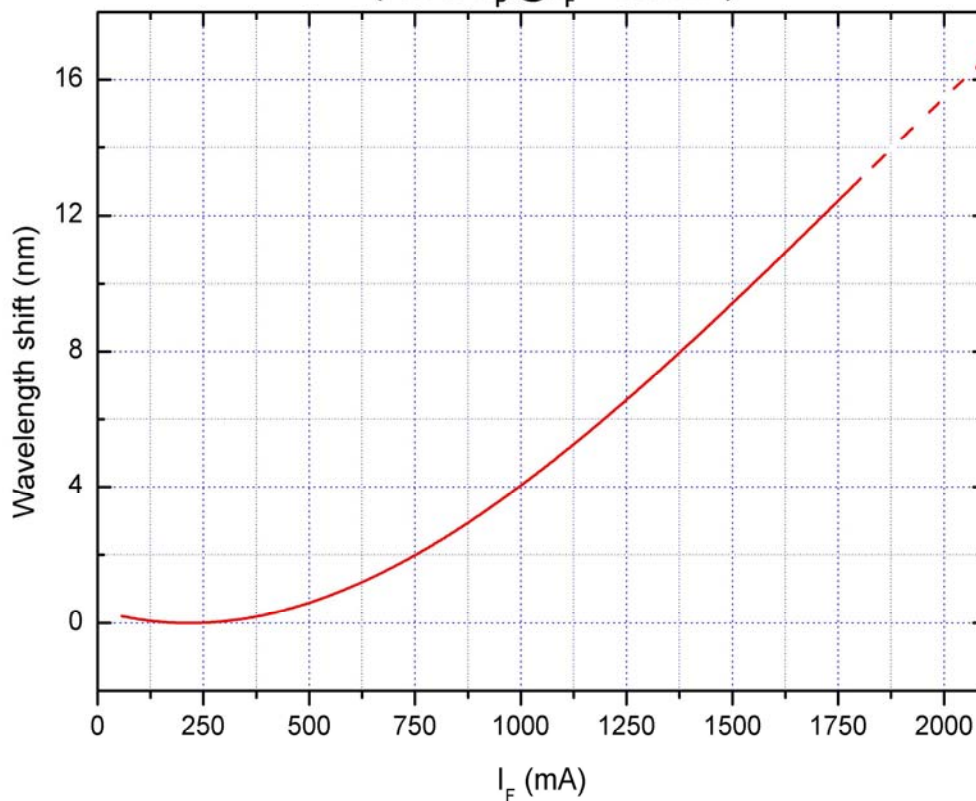
at  $T_{amb} = 25^{\circ}\text{C}$ , on heat sink ( $S \geq 200 \text{ cm}^2$ ), unless otherwise specified

Parameter	Test conditions	Symbol	Min	Typ	Max	Unit
Radiant power	$I_F = 350 \text{ mA}$	$\Phi_e$	40	50		mW
Radiant power*	$I_F = 1500 \text{ mA}$	$\Phi_e$		180		mW
Radiant intensity	$I_F = 350 \text{ mA}$	$I_e$	200	400		mW/sr
Radiant intensity*	$I_F = 1500 \text{ mA}$	$I_e$		1450		mW/sr
Peak wavelength	$I_F = 350 \text{ mA}$	$\lambda_p$	930	940	950	nm
Spectral bandwidth at 50%	$I_F = 350 \text{ mA}$	$\Delta\lambda_{0.5}$		45		nm
Viewing angle	$I_F = 350 \text{ mA}$	$\varphi$		20		deg

\*only recommended on optimal heat sink

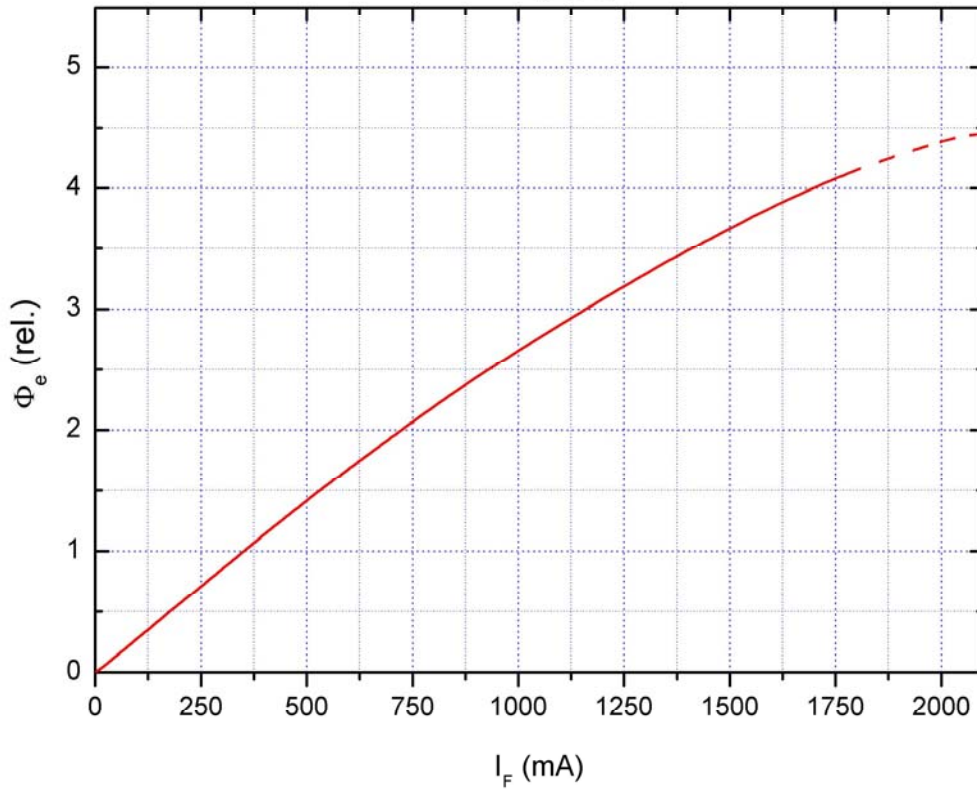
Note: All measurements carried out with *EPIGAP* equipment, on blank aluminium heat sink,  $S = 180 \text{ cm}^2$ , passive cooling. Measurement results and curve characteristics obtained with other heat sinks may differ.

**Typical wavelength shift vs. forward current  
(rel. to  $\lambda_p @ I_F = 350 \text{ mA}$ )**

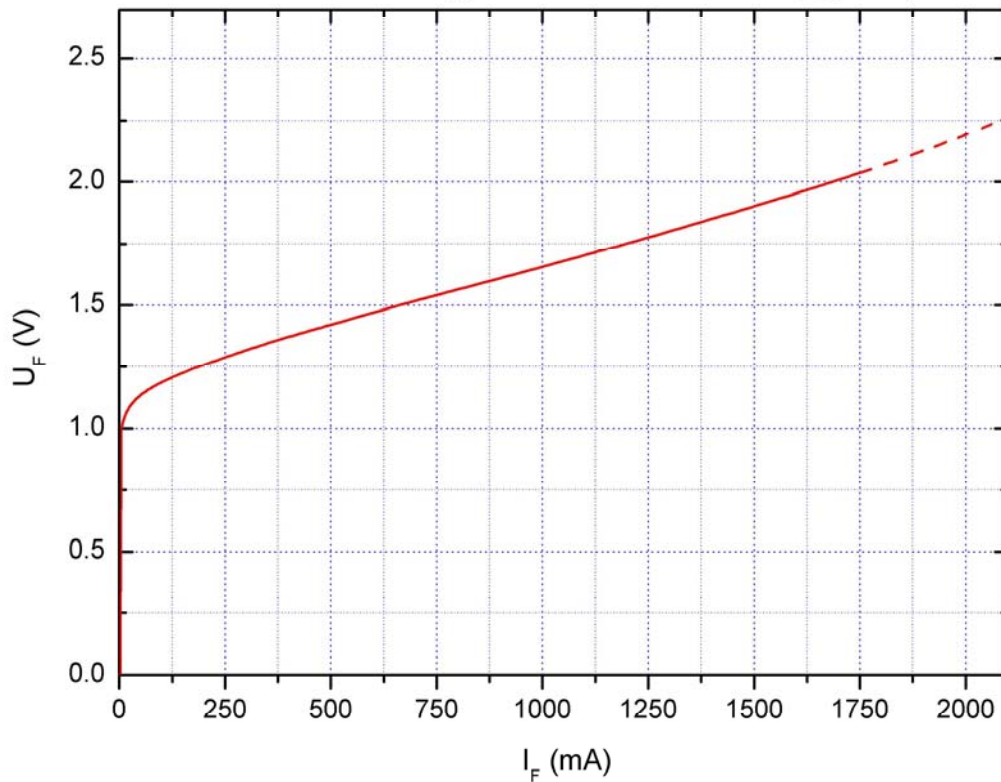


We reserve the right to make changes to improve technical design and may do so without further notice. Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer.

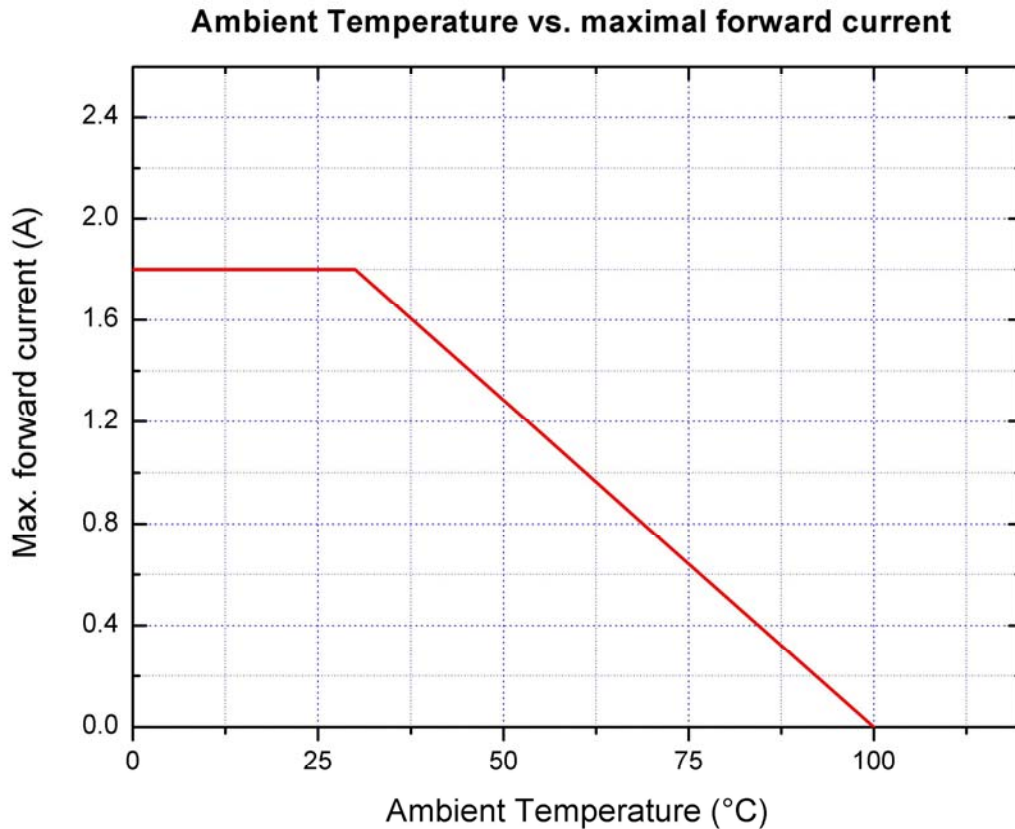
**Radiant power vs. forward current (typical)**  
 normalized to  $\Phi_E @ I_F = 350 \text{ mA}$



**Forward voltage vs. forward current (typical)**



We reserve the right to make changes to improve technical design and may do so without further notice. Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer.



**Remarks concerning optical radiation safety\***

Up to a forward current of 300 mA, at continuous operation, this LED may be classified as LED product *Class 1*, according to standard IEC 60825-1:A2. *Class 1* products are safe to eyes and skin under reasonably predictable conditions. This implicates a direct observation of the light beam by means of optical instruments.

If intended to operate at higher continuous current, this product should be classified as LED product *Class 1M*, according to standard IEC 60825-1:A2. *Class 1M* products are safe to eyes and skin under normal conditions, including when users view the light beam directly. *Class 1M* products produce either a highly divergent beam or a large diameter beam. Therefore only a small part of the whole laser beam can enter the eye. However, these laser products can be harmful to the retina if the beam is viewed using magnifying optical instruments. Therefore, users should not incorporate optics that could concentrate the output into the eyes.

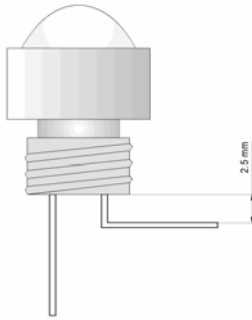
\*Note: Safety classification of an optical component mainly depends on the intended application and the way the component is being used. Furthermore, all statements made to classification are based on calculations and are only valid for this LED "as it is", and at continuous operation. Using pulsed current or altering the light beam with additional optics may lead to different safety classifications. Therefore these remarks should be taken as recommendation and guideline only.

We reserve the right to make changes to improve technical design and may do so without further notice. Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer.

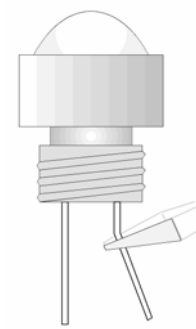
## Handling precautions

To prevent damage to the LED during soldering and assembly, following precautions have to be taken into account.

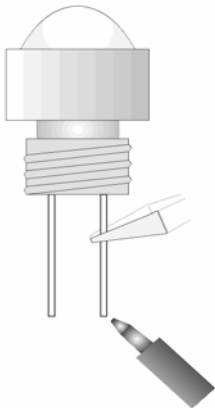
a) The bending point of the lead frame should be located at least 2.5 mm away from the body.



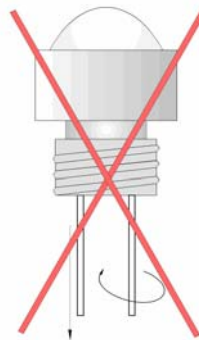
b) While bending, the base of the lead frame has to be fixed with radio pliers or similar.



c) To ensure an adequate strain relief, the lead frames have to be firmly fixed during soldering.



d) Avoid any torsion or tensile loading of the lead frames, especially when they have been heated after being soldered.



e) LEDs are static sensitive devices, so adequate handling precautions have to be taken, e.g. wearing grounding wrist straps.



**ESD**

We reserve the right to make changes to improve technical design and may do so without further notice. Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer.