

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

	<p><b>Description</b></p> <p>High-power infrared-LED in black anodised 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>

**Outline:**

H = 12.4 mm (± 0.5)

D = 16.0 mm (± 0.5)

Thread M10

Pin 1 – cathode

Pin 2 – anode

**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> = 1000 mA	V <sub>F</sub>		1.75		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**

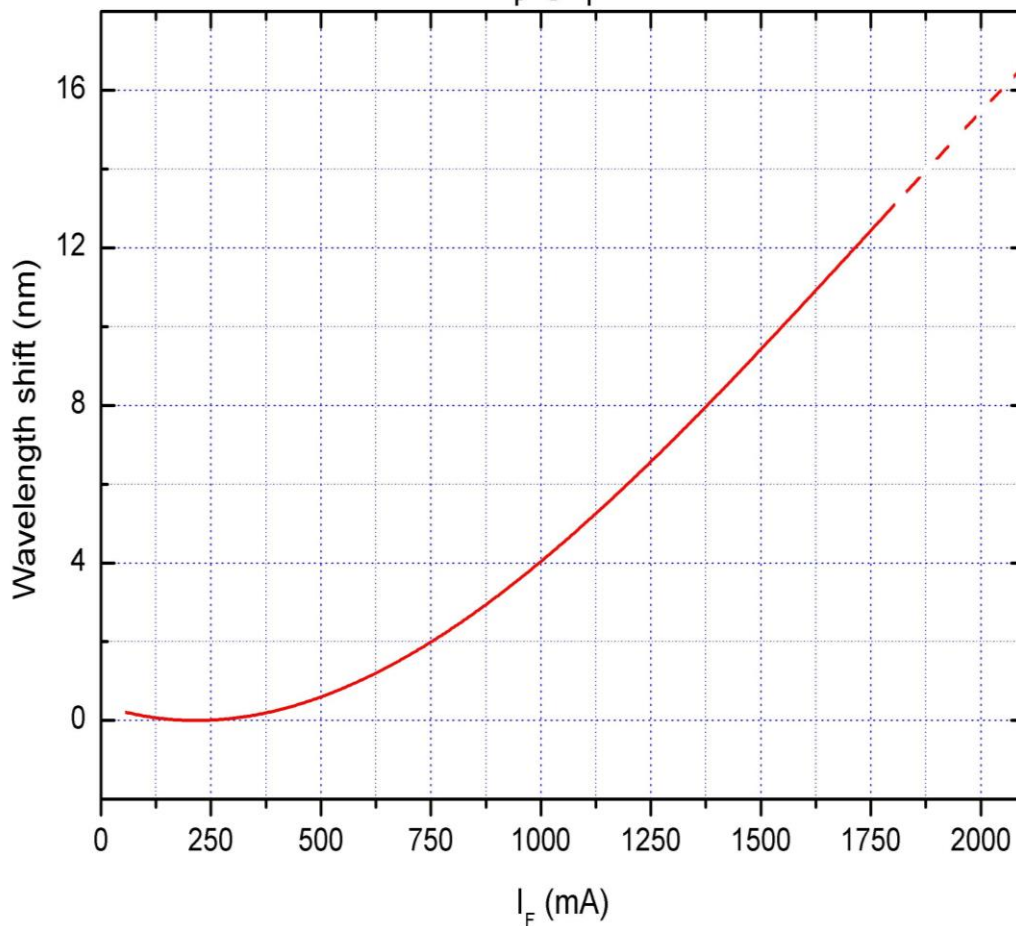
at  $T_{amb} = 25^{\circ}C$ , on heat sink ( $S \geq 200 \text{ cm}^2$ ), unless otherwise specified

Parameter	Test conditions	Symbol	Min	Typ	Max	Unit
Radiant power	$I_F = 350 \text{ mA}$	$\Phi_e$	36	45		mW
Radiant power*	$I_F = 1000 \text{ mA}$	$\Phi_e$	100	125		mW
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	$I_F = 350 \text{ mA}$	$\varphi$		100		deg

\*only recommended on optimal heat sink

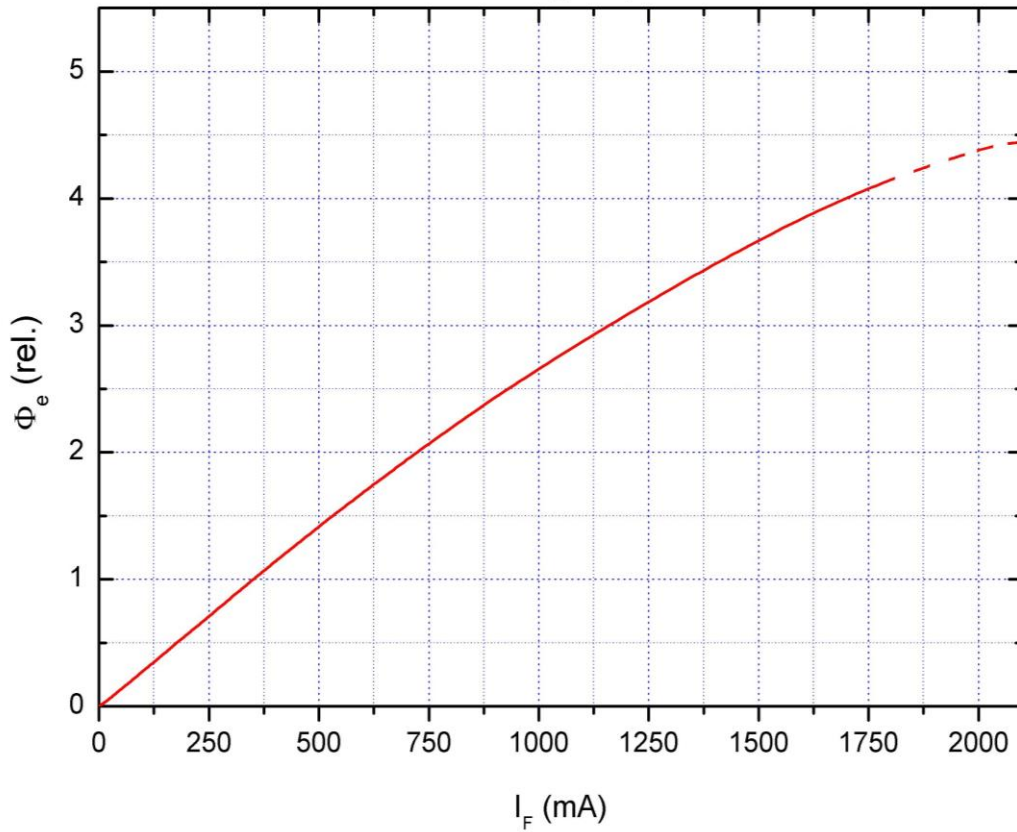
Note: All measurements carried out with JENOPTIK Polymer Systems equipment on blank aluminium heat sink,  $S = 180 \text{ cm}^2$ , passive cooling. Measurement results and curve characteristics obtained with other heat sinks may differ.

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

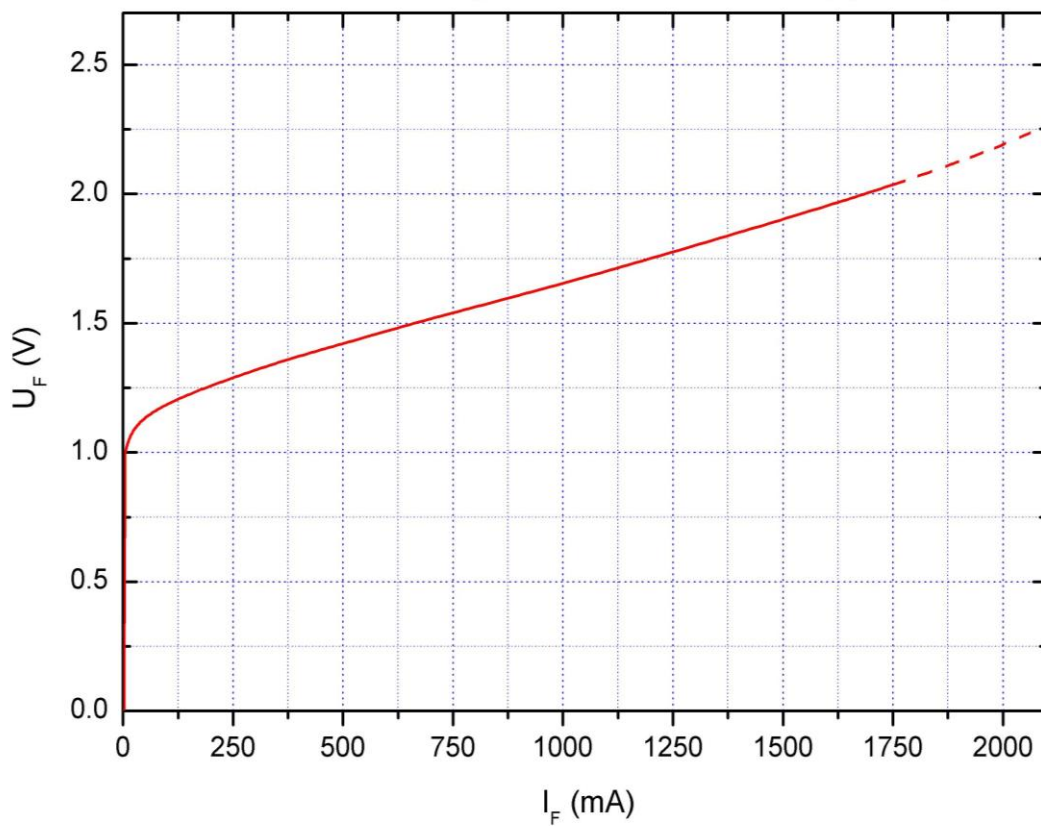


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**Radiant power vs. forward current (typical)**  
normalized to  $\Phi_E @ I_F = 350 \text{ mA}$

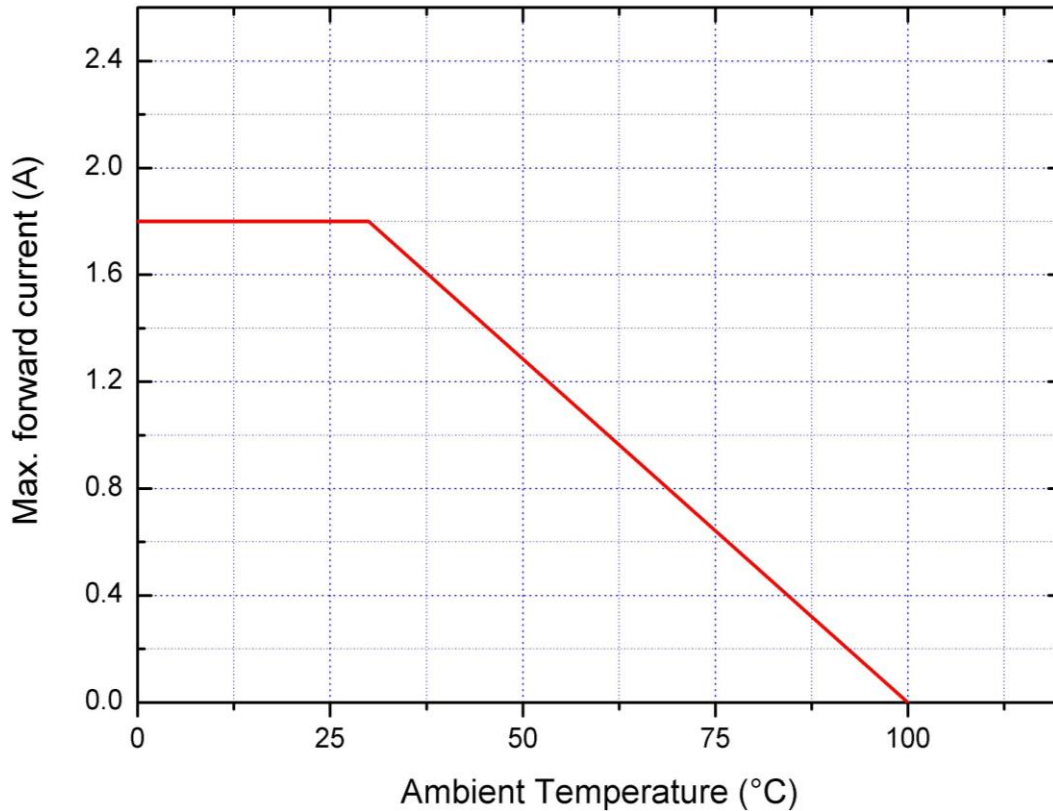


**Forward voltage vs. forward current (typical)**



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**Ambient Temperature vs. maximal forward current**



**Remarks concerning optical radiation safety\***

Up to a forward current of 500 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 dire

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

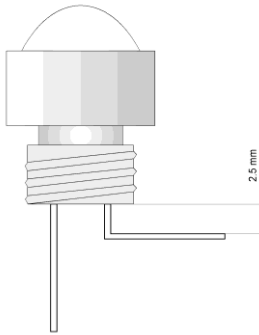
\*Note: Safety classification of an optical component mainly depends on the intended application and the way the component is being used. Furthermore, all statements made to classification are based on calculations and are only valid for this LED as it is.

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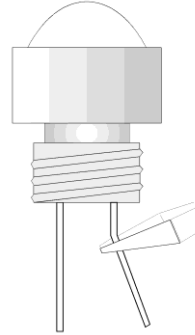
## Handling precautions

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

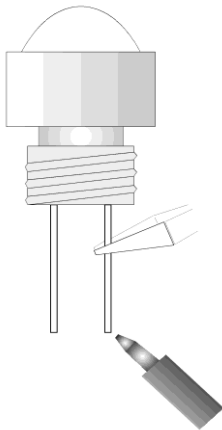
a) The bending point of the lead frame should be located at least 2.5 mm away from the body.



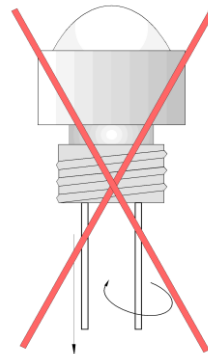
b) While bending, the base of the lead frame has to be fixed with radio pliers or similar.



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**

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