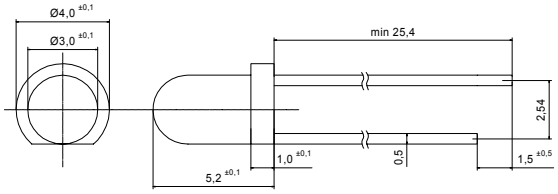
LED - Lamp

ELD-840-325

15.11.2007 rev. 02

Radiation	Type	Technology	Case
Infrared	DDH	AlGaAs/AlGaAs	3 mm plastic lens



Description

High-power, high-speed infrared LED in standard 3 mm housing, small package allows compact design, housing without standoff leads

Note: Special packages with standoff available on request

Applications

Optical communications, safety equipment, automation, optical sensors

Maximum Ratings

T_{amb} = 25°C, unless otherwise specified

Parameter	Test conditions	Symbol	Value	Unit
Forward current (DC)		I_F	100	mA
Peak forward current	(duty=1/100, f=100 kHz)	I_{FM}	1000	mA
Power dissipation		P_D	150	mW
Operating temperature range		T_{amb}	-20 to +85	°C
Storage temperature range		T_{stg}	-30 to +100	°C
Soldering temperature	t ≤ 5 s, 3 mm from case	T_{sd}	260	°C

Optical and Electrical Characteristics

T_{amb} = 25°C, unless otherwise specified

Parameter	Test conditions	Symbol	Min	Typ	Max	Unit
Forward voltage	I_F = 20 mA	V_F		1.4	1.6	V
Forward voltage*	I_F = 100 mA	V_F		1.7		V
Reverse voltage	I_R = 10 µA	V_F	5			V
Radiant power	I_F = 20 mA	Φ_e	5.5	8.5		mW
Radiant power*	I_F = 100 mA	Φ_e		40		mW
Radiant intensity	I_F = 20 mA	I_e	7.5	11		mW/sr
Radiant intensity*	I_F = 100 mA	I_e		50		mW/sr
Peak wavelength	I_F = 20 mA	λ_p	830	840	850	nm
Spectral bandwidth at 50%	I_F = 20 mA	$\Delta\lambda_{0.5}$		35		nm
Viewing angle	I_F = 20 mA	φ		24		deg.
Switching time	I_F = 20 mA	t_r, t_f		70/50		ns

*measured after 30s current flow

Note: All measurements carried out on *EPIGAP* equipment

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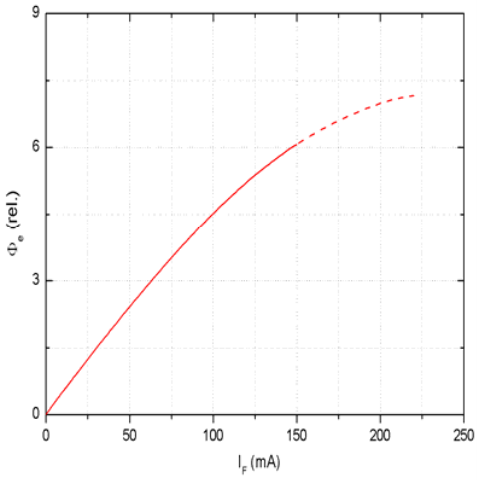
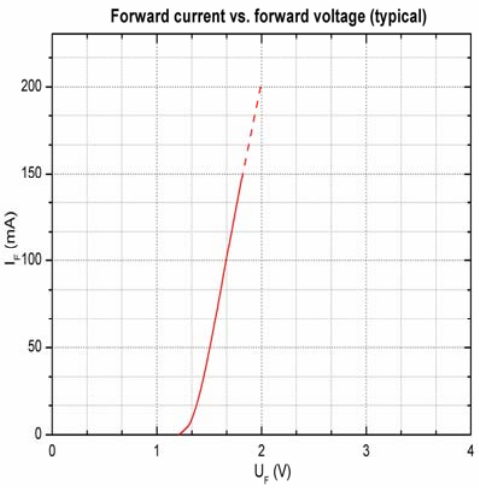
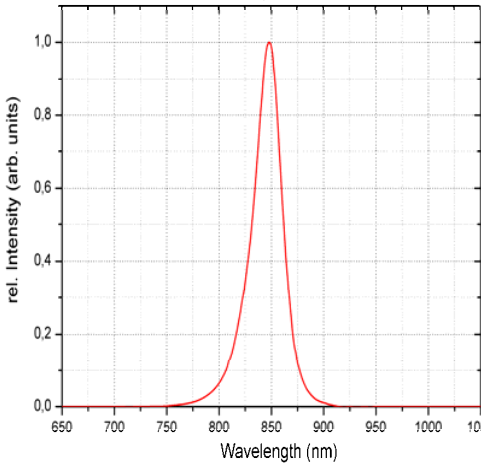
Radiant power vs. forward current (typical)
normalized to Φ_E @ I_F = 20 mA



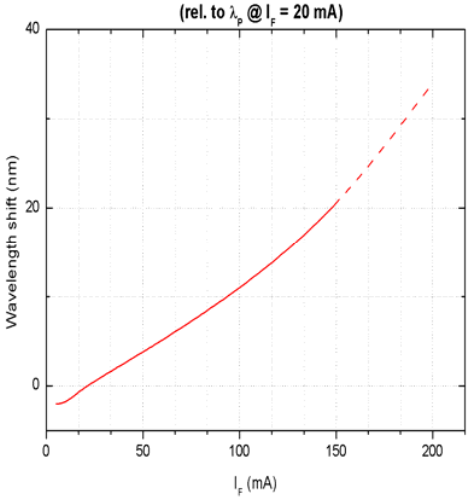
Forward current vs. forward voltage (typical)



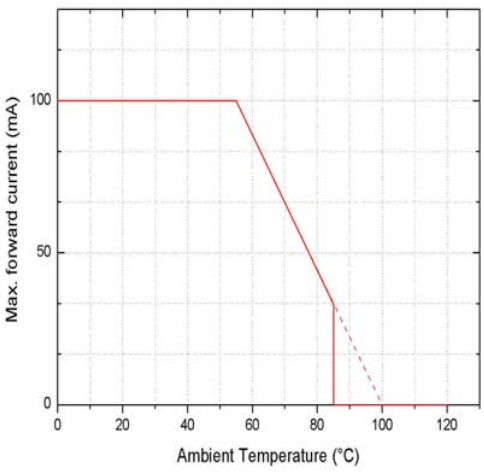
Spectral power distribution (typical)
at I_F = 20 mA



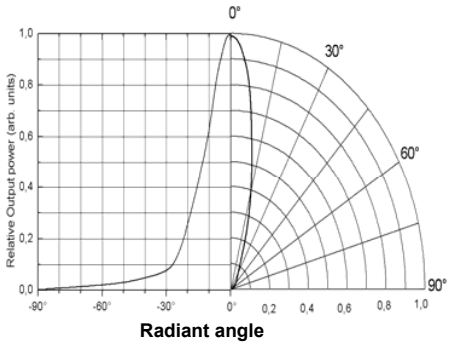
Typical wavelength shift vs. forward current
(rel. to λ_p @ I_F = 20 mA)



Ambient Temperature vs. maximal forward current



Typical radiant pattern



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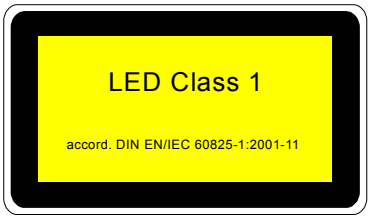
Remarks concerning optical radiation safety*

Up to maximum forward current, 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.

*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.



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