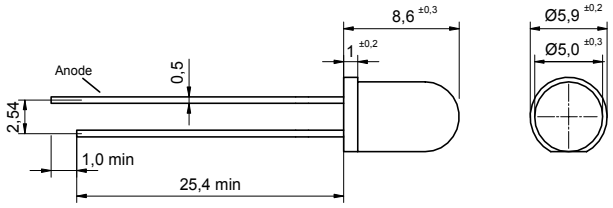
LED - Lamp

ELD-680-524

16.11.2007 rev. 10

Radiation	Type	Technology	Case
Red	DDH	AlGaAs/AlGaAs	5 mm plastic lens



Description

High-power, high-speed deep red LED in standard 5 mm package,with lens for optimal beam forming, housing without standoff leads

Note: Special packages with standoff available on request

Applications

Optical communications, safety equipment, automation

Maximum Ratings

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

Parameter	Test conditions	Symbol	Value	Unit
Forward current (DC)		I_F	50	mA
Peak forward current	($t_P \leq 50$ µs, $t_P/T = 1/2$)	I_{FM}	100	mA
Power dissipation		P_D	150	mW
Operating temperature range		T_{amb}	-20 to +80	°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		1.8	2.2	V
Reverse voltage	I_R = 10 µA	V_R	5			V
Radiant power	I_F = 20 mA	Φ_e	4	6		mW
Radiant power*	I_F = 50 mA	Φ_e		13		mW
Luminous intensity	I_F = 20 mA	I_v	280	400		mcd
Luminous intensity*	I_F = 50 mA	I_v		750		mcd
Peak wavelength	I_F = 20 mA	λ_p	675	685	695	nm
Spectral bandwidth at 50%	I_F = 20 mA	$\Delta\lambda_{0.5}$		25		nm
Viewing angle	I_F = 20 mA	φ		22		deg.
Switching time	I_F = 20 mA	t_r, t_f		40		ns

*measured after 30s current flow

Note: All measurements carried out on *EPIGAP* equipment

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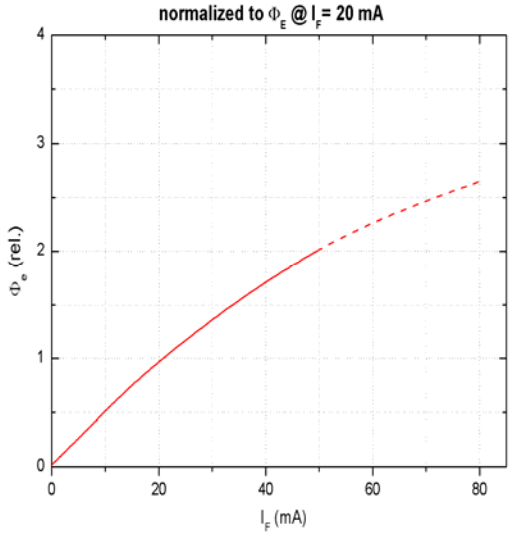
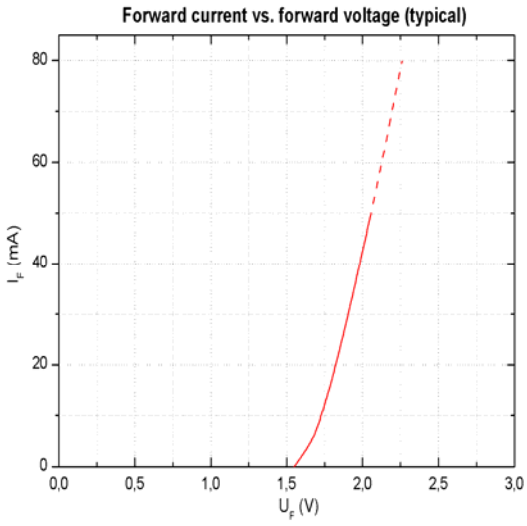
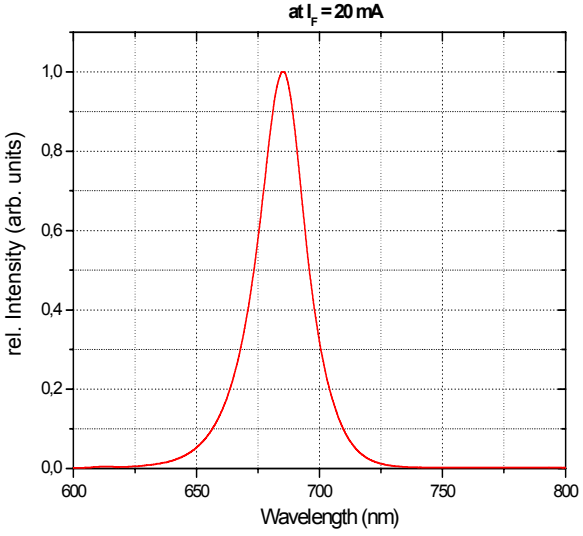
Radiant power vs. forward current (typical)
normalized to Φ_E @ I_F = 20 mA



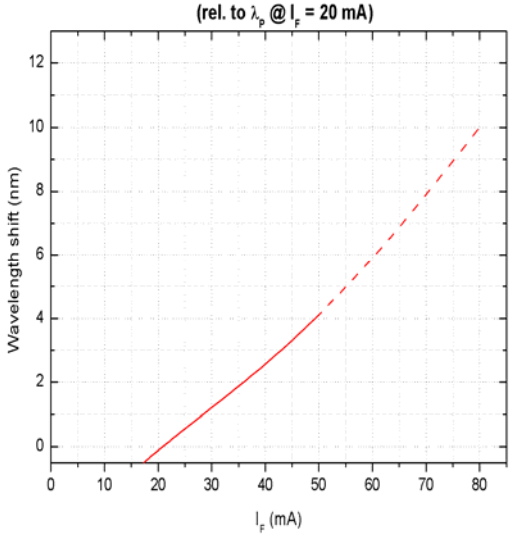
Forward current vs. forward voltage (typical)



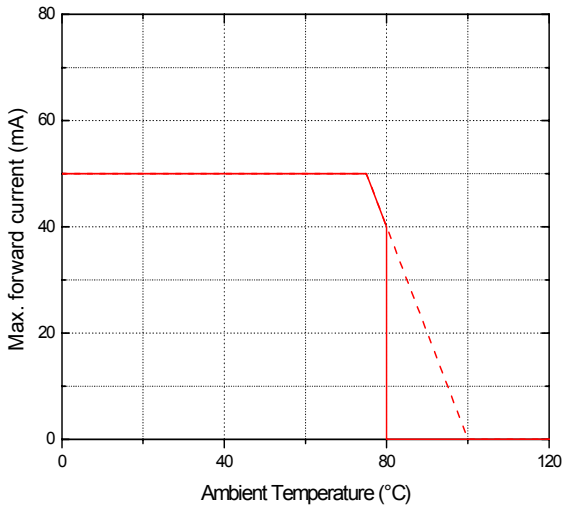
Spectral power distribution (typical)
at I_F = 20 mA



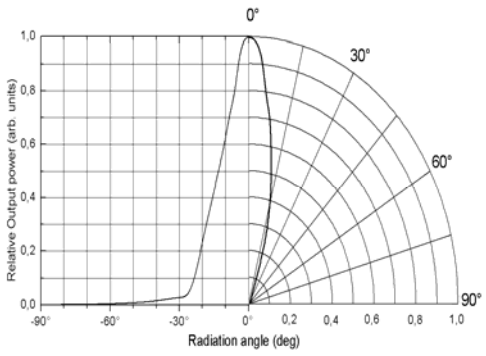
Typical wavelength shift vs. forward current
(rel. to λ_p @ I_F = 20 mA)



Ambient Temperature vs. maximal forward current



Typical radiant pattern



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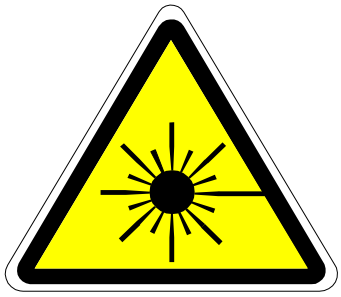
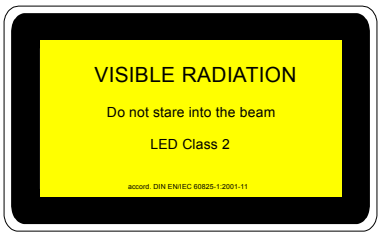
Remarks concerning optical radiation safety*

At maximum forward current and continuous operation, this LED may be classified as LED product *Class 2*, according to standard IEC 60825-1:A2. *Class 2* products emit in the visible region, damaging exposure is usually prevented through avert reactions including blink reflex. It can be expected that these reactions provide sufficient protection under reasonably predictable conditions. This also 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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