LE-0005

High Power 810nm LED

AFONICS

Preliminary specification

Performance Highlights

- Typically 60µW into 50/125µm fibre at I_F=100mA
- Peak wavelength at 810nm
- Bandwidth of 70MHz

LIMITING VALUES	SYMBOL	VALUE	UNITS
Continuous forward current (f<10kHz)	I_F	110	mA
Peak forward current (duty cycle <50%, f>1MHz)	I_{FRM}	180	mA
Reverse voltage	V_{RL}	1.5	V
Operating temperature	T_{amb}	-55 to +125	°C
Storage temperature	T_{stg}	-55 to +125	°C
Soldering temperature 2mm from case for 10s	T_{sld}	260	°C

THERMAL CHARACTERISTICS	SYMBOL	VALUE	UNITS
Thermal resistance - infinite heat sink	R_{THJC}	100 (typ)	ºC/W
Thermal resistance - no heat sink	R_{THJA}	400 (typ)	ºC/W
Optical power temperature coefficient	dP/dT_j	-0.4 (typ)	%/ºC
Wavelength temperature coefficient	$d\lambda/dT_j$	0.3 (typ)	nm/ºC

OPTICAL/ELECTRICAL CHARACTERISTICS	SYMBOL	MIN	TYP	MAX	UNITS	TEST CONDITION
Power (50/125µm NA 0.20) (62.5/125µm NA 0.27) (100/140µm NA 0.29) (200/230µm NA 0.37)	P_F	TBA	60 150 600 2000		µW	I_F = 100mA DC
Peak emission wavelength	λ_P	790	810	830	nm	I_F = 100 mA
Spectral bandwidth (FWHM)	$\Delta\lambda$		50		nm	I_F = 100 mA
Rise / fall time (10% to 90%)	t_{Lr} / t_{Lf}		5	8	ns	I_F = 100 mA
Bandwidth	f_C		70		MHz	I_F = 100 mA
Forward voltage	V_F		2.2	2.4	V	I_F = 100 mA
Capacitance	C		250		pF	V_R = 0V, f = 1MHz
Reverse current	I_R			20	µA	V_R = 2V

All values apply at a temperature of 25°C

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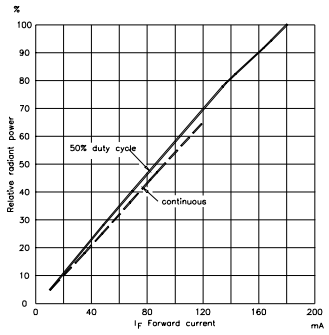
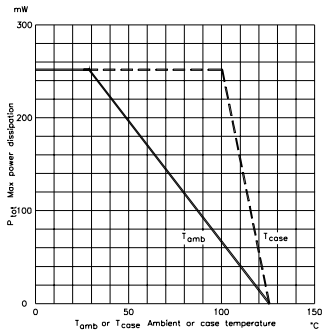
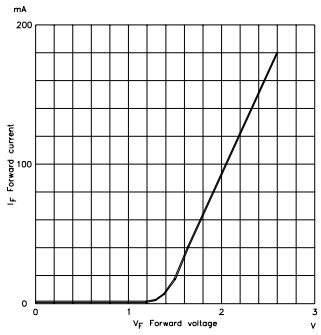
GRAPHS SHOWING TYPICAL CHARACTERISTICS



Relative radiant power
vs forward current (heat sinked)



Maximum power dissipation
vs ambient or case temperature



Forward current
vs forward voltage

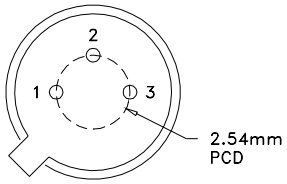
PINOUT DETAILS

1 = Cathode

2 = Case

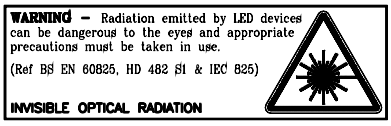
3 = Anode

Pin Length = 14mm



REAR VIEW

INTERNAL CIRCUIT



NOTES: The device is very susceptible to damage by electrostatic discharge.

NOTES:

1) Standard pin orientation aligns pin 2 with the receptacle keyway unless a custom orientation is requested.
2) The heatsink tab is removed to allow alignment in some receptacles.
3) Usable pin length will vary dependant on choice of receptacle. If pin length is important please contact Afonics before placing an order.

