Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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LITEON®
OPTOELECTRONICS

IR Emitter and Detector

Product Data Sheet

HSDL-4250

Spec No.: DS50-2008-0023

Effective Date: 06/18/2013

Revision: B

LITE-ON DCC

RELEASE

BNS-OD-FC001/A4

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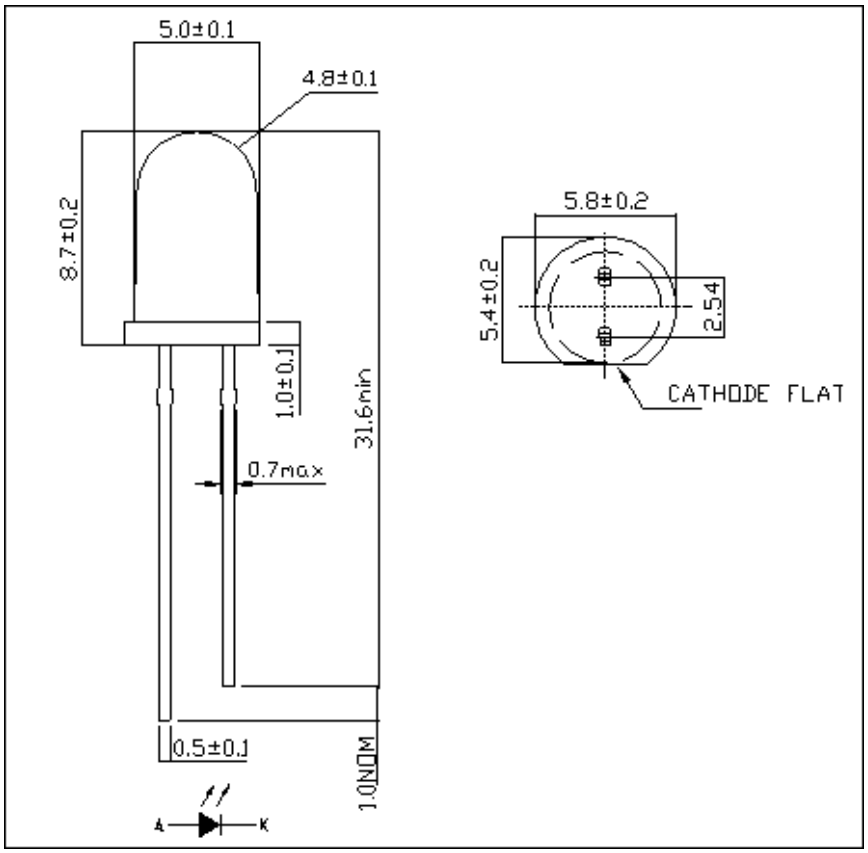
REV. A, Apr, 2013

FEATURES

* High power AlGaAs LED technology
* T-1 3/4 Package
* 870 nm Wavelength
* High speed: 40ns Rise times
*Low Forward Voltage
*Low forward voltage for series operation

* Applications
High Speed IR communications
Portable Infrared Instruments
Consumer Electronics
(Optical mouse, Infrared Remote Controllers ect)
High Speed Infrared Comunications
(IR LANs , IR Moldens , IR Dongles , etc)

PACKAGE DIMENSIONS



NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25mm(.010") unless otherwise noted.
3. Protruded resin under flange is 1.5mm(.059") max.
4. Lead spacing is measured where the leads emerge from the package.
5. Specifications are subject to change without notice.

ABSOLUTE MAXIMUM RATINGS AT T_A=25℃

PARAMETER	Symbol	MIN	MAX	UNIT	Reference
Forward Current	I_{FDC}		100	mA	[1]
Peak Forward Current	I_{FPK}		500	mA	Fig 3 Duty Factor=20% Pulse Width=100us
Power Dissipation	P_{DISS}		190	mW	
Reverse Voltage	V_R	5		V	IR=100uA
Storage Temperature	T_S	-40	100	℃	
LED Junction Temperature	T_J		110	℃	
Lead Soldering Temperature [1.6mm(.063") From Body]			260 for 5 seconds	℃	

Notes:
1.Derate as shown in Figure 6.

Recommended Operating Conditions

PARAMETER	Symbol	MIN	MAX	UNIT	Reference
Operating Temperature	T_O	-40	85	℃	

ELECTRICAL CHARACTERISTICS AT 25℃

PARAMETER	Symbol	MIN.	TYP.	MAX.	UNIT	TEST CONDITION	Reference
Forward Voltage	V_F		1.4	1.6	V	I_{FDC} = 20mA	Fig.2
			1.5	1.9	V	I_{FDC} = 100mA	Fig.3
Forward Voltage Temperature Coefficient	△V/△T		-1.44		mV/℃	I_{FDC} = 100mA	Fig.4
Series Resistance	R_S		2.5		0hms	I_{FDC} = 100mA	
Diode Capacitance	C_O		75		pF	0 V,1 MHz	
Reverse Voltage	V_R	2	20		V	I_R=100 μ A	
Thermal Resistance, Junction to Pin	R θ_{JA}		300		℃/W		

OPTICAL CHARACTERISTICS AT TA=25℃

PARAMETER	Symbol	MIN.	TYP.	MAX.	UNIT	Test condition	Reference
Radiant On-Axis Intensity	I_E	124	180		Mw/Sr	I_{FDC} = 100mA	Fig.5
Radiant On-Axis Intensity Temperature Coefficient	$\triangle I_E/\triangle T$	-	-0.43	-	%/℃	I_{FDC} = 100mA	
Viewing Angle	$2\theta_{1/2}$	-	15	-	deg	I_{FDC} = 50mA	Fig.7
Peak Wavelength	λ pk	-	870	-	nm	I_{FDC} = 50mA	Fig.1
Peak Wavelength Temperature Coefficient	$\triangle\lambda/\triangle T$	-	0.22	-	nm/℃	I_{FDC} = 100mA	
Spectral Width-at FWHM	$\triangle\lambda$		45	-	nm	I_{FDC} = 50mA	Fig.1
Optical Rise and all Times, 10%-90%	T_r/ T_f		40	-	ns	I_{FDC} = 500 mA Duty Ratio=20% Pulse Width=125ns	

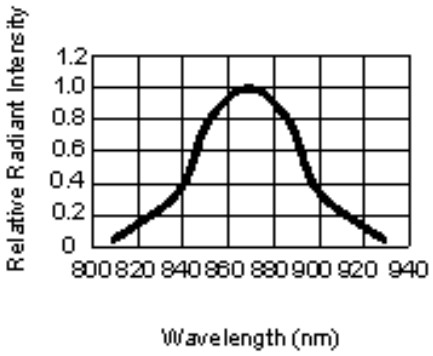


FIG.1 Relative Radiant Intensity VS Wavelength

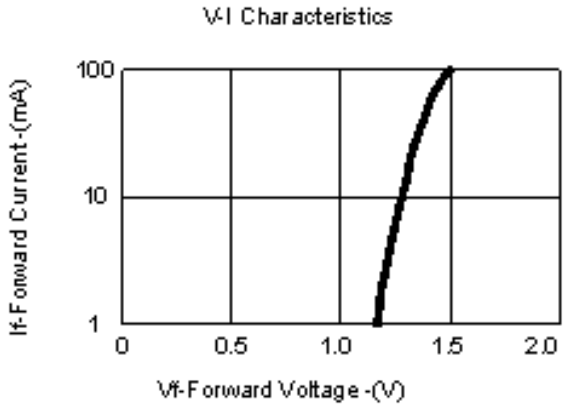


FIG.2 DC Forward Current VS. Forward Voltage

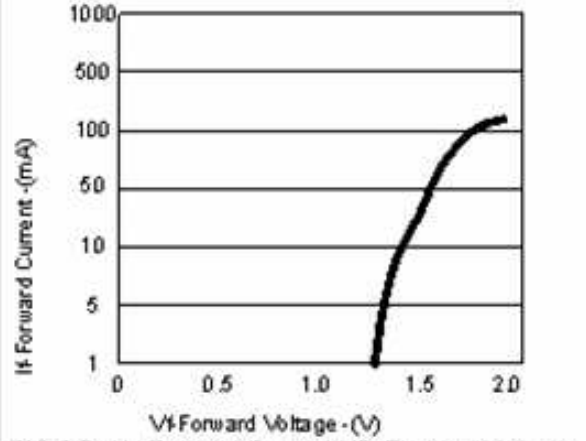


FIG.3 Peak Forward Current VS. Forward Voltage

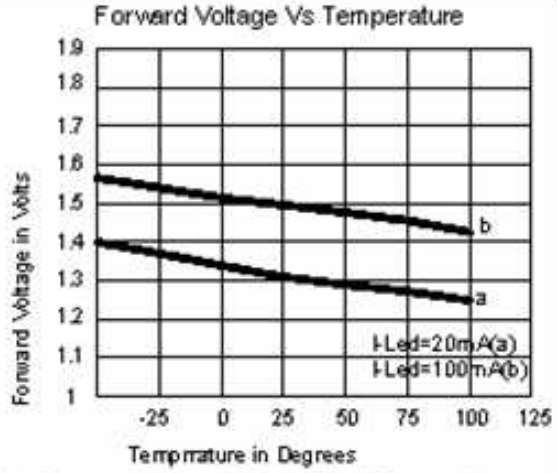


FIG.4 Forward Voltage VS. Ambient Temperature

Forward Current Vs Relative Radiant Intensity

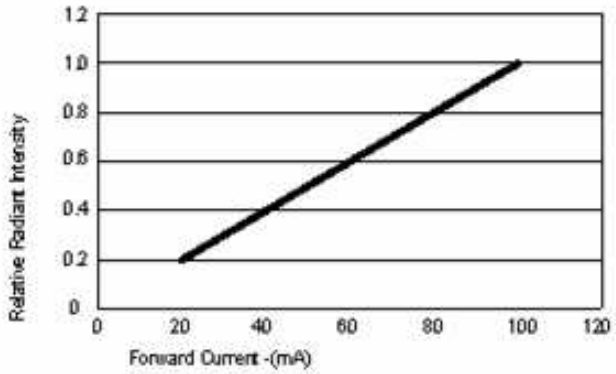


FIG.5 Relative Radiant Intensity vs DC Forward Current

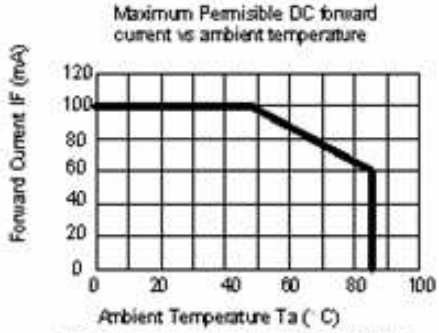


FIG.6 DC FORWARD CURRENT VS.
AMBIENT TEMPERATURE dERATED (Based on TJMAX=110°C)

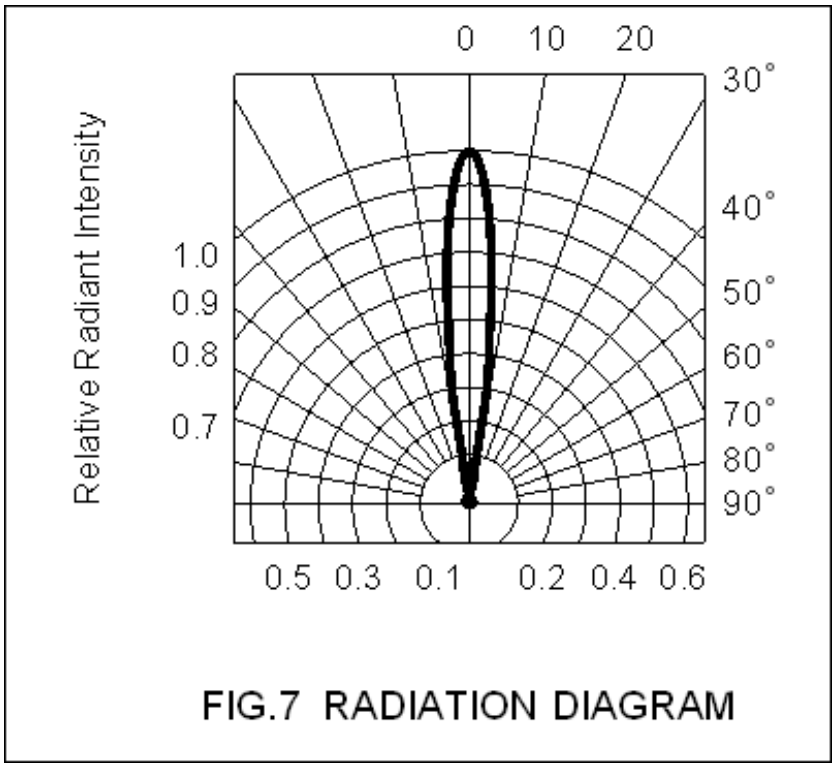


FIG.7 RADIATION DIAGRAM