阅读申明

1.本站收集的数据手册和产品资料都来自互联网，版权归原作者所有。如读者和版权方有任何异议请及时告之，我们将妥善解决。
2.本站提供的中文数据手册是英文数据手册的中文翻译，其目的是协助用户阅读，该译文无法自动跟随原稿更新，同时也可能存在翻译上的不当。建议读者以英文原稿为参考以便获得更精准的信息。
3.本站提供的产品资料，来自厂商的技术支持或者使用者的心得体会等，其内容可能存在描叙上的差异，建议读者做出适当判断。
4.如需与我们联系，请发邮件到marketing@iczoom.com，主题请标有“数据手册”字样。

Read Statement

1. The datasheets and other product information on the site are all from network reference or other public materials, and the copyright belongs to the original author and original published source. If readers and copyright owners have any objections, please contact us and we will deal with it in a timely manner.

2. The Chinese datasheets provided on the website is a Chinese translation of the English datasheets. Its purpose is for reader’ s learning exchange only and do not involve commercial purposes. The translation cannot be automatically updated with the original manuscript, and there may also be improper translations. Readers are advised to use the English manuscript as a reference for more accurate information.

3. All product information provided on the website refer to solutions from manufacturers’ technical support or users the contents may have differences in description, and readers are advised to take the original article as the standard.

4. If you have any questions, please contact us at marketing@iczoom.com and mark the subject with “Datasheets”.

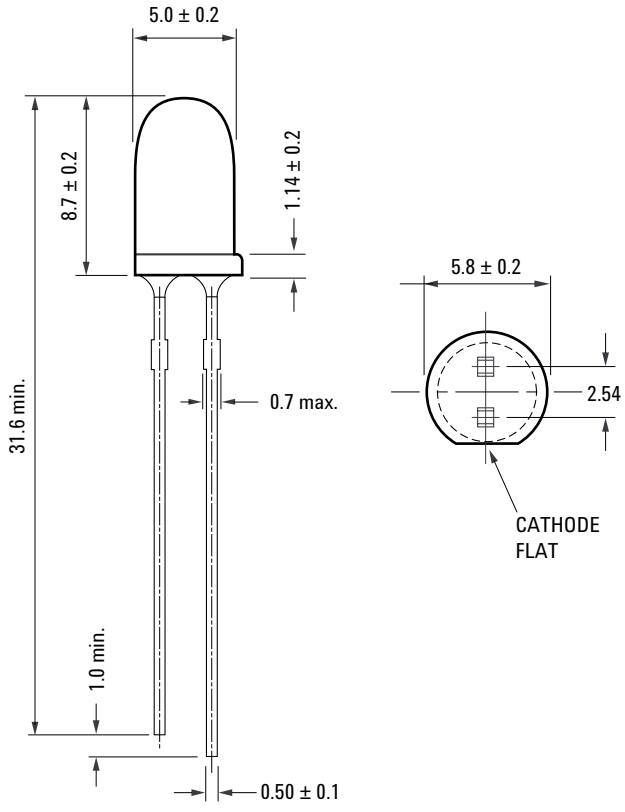
HSDL-4271

High-Performance T-1¾ (5mm) AlGaAs Infrared (940nm) Lamp

Datasheet

Description

The HSDL-4271 Infrared emitter was designed for applications that require high power and low forward voltage. It utilizes Aluminum Galium Arsenide (AlGaAs) LED technology and is optimized for efficiency at emission wavelengths of 940 nm. The material used produces high radiant efficiency over a wide range of currents. The emitter is packaged in clear T-1¾ (5mm) package.



Features

- **High Power AlGaAs LED Technology**
- **940 nm Wavelength**
- **T-1¾ Package**
- **Low Cost**
- **Low Forward Voltage: 1.2V at 20mA**

Applications

- **Industrial Infrared Equipments and Applications (Smoke Detectors etc)**
- **Consumer Electronics (Infrared Remote Controller etc)**
- **Infrared spotlight for cameras**
- **Discrete Interrupters**
- **Infrared source for optical counters and card readers**

Part Number	Lead Form	Shipping Option
HSDL-4271	Straight	Bulk

Absolute Maximum Ratings at 25°C

Parameter	Symbol	Minimum	Maximum	Unit	Reference
Peak Forward Current	I_{FPK}	-	350	mA	Duty cycle = 20% period = 200us
Forward Current	I_{FDC}	-	100	mA	
Power Dissipation	P_{DISS}	-	200	mW	
Reverse Voltage	V_R	5	-	V	I_R=100uA
Storage Temperature	T_S	-40	100	°C	
LED Junction Temperature	T_J		110	°C	
Lead Soldering Temperature			260 for 5 sec	°C	

Notes:
1. Derate as shown in Figure 6.

Recommended Operating Conditions

Parameter	Symbol	Min	Max	Unit	Reference
Operating Temperature	T_O	-40	85	°C	

Electrical Characteristics at 25°C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition	Reference
Forward Voltage	V_F	-	1.2 1.4	1.5 1.7	V	I_{FDC}=20mA I_{FDC}=100mA	Figure 2 Figure 3
Forward Voltage Temperature Coefficient	$\Delta V/\Delta T$	-	-1.0	-	mV/°C	I_{FDC}=100mA	Figure 4
Series Resistance	R_S	-	2	-	Ohms	I_{FDC}=100mA	
Diode Capacitance	C_O	-	25	-	pF	V_R=0V, f=1MHz	
Thermal Resistance, Junction to Ambient	$R\theta_{ja}$	-	310	-	°C/W		

Optical Characteristics at 25°C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition	Reference
Radiant On-Axis Intensity	I_E	25	50	-	mW/Sr	I_{LED}=100mA	Figure 4
Radiant On-Axis Intensity Temperature Coefficient	$\Delta I_E/\Delta T$	- -	-0.3 -0.5	-	%/°C	I_{LED}=100mA	
Viewing Angle	$2\theta_{1/2}$	-	30	-	°		Figure 7
Peak Wavelength	λ_{pk}	-	940	-	nm		Figure 1
Spectral Width	$\Delta\lambda$	-	50	-	nm	I_{LED}=20mA	Figure 1
Optical Rise and Fall Time	t_r/t_f	-	1.3	-	us	I_{LED}=100mA	

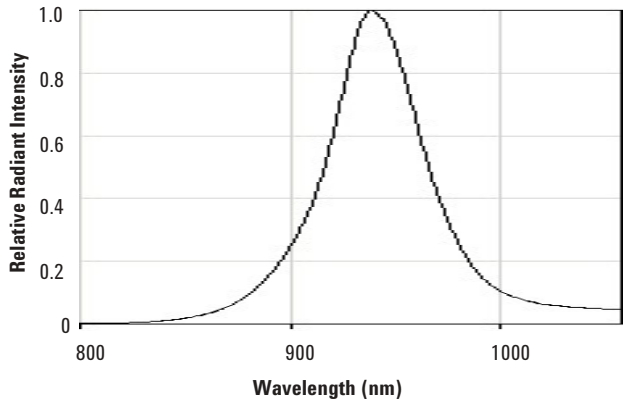


Figure 1. Relative Radiant Intensity vs. Wavelength

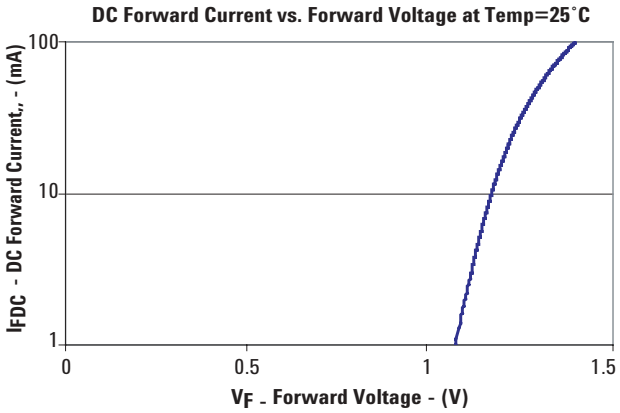


Figure 2. DC Forward Current vs. Forward Voltage

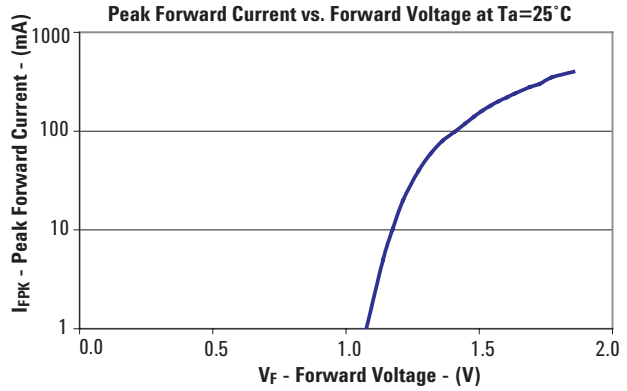


Figure 3. Peak Forward Current vs. Forward Voltage

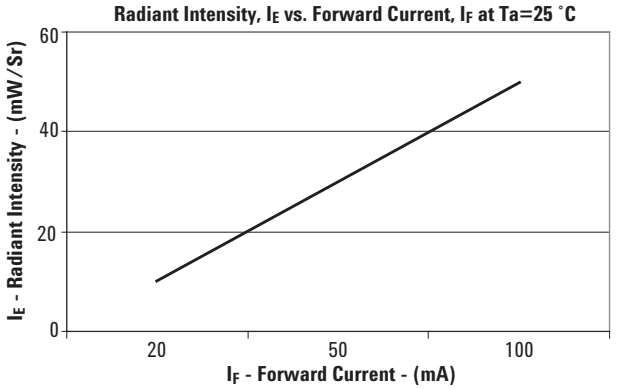


Figure 4. Radiant Intensity vs. DC Forward Current

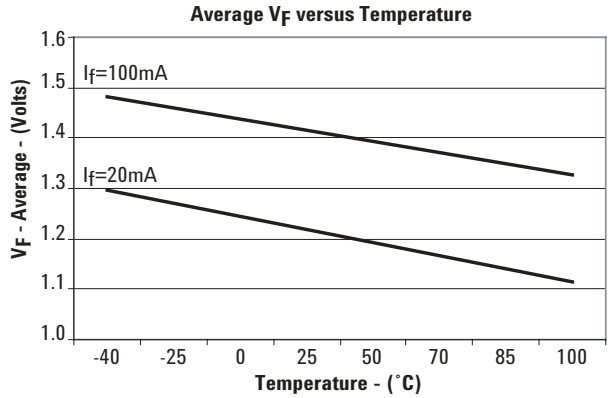


Figure 5. Forward Voltage vs. Ambient Temperature

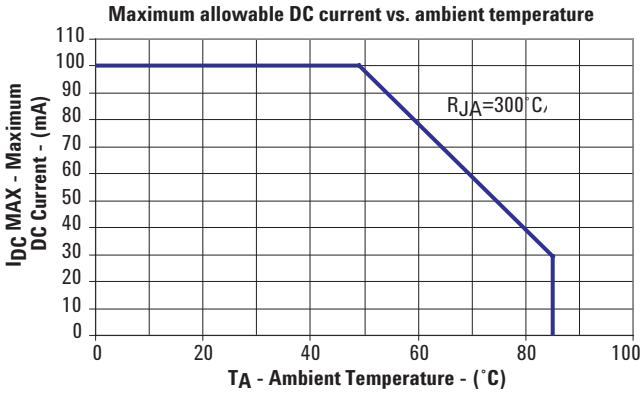


Figure 6: DC Forward Current vs. Ambient Temperature Derated Based on T_{JMAX}=110°C

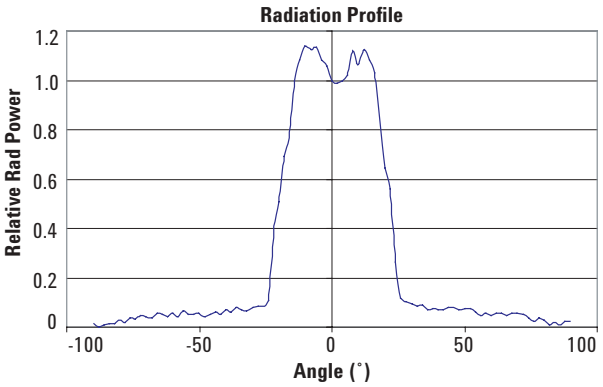


Figure 7. Radiant Intensity vs. Angular Displacement