



SPECIFICATION FOR LED LAMP

PART NO. : LT9F13-AH-UHC1

HIGH POWER LED

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HIGH POWER LED

PART NO. : LT9F13-AH-UHC1

Features

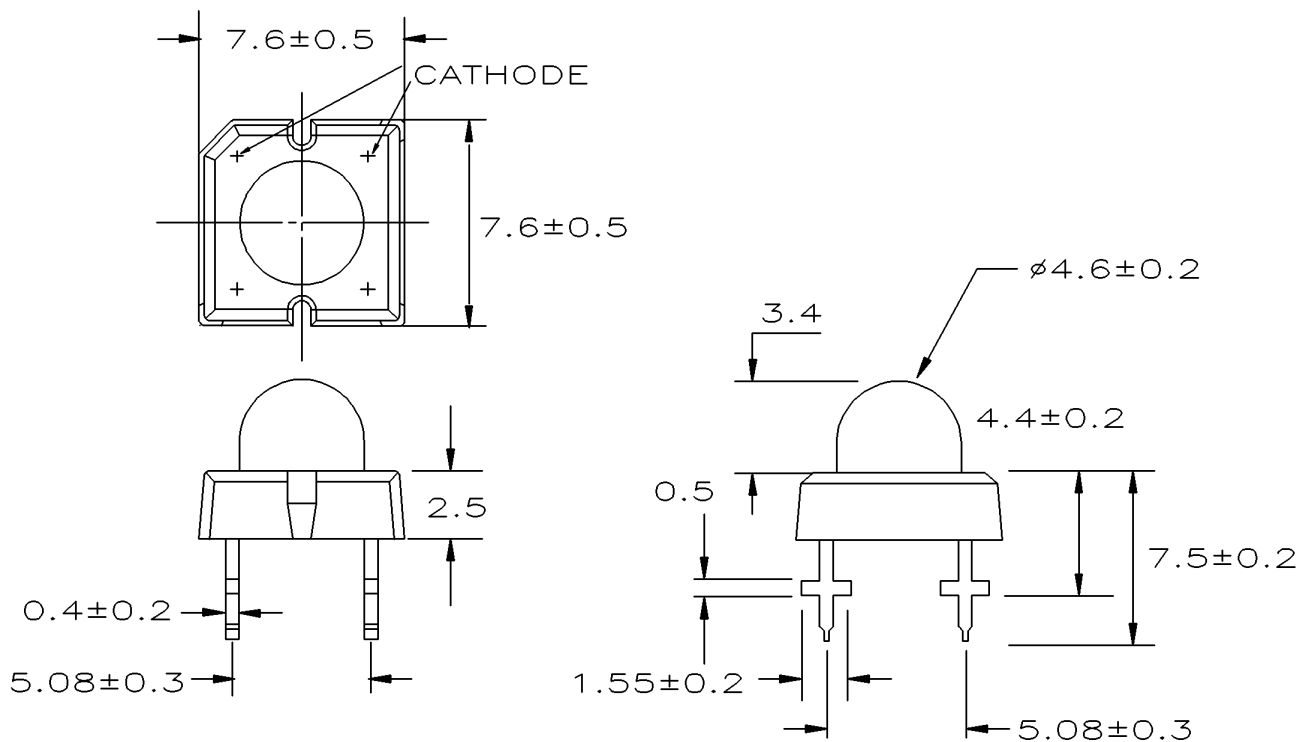
**High Luminous Output at
Lower Current Levels**

- * Meets SAE/ECE/JIS Automotive Colors
- * Packaged in tubes for automatic insertion
- * Ideal for Electronic Signs and Signals
- * Can replace HPWA(T)-D in some applications

Description

The hyper red lamps are made with AlGaInP chips and water clear epoxy resin.

Package Dimensions



Notes :

1. All dimensions are in millimeters.
2. Protruded resin under flange is 1.0mm max.
3. Tolerance is ± 0.25 mm unless otherwise noted.

Part No.	Led Chip		Lens Color
	Material	Emitting Color	
LT9F13-AH-UHC1	AlGaInP	Hyper Red	Water Clear



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PART NO. : LT9F13-AH-UHC1

Page : 2/4

Absolute Maximum Ratings at Ta=25°C :

Parameter	Symbol	Rating	Unit
Power Dissipation	Pd	96	mW
Reverse Voltage	Vr	4	V
D.C. Forward Current	If	40	mA
Peak Current (1/10 Duty Cycle,0.1ms pulse width)	If (Peak)	100	mA
Operating Temperature Range	Topr	-40 to +85	°C
Storage Temperature Range	Tstg	-40 to +100	°C
Lead Soldering Temp. (1.6mm from body) for 5 seconds		260	°C

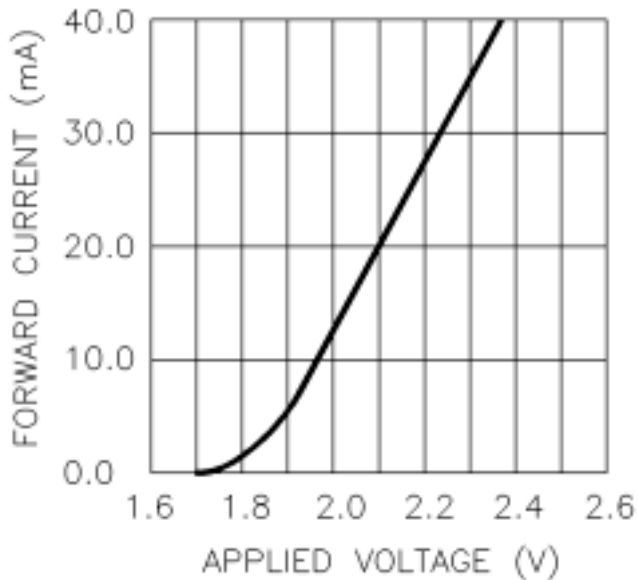
Electrical and Optical Characteristics :

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	Iv	If=20mA	2200	3800		mcd
Forward Voltage	Vf	If=20mA		2.1	2.4	V
Peak Wavelength	λp	If=20mA		632		nm
Dominant Wavelength	λd	If=20mA		625		nm
Reverse Current	Ir	Vr=4V			100	μA
Viewing Angle	$2\theta 1/2$	If=20mA		20		deg
Spectrum Line Halfwidth	$\Delta \lambda$	If=20mA		20		nm

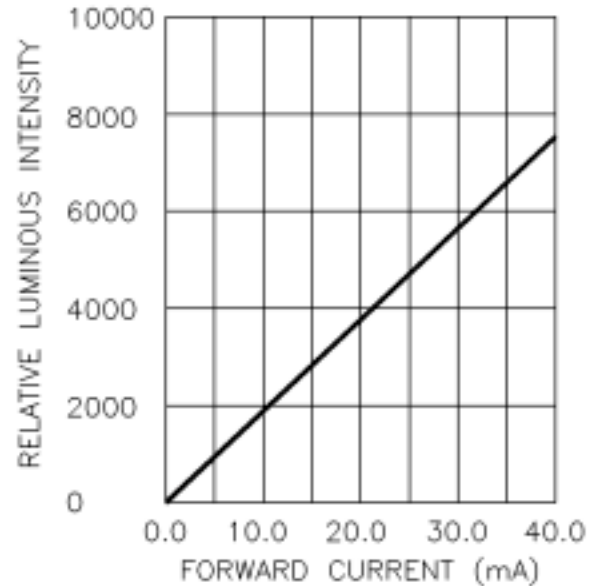
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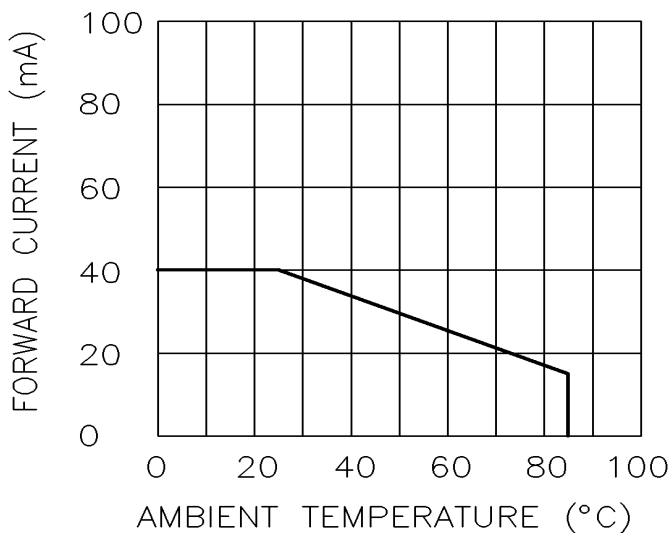
Typical Electrical / Optical Characteristics Curves :



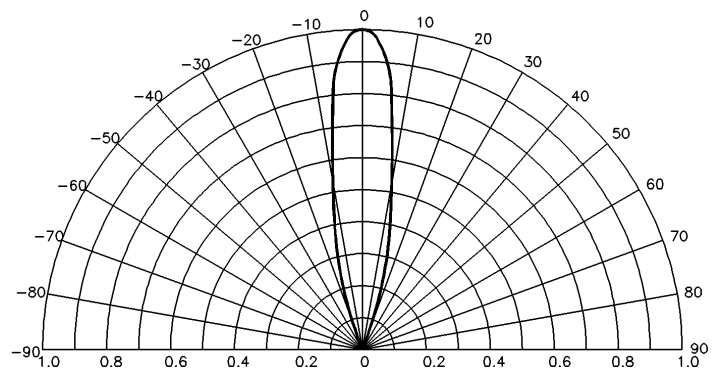
Forward Current vs. Forward Voltage



Forward Current vs. Relative Luminous Intensity



Ambient Temperature vs. Forward Current



Radiation Diagram



HIGH POWER LED

PART NO. : LT9F13-AH-UHC1

Page : 4/4

Reliability Test Method :

Test Item	Test Condition	Duration Time
Operation Life	If=20mA / Ta=25°C	168 hrs
Storage at High Temperature	Ta=100°C	168 hrs
Storage at Low Temperature	Ta=-40°C	168 hrs
Storage at High Temperature/High Humidity	Ta=85°C / RH=85%	168 hrs
Operating at High Temperature	Ta=85°C / If=20mA	168 hrs
Operating at Low Temperature	Ta=-25°C / If=20mA	168 hrs
Thermal Shock	Ta/T=100°C/30min~ - 40°C/30min	10 cycles
Solderability	Tsol=260°C	5 sec

Criteria for Judging The Damage :

Item	Symbol	Test Condition	Criteria for Judgment	
			Min.	Max.
Forward Voltage	Vf	If=20mA	---	Initial Data x1.1
Reverse Current	Ir	Vr=4V	---	100 μ A
Luminous Intensity	Iv	If=20mA	Initial Data x0.8	---