

Red Solid State T-1 (3 mm) Lamps

Technical Data

SOLID STATE
LAMPS

Features

- Wide Viewing Angle
- Small Size T-1 Diameter 3.18 mm (0.125")
- IC Compatible
- Reliable and Rugged

Description

The HLMP-1000 is a series of Gallium Arsenide Phosphide Light Emitting Diodes designed for applications where space is at a premium, such as in high density arrays.

The HLMP-1000 series is available in three lens configurations.

HLMP-1000 – Red Diffused lens provides excellent on-off contrast ratio, high axial luminous intensity, and wide viewing angle.

HLMP-100X Series

HLMP-1071

HLMP-1080

HLMP-120X Series

HLMP-1080 – Same as HLMP-1000, but untinted diffused to mask red color in the "off" condition.

HLMP-1071/-1201 – Untinted non-diffused plastic lens provides a point source. Useful when illuminating external lens, annunciators, or photo-detectors.

Package Dimensions

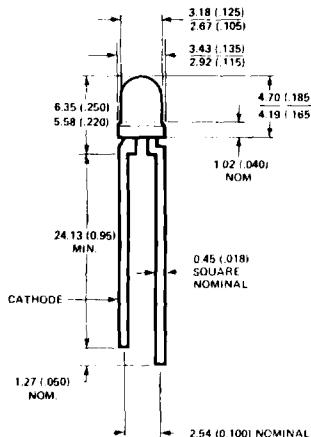


Figure A

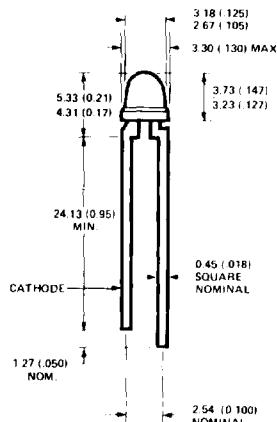


Figure B

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES (INCHES)
2. AN EPOXY MENISCUS MAY EXTEND ABOUT 1mm (.040") DOWN THE LEADS

Selection Guide

Part Number HLMP-	Package & Lens Type	L _v (mcd) @ 20 mA		Typical Viewing Angle 20ns
		Min.	Typ.	
1000	A-Tinted Diffused	0.5	1.0	60°
1002	A-Tinted Diffused	1.5	2.5	60°
1080	A-Untinted Diffused	0.5	1.5	60°
1071	A-Untinted Non-Diffused	1.0	2.0	45°
1200	B-Untinted Non-Diffused	0.5	1.0	55°
1201	B-Untinted Non-Diffused	1.5	2.5	55°

Absolute Maximum Ratings at T_A = 25°C

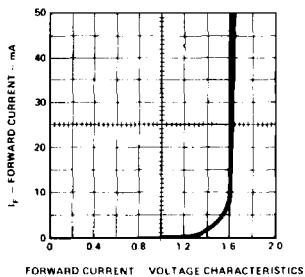
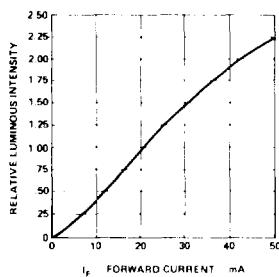
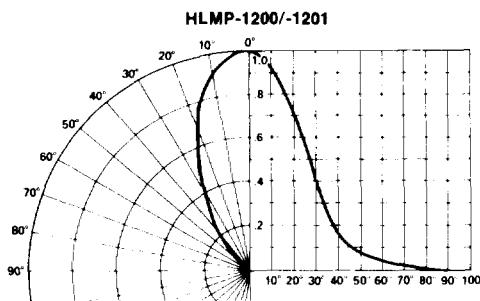
Parameter	1000 Series	Units
Power Dissipation	100	mW
DC Forward Current ^[1]	50	mA
Average Forward Current	50	mA
Peak Operating Forward Current	1000	mA
Reverse Voltage (I _R = 100 μA)	5	V
Transient Forward Current ^[1] (10 μs Pulse)	2000	mA
LED Junction Temperature	110	°C
Operating and Storage Temperature Range	-55 to +100°C	
Lead Soldering Temperature (1.6 mm [0.063 in.] below package base)	260°C for 5 seconds	

Note:

1. Derate linearly from 50°C at 0.2 mA/°C.

Electrical Characteristics at $T_A = 25^\circ\text{C}$

Symbol	Description	Min.	Typ.	Max.	Units	Test Conditions
λ_{PEAK}	Peak Wavelength		655		nm	Measurement at Peak
λ_d	Dominant Wavelength		648		nm	
$\Delta\lambda^{1/2}$	Spectral Line Halfwidth		24		nm	
τ_s	Speed of Response		10		ns	
C	Capacitance		100		pF	$V_F = 0, f = 1 \text{ MHz}$
$R_{\text{J-PIN}}$	Thermal Resistance		290		$^\circ\text{C/W}$	Junction to Cathode Lead
V_F	Forward Voltage	1.4	1.6	2.0	V	$I_F = 20 \text{ mA}$
V_R	Reverse Breakdown Voltage	5			V	$I_R = 100 \mu\text{A}$

**Figure 1. Forward Current vs. Voltage Characteristic.****Figure 2. Luminous Intensity vs. Forward Current (I_F).****Figure 3. Typical Relative Luminous Intensity vs. Angular Displacement.**

HLMP-1000/-1002/-1080

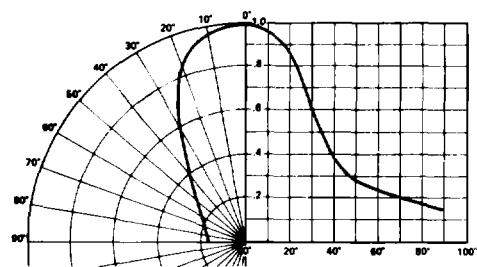


Figure 4. Relative Luminous Intensity vs. Angular Displacement.

HLMP-1071

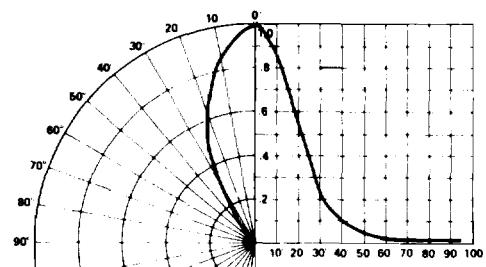


Figure 5. Relative Luminous Intensity vs. Angular Displacement.