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With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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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# T-1 3/4 (5 mm) SOLID STATE LAMPS

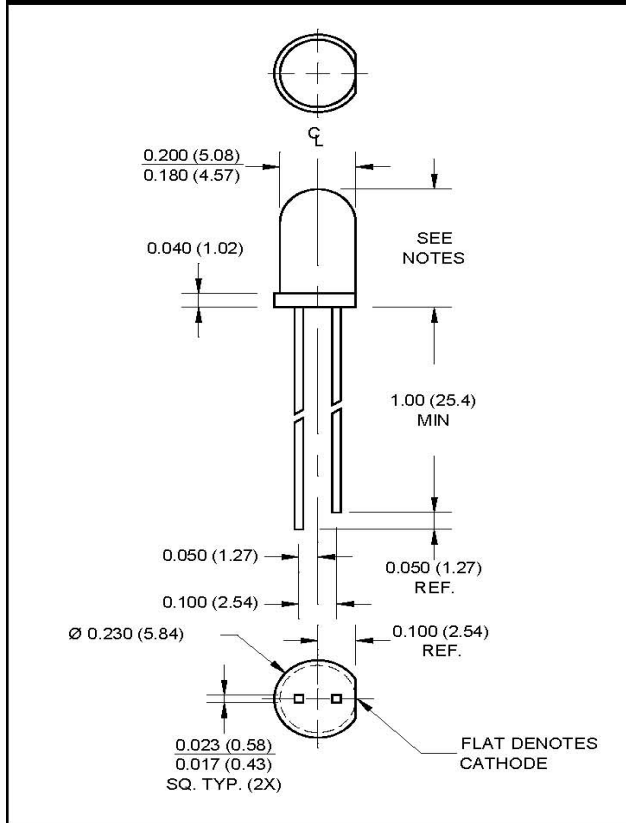
HIGH EFF. RED  
HIGH EFF. RED

HLMP-3300  
HLMP-3301

HIGH EFF. RED  
HIGH EFF. RED  
STANDARD RED

HLMP-3315  
HLMP-3316  
FLV110

## PACKAGE DIMENSIONS



## FEATURES

- Popular, general purpose lamps
- Wide and narrow viewing angle devices for direct view or backlighting
- Solid state reliability
- Sturdy leads for easy assembly



## DESCRIPTION

The HLMP-33XX series consists of high efficiency red T-1 3/4 lamps with a viewing angle of 35° or 65°. FLV110 is a low profile standard red T-1 3/4 lamp with a diffused lens, providing a viewing angle of 70°.

## NOTES:

1. ALL DIMENSIONS ARE IN INCHES (mm).
2. TOLERANCES ARE  $\pm 0.010$ " INCH UNLESS SPECIFIED.
3. AN EPOXY MENISCUS MAY EXTEND ABOUT .040" (1 mm) DOWN THE LEADS.
4. DIMENSIONS X.  
PACKAGE HEIGHT HLMP = .330 (8.38)/.350 (8.89)  
FLV = .275 (6.98)/.295 (7.49)
5. FLV FLANGE HEIGHT = 0.040 (1.02)  
0.060 (1.53)

## ABSOLUTE MAXIMUM RATING (T<sub>A</sub> = 25°C)

Parameter	HLMP33XX	FLV110	UNITS
Power Dissipation	135	135	mW
Average Forward Current	30	30	mA
Peak Forward Current (1 μS pulsewidth, 0.3% duty cycle)(FLV110 1 amp)	90	90	mA
Reverse Voltage	5	5	V
Lead Soldering Time at 260° C	5	5	sec
Operating Temperature	-55 to +100	-55 to +100	°C
Storage Temperature	-55 to +100	-55 to +100	°C



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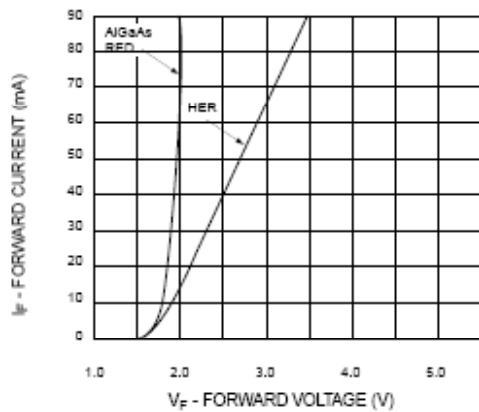
<b>ELECTRICAL / OPTICAL CHARACTERISTICS</b> ( $T_A = 25^\circ\text{C}$ )						
Part Number	HLMP-3300	HLMP-3301	HLMP-3315	HLMP-3316	FLV110	Condition
Luminous Intensity (mcd)						$I_F = 10\text{mA}$
Minimum	2.0	4.0	12	20	0.8*	
Typical	3.5	7.0	18	35	3.0*	
Forward Voltage (V)						$I_F = 10\text{mA}$
Maximum	3.0	3.0	3.0	3.0	2.0	
Typical	2.2	2.2	2.2	2.2	1.6	
Peak Wavelength (nm)	635	635	635	635	660	$I_F = 10\text{mA}$
Reverse Voltage (V)	5	5	5	5	5	$I_R = 100\mu\text{A}$
Viewing Angle ( $^\circ$ )	65	65	35	35	70	$I_F = 10\text{mA}$

\* For FLV110 Test  $I_F = 20\text{mA}$

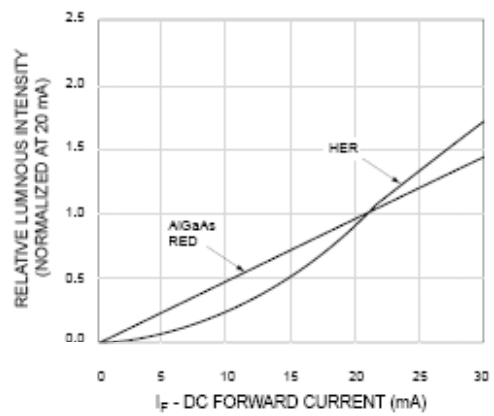


**T-1 3/4 (5 mm)  
SOLID STATE LAMPS**

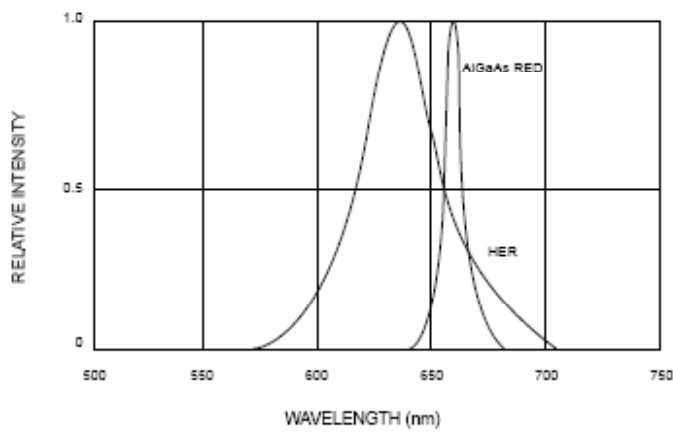
**TYPICAL PERFORMANCE CURVES (T<sub>A</sub> = 25°C)**



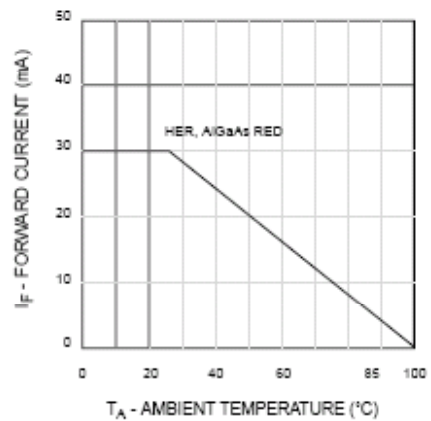
**Fig. 1 Forward Current vs. Forward Voltage**



**Fig. 2 Relative Luminous Intensity vs. DC Forward Current**



**Fig. 3 Relative Intensity vs. Peak Wavelength**



**Fig. 4 Current Derating Curve**



## T-1 3/4 (5 mm) SOLID STATE LAMPS

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