Gilway Technical Lamp

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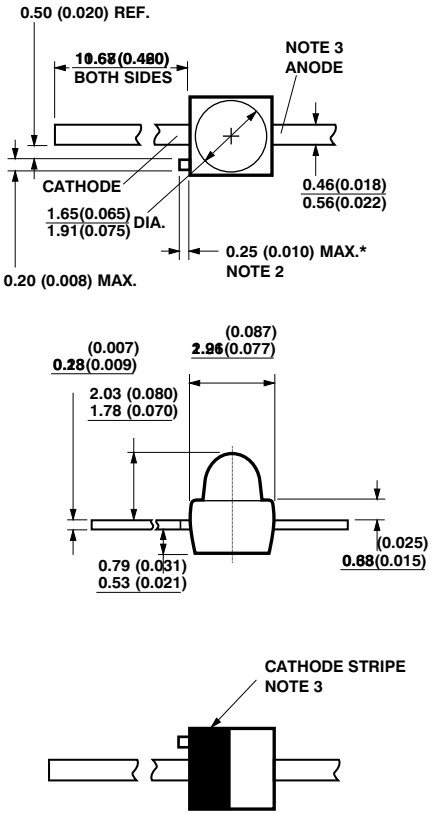
# GHB-GW15-DR




## Description

### Flat Top Package

The Series flat top lamps use an untinted, non-diffused, truncated lens to provide a wide radiation pattern that is necessary for use in backlighting applications. The flat top lamps are also ideal for use as emitters in light pipe applications.

**NOTES:**
1. ALL DIMENSIONS ARE IN MILLIMETRES (INCHES).
2. PROTRUDING SUPPORT TAB IS CONNECTED TO ANODE LEAD.
3. LEAD POLARITY FOR THESE TS AlGaAs SUBMINIATURE LAMPS IS OPPOSITE TO THE LEAD POLARITY OF SUBMINIATURE LAMPS USING OTHER LED TECHNOLOGIES.

| Package Description | Viewing Angle $2\ _{1/2}$ | Deep Red $R_d$ = 644 nm | Typical Iv $I\ _{\bar{I}}$ 500 a | Typical Iv $I_f$ = 20 mA |
|---|---|---|---|---|
| Domed, Nondiffused Untinted, Standard Current | 15 | | 400 | |

## Absolute Maximum Ratings at $T_A$ = 25 C

Peak Forward Current [2] ..... 300 mA
Average Forward Current (@ $I_{PEAK}$ = 300 mA) [1,2] ..... 30 mA
DC Forward Current [3] ..... 50 mA
Power Dissipation ..... 100 mW
Reverse Voltage ($I_R$ = 100 A) ..... 5 V
Transient Forward Current (10 s Pulse) [4] ..... 500 mA

LED Junction Temperature ..... 110 C
Lead Soldering Temperature
[1.6 mm (0.063 in.) from body ..... 260 C for 5 seconds
Reflow Soldering Temperatures
Convective IR ..... 235 C Peak, above 183 C for 90 seconds
Vapor Phase ..... 215 C for 3 minutes

**Notes:**
1. Maximum $I_{AVG}$ at f = 1 kHz, DF = 10%.
2. Refer to Figure 7 to establish pulsed operating conditions.
3. Derate linearly as shown in Figure 6.
4. The transient peak current is the maximum non-recurring peak current the device can withstand without damaging the LED die and wire bonds. It is not recommended that the device be operated at peak currents above the Absolute Maximum Peak Forward Current.

## Electrical Characteristics at $T_A$ = 25 C

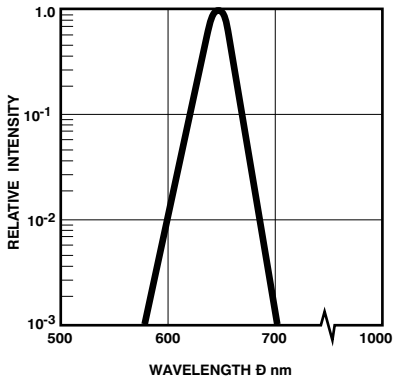
| Part Number HLMP- | Forward Voltage $V_F$ (Volts) @ $I_F$ = 20 mA Typ. | Max. | Reverse Breakdown $V_R$ (Volts) @ $I_R$ = 100 A Min. | Typ. | Capacitance C (pF) $V_F$ = 0, f = 1 MHz Typ. | Thermal Resistance $R_{J\text{-}PIN}$ ( C/W) | Speed of Response $_s$ (ns) Time Constant e $^{-t/\ s}$ Typ. |
|---|---|---|---|---|---|---|---|
| GHB-GW15-DR | 1.9 | 2.4 | 5 | 20 | 20 | 170 | 45 |

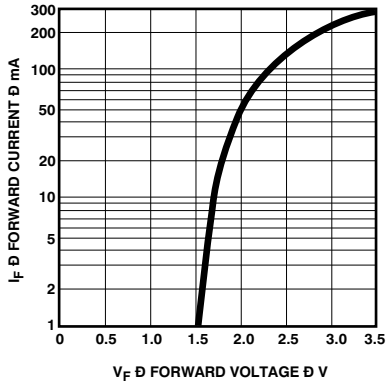
## Optical Characteristics at $T_A$=25 C

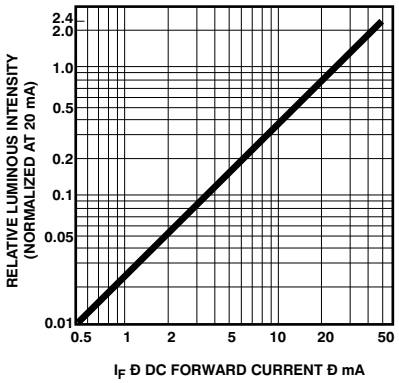
| Part | Luminous Intensity $I_V$ (mcd) @ 20 mA [1] Min. | Typ. | Total Flux $_V$ (mlm) @ 20 mA [2] Typ. | Peak Wavelength $_{peak}$ (nm) Typ. | Color, Dominant Wavelength $_d$ [3] (nm) Typ. | Viewing Angle 2 $^1/_2$ Degrees [4] Typ. | Luminous Efficacy $_V$ [5] (lm/w) |
|---|---|---|---|---|---|---|---|
| GHB-GW15-DR | 100 | 400 | 280 | 654 | 644 | 15 | 85 |

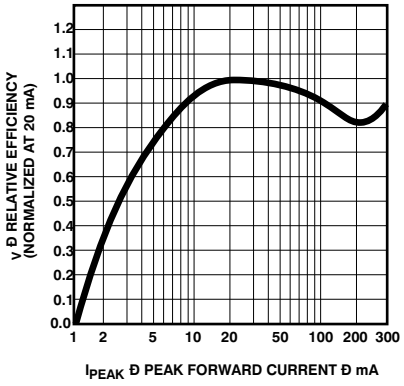
**Notes:**

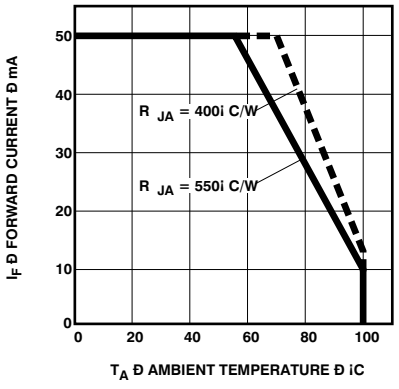
1. The luminous intensity, Iv, is measured at the mechanical axis of the lamp package. The actual peak of the spatial radiation pattern may not be aligned with this axis.
2. $_V$ is the total luminous flux output as measured with an integrating sphere.
3. The dominant wavelength, $_d$, is derived from the CIE Chromaticity Diagram and represents the color of the device.
4. $^1/_2$ is the off-axis angle where the luminous intensity is 1/2 the peak intensity.
5. Radiant intensity, $I_V$, in watts/steradian, may be calculated from the equation $I_V = I_V / _V$, where $I_V$ is the luminous intensity in candelas and $_V$ is the luminous efficacy in lumens/watt.

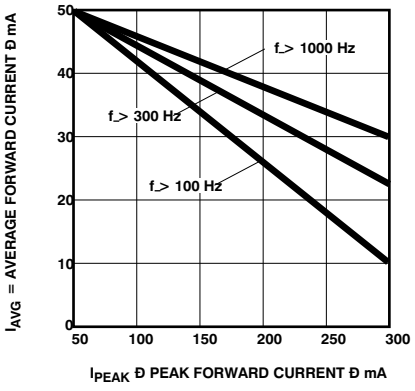


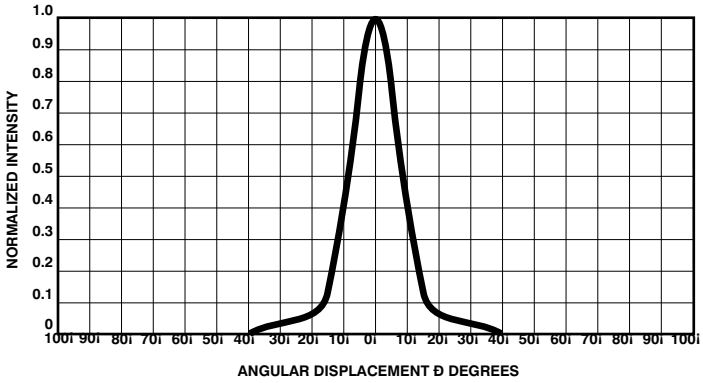




NORMALIZED INTENSITY
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
100i 90i 80i 70i 60i 50i 40i 30i 20i 10i 0i 10i 20i 30i 40i 50i 60i 70i 80i 90i 100i
ANGULAR DISPLACEMENT Ð DEGREES