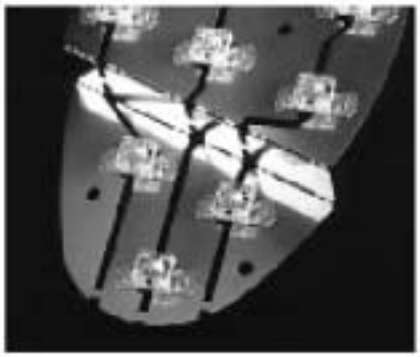
HPWS-TH00
HPWS-FH00
HPWS-TL00
HPWS-FL00

SnapLED 150

Technical Data DS08

Using Lumileds' patented solderless clinch technology, SnapLED 150 emitters are attached to a formable metal substrate that offers both styling flexibility and ruggedness unmatched by any other LED assembly.

SnapLED's brilliant luminance, flexibility, and reliability enable distinctive and durable lighting designs for vehicles, signals, and specialty lighting.



Benefits

- Rugged Lighting Products
- Electricity Savings
- Maintenance Savings
- 3-Dimensional Array Design
- Environmental Conformance

Features

- High Luminance
- Low Power Consumption
- Low Thermal Resistance
- Low Profile
- Solderless Mounting Technique
- Formable Substrate
- Meets SAE/ECE/JIS Automotive Color Requirements
- Packaged in tubes for use with automatic insertion equipment

Typical Applications

- Automotive Lighting
  - Rear Combination Lamps
  - Front Turn Signal Lamps
  - High Mount Stop Lamps
  - Indirect Lighting
- Solid State Lighting and Signaling

Selection Guide

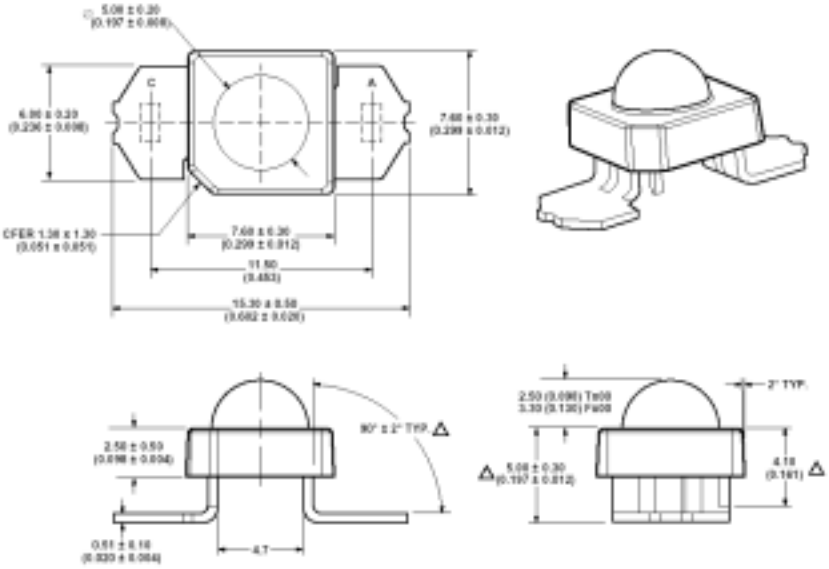
Part Number	LED Color	Total flux Φ_V (lm) @ 150 mA[1] Min.	Total Included angle $\theta_{0.90\ V}$ (Degrees)[2] Typ.
HPWS-THOO-OOOOO	TS AlInGaP Red-Orange	6.0	120
HPWS-FHOO-OOOOO			70
HPWS-TLOO-OOOOO	TS AlInGaP Amber	3.0	120
HPWS-FLOO-OOOOO			70

Notes:

1. Φ_V is the total luminous flux output as measured with an integrating sphere after the device has stabilized $R\theta_{j\text{-}a}$ = 100°C/W, T_A = 25°C).

2. $\theta_{0.90\ V}$ is the included angle at which 90% of the total luminous flux is captured. See Figure 5.

Outline Drawings



Notes:

1. Dimensions are in millimeters (inches).
2. Dimensions without tolerances are nominal.
3. Cathode lead is indicated with a "C" and anode lead is indicated with an "A."
4. Special characteristics are designated with a triangle.
5. Clinch joint locations shown in dashed lines on top view of part (11.50 mm spacing).

Absolute Maximum Ratings at T_A = 25°C

Parameter	HPWS-TxOO/FxOO	Units
DC Forward Current [1,2]	150	mA
Pulsed Forward Current[3,4]	200	mA
Power Dissipation	473	mW
Reverse Voltage (I_R = 100 μ_A)	10	V
Operating Temperature Range	-40 to +100	°C
Storage Temperature Range	-55 to +100	°C
High Temperature Chamber	125 (2 hrs.)	°C
LED Junction Temperature	125	°C

Notes:

1. Operation at currents below 20 mA is not recommended.
2. Derate linearly as shown in Figure 3a.
3. Amber only at simulated turn signal conditions of f = 0.5 - 2 Hz and 50% duty factor.
4. Derate linearly as shown in Figure 3b.

Optical Characteristics at TA = 25°C, I_F = 150 mA, $R_{\theta J\text{-}A}$ = 100°C/W

Device type	Total flux Φ_V (lm) [1] Min.	Peak wavelength λ_{PEAK} (nm) Typ.	Color, Dominant Wavelength λ_D (nm) [2] Typ.	Total Included Angle (degrees) [3] Typ.	Ratio of Luminous Intensity to Total Flux I_v(cd) / Φ_V(lm) Typ.	Viewing Angle 2θ 1/2 (Degrees) Typ.
HPWS-THOO	6.0	630	621	120	0.6	85
HPWS-FHOO				70	2.0	30
HPWS-TLOO	3.0	596	594	120	0.6	85
HPWS-FLOO				70	2.0	30

Electrical Characteristics at T_A = 25°C

Device type	Forward Voltage V_F (Volts) @ I_F = 150 mA Min	Typ	Max	Reverse Breakdown V_R (Volts) @ I_R = 100 μ_A Min.	Typ.	Capacitance C (pF) V_F = 0, F = 1MHz. Typ.	Thermal resistance $R\theta_{J\text{-}PIN}$ (°C/W) Typ.	Speed of Response τ_s (ns) [1] Typ.
HPWS-xHOO	2.19	2.55	3.15	10	20	80	60	20
HPWS-xLOO	2.19	2.65	3.15	10	20	80	75	20

Notes:

1. Φ_V is the total luminous flux output as measured with an integrating sphere after the device has stabilized.
2. The dominant wavelength is derived from the CIE Chromaticity Diagram and represents the perceived color of the device.
3. $\theta_{0.90\ V}$ is the included angle at which 90% of the total luminous flux is captured. See Figure 5.

Figures

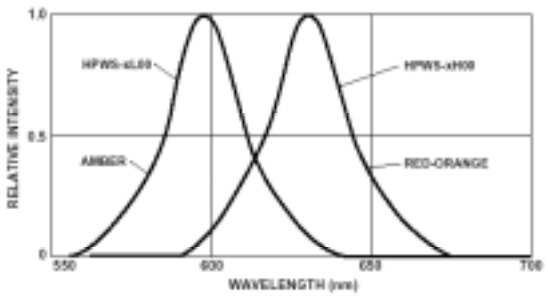


Figure 1. Relative Intensity vs. Wavelength

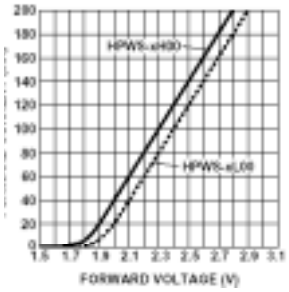


Figure 2. Forward Current vs. Forward Voltage.

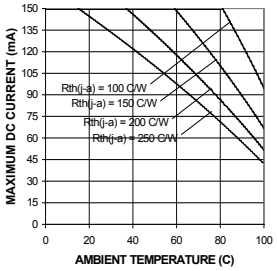


Figure 3a. HPWS-xx00 Maximum DC Forward Current vs. Ambient Temperature.

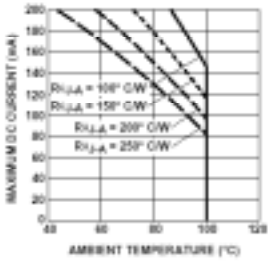


Figure 3b. HPWS-xx00 Maximum Pulsed Forward Current vs. Ambient Temperature.

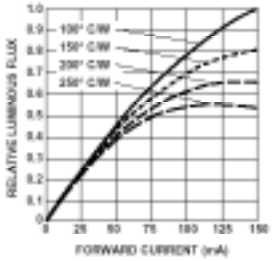


Figure 4. HPWS-xx00 Relative Luminous Flux vs. Forward Current.

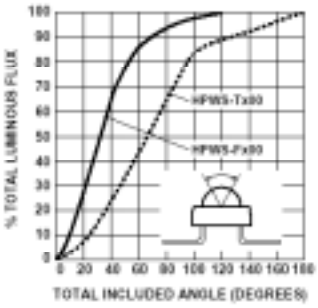


Figure 5. HPWS-xx00 Percent Total Luminous Flux vs. Total Included Angle.

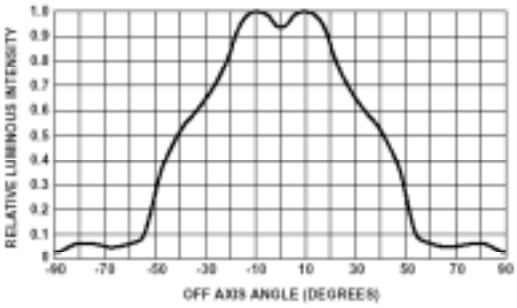


Figure 6a. HPWS-Tx00 Relative Intensity vs. Off Axis Angle.

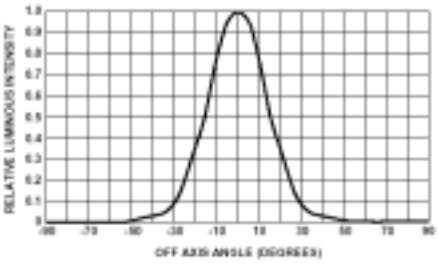


Figure 6b. HPWS-Fx00 Relative Intensity vs. Off Axis Angle.

Note:
For additional information, please refer to the Lumileds AN 1149 Series.

Company Information

SnapLED™ is developed, manufactured and marketed by Lumileds Lighting, LLC. Lumileds is a world-class supplier of Light Emitting Diodes (LEDs) producing billions of LEDs annually. Lumileds is a fully integrated supplier, producing core LED material in all three base colors (Red, Green, Blue) and White. Lumileds has R&D development centers in San Jose, California and Best, The Netherlands and production capabilities in San Jose, California and Malaysia.

Lumileds is pioneering high-flux LED technology and bridging the gap between solid-state LED technology and the lighting world. Lumileds is absolutely dedicated to bringing the best and brightest LED technology to enable new applications and markets in the lighting world.

Lumileds may make process or materials changes affecting the performance or other characteristics of our products. These products supplied after such changes will continue to meet published specifications, but may not be identical to products supplied as samples or under prior orders.

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