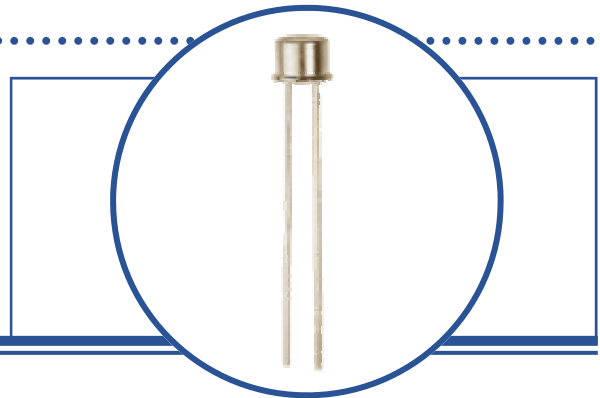


Point Source Infrared Emitting Diode

OP230WPS

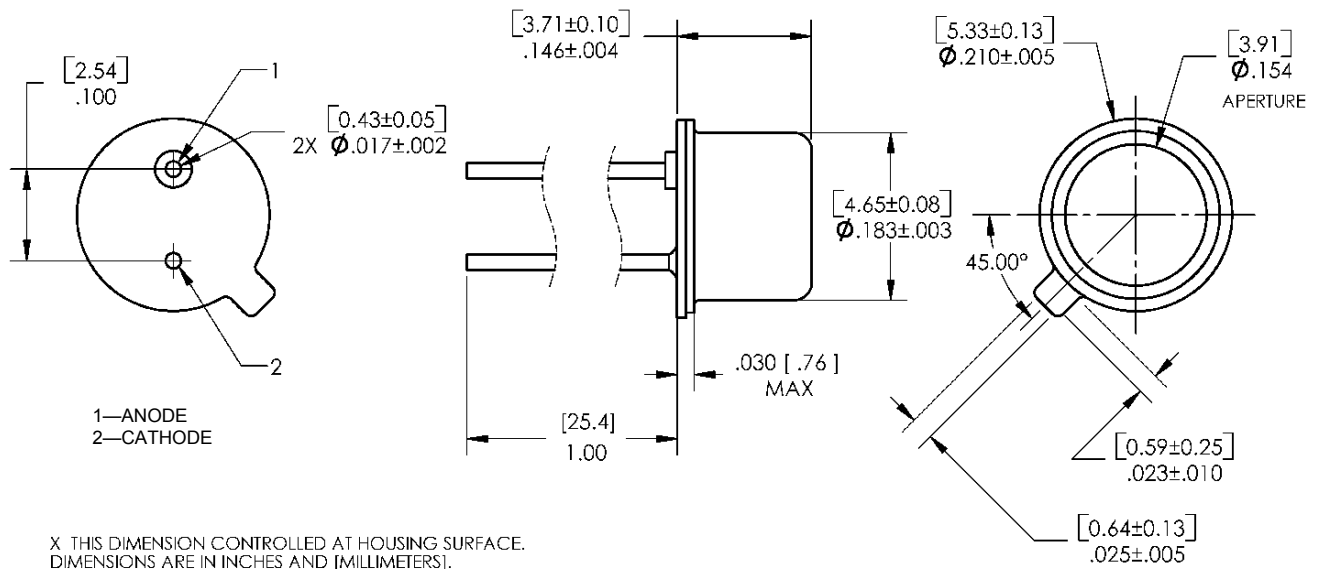
- Point Source
- Symmetrical beam pattern
- Flat lens for wide beam angle
- Ideal for use with collimating lenses
- Wide operating temperature range
- TO-46 metal can package



The OP230WPS is an 850nm GaAlAs, point source, infrared emitting diode mounted in a hermetic flat lens, TO-46 metal can package. The advantage of this emitter is that it emits photons from a 0.004" area that is aligned with the package optical centerline. Unlike other GaAlAs emitters, this device performs more like an ideal point source and is suitable for use with lenses to create collimated light sources that can be used in a variety of sensing applications.

Applications include:

- Optical Encoders
- Light Curtains
- Optical Triangulation Systems
- Bar Code Readers



RoHS

Optek reserves the right to make changes at any time in order to improve design and to supply the best product possible.

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Point Source Infrared Emitting Diode

OP230WPS



Absolute Maximum Ratings

$T_A = 25^\circ\text{C}$ unless otherwise noted

Storage Temperature	-55° C to +150° C
Operating Temperature	-40° C to +125° C
Lead Soldering Temperature (1/16" (1.6mm) from case for 5 seconds with soldering iron)	260° C ⁽²⁾
Forward Current	100 mA
Peak Forward current (2 μs pulse width, 0.1% Duty Cycle)	3.0 A
Reverse DC Voltage	2.0 V
Power Dissipation	100 mW ⁽³⁾

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
$E_{e(\text{APT})}$	Apertured Irradiance	0.50			mW/cm ²	$I_F = 100\text{ mA}$ ⁽⁴⁾
V_F	Forward Voltage			2.2	V	$I_F = 100\text{ mA}$
I_R	Reverse Current			10	μA	$V_R = 2.5\text{ V}$
λ_P	Peak Wavelength		850		nm	$I_F = 20\text{ mA}$
β	Spectral Bandwidth @50% $I_F=20\text{mA}$		25		nm	$I_F = 20\text{ mA}$
θ_{HP}	Emission Angle at Half Power		± 45		Degrees	$I_F = 20\text{ mA}$
t_r	Optical Rise Time		20		ns	$I_{F(\text{Peak})} = 100\text{ mA}$, Pulse Width=10 μs , Duty Cycle=10%
t_f	Optical Fall Time		20		ns	

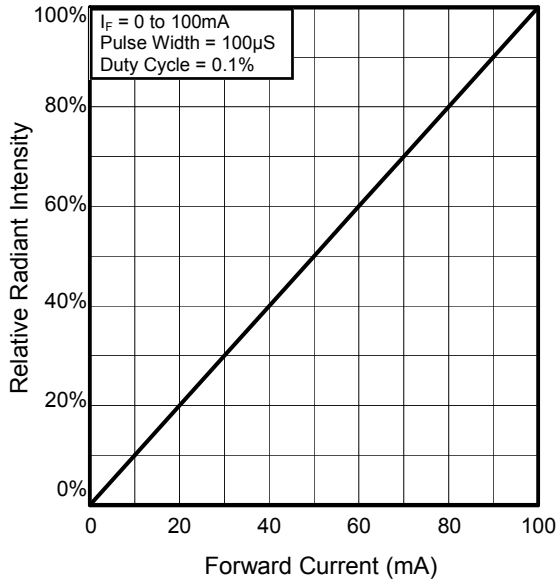
Notes:

- (1) All parameters tested using pulse technique.
- (2) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
- (3) Derate at 1mW/°C above 25°C.
- (4) $E_{e(\text{APT})}$ is a measurement of the average apertured radiant energy incident upon a sensing area 0.250" (6.35mm) in diameter and perpendicular to and centered to the mechanical axis of the emitting surface at a distance of 0.466" (11.84mm). $E_{e(\text{APT})}$ is not necessarily uniform within the measured area.

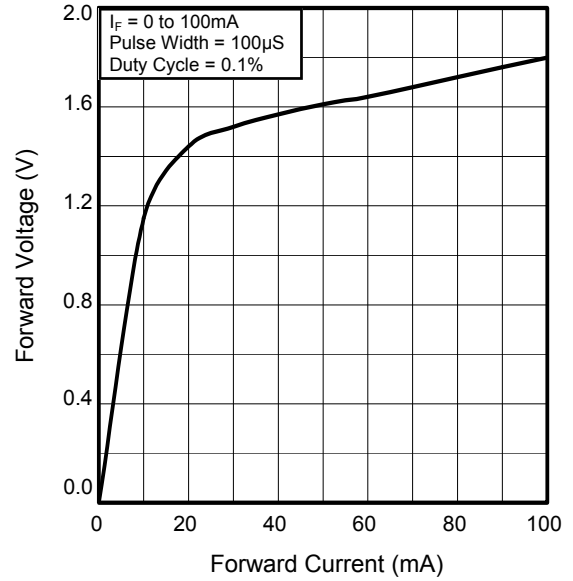
Point Source Infrared Emitting Diode OP230WPS



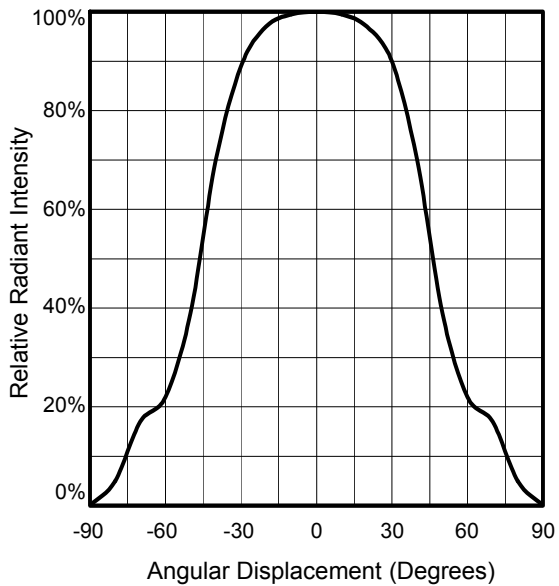
Relative Radiant Intensity vs.
Forward Current



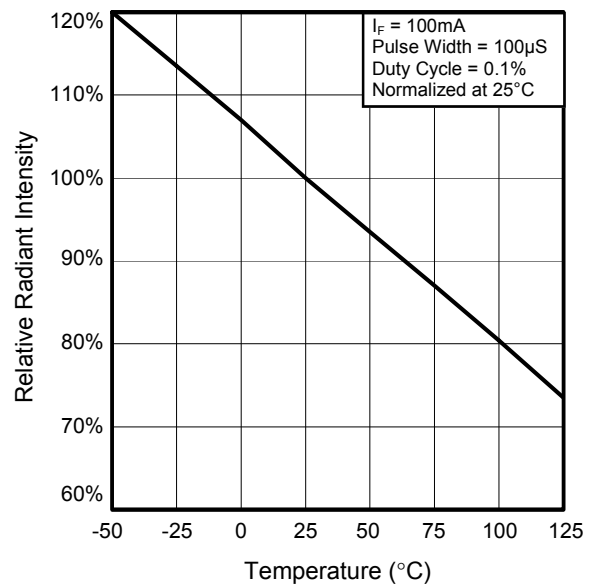
Forward Voltage vs.
Forward Current



Relative Radiant Intensity vs.
Angular Displacement



Relative Radiant Intensity vs.
Ambient Temperature



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