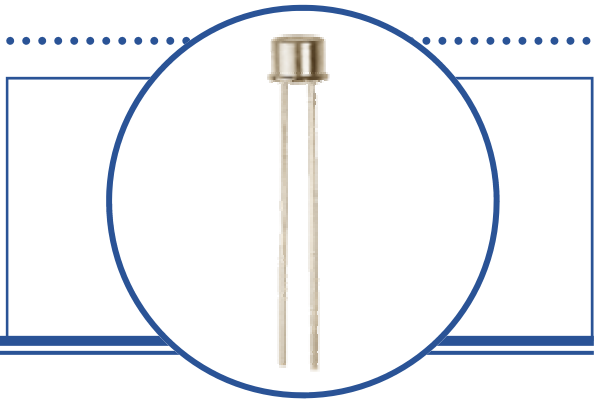
Point Source Infrared Emitting Diode

TT electronics
OPTEK Technology

OP230WPS

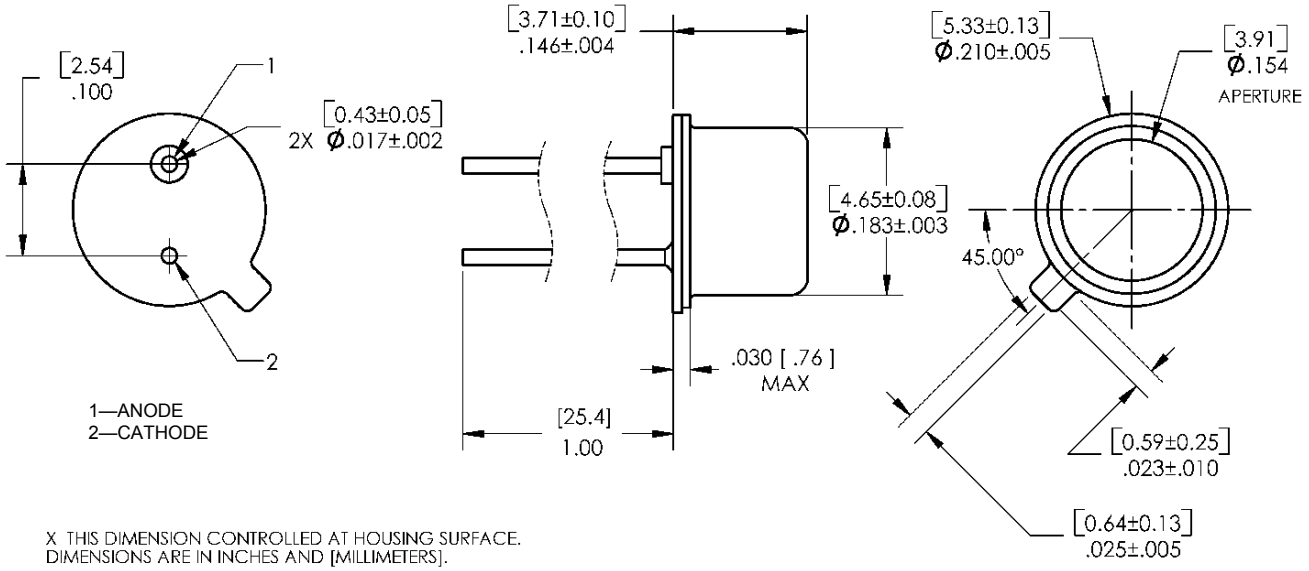
- Point Source
- Symmetrical beam pattern
- Flat lens for wide beam angle
- Ideal for use with collimating lenses
- Wide operating temperature range
- TO-46 metal can package



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 and a variety of sensing applications.

Applications include:

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



1—ANODE
2—CATHODE

X THIS DIMENSION CONTROLLED AT HOUSING SURFACE.
DIMENSIONS ARE IN INCHES AND [MILLIMETERS].

Pb
RoHS

Optek

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Absolute Maximum Ratings

T_A = 25° C unless otherwise noted

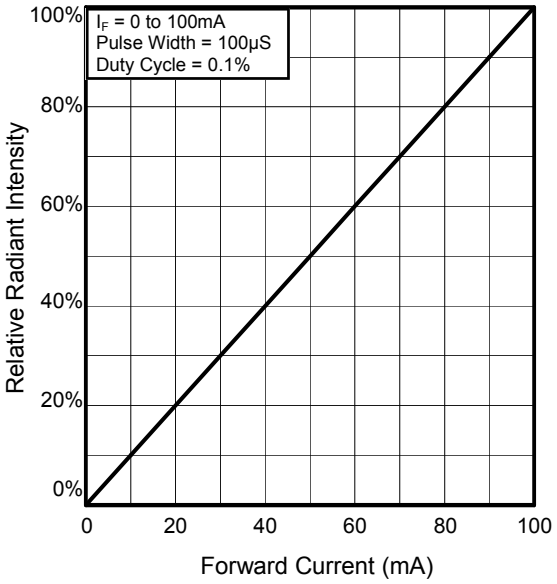
Storage Temperature	-55° C to +150° C
Operating Temperature	-40° C to +125° C
Lead Soldering Temperature (1/16" (1.6mm) from case for 5 seconds with soldering iron)	260° C (2)
Forward Current	100 mA
Peak Forward current (2 µs pulse width, 0.1% Duty Cycle)	3.0 A
Reverse DC Voltage	2.0 V
Power Dissipation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

Electrical Characteristics (T_A = 25°C unless otherwise noted)

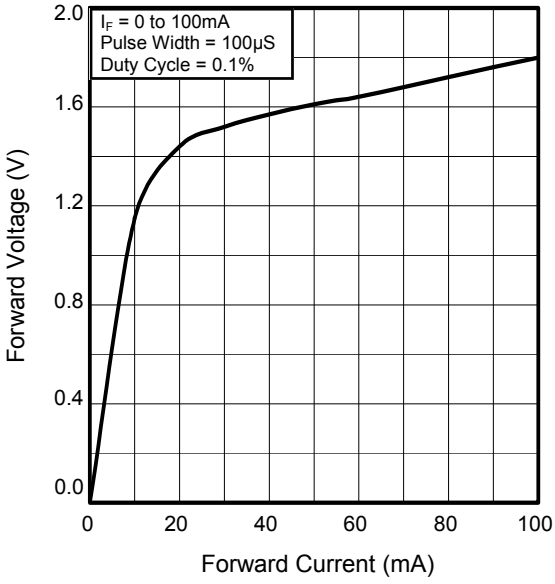
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
$E_{e(APT)}$	Apertured Irradiance	0.50			mW/cm^2	I_F = 100 mA (4)
V_F	Forward Voltage			2.2	V	I_F = 100 mA
I_R	Reverse Current			10	µA	V_R = 2.5 V
λ_P	Peak Wavelength		850		nm	I_F = 20 mA
β	Spectral Bandwidth @50% I_F=20mA		25		nm	I_F = 20 mA
θ_{HP}	Emission Angle at Half Power		±45		Degrees	I_F = 20 mA
t_r	Optical Rise Time		20		ns	$I_{F(Peak)}$ = 100 mA, Pulse Width=10µs, 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) $E_{e(APT)}$ 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). $E_{e(APT)}$ is not necessarily uniform within the measured area.

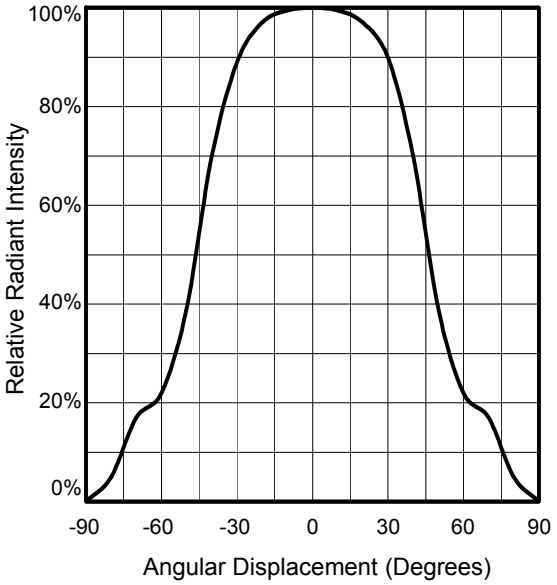
Relative Radiant Intensity vs.
Forward Current



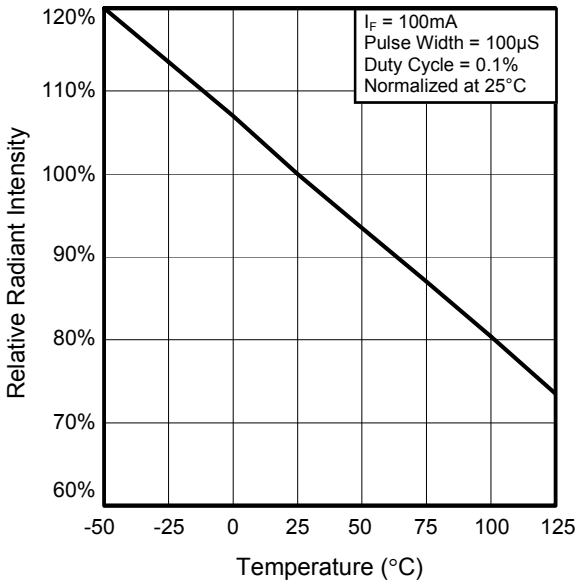
Forward Voltage vs.
Forward Current



Relative Radiant Intensity vs.
Angular Displacement



Relative Radiant Intensity vs.
Ambient Temperature



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