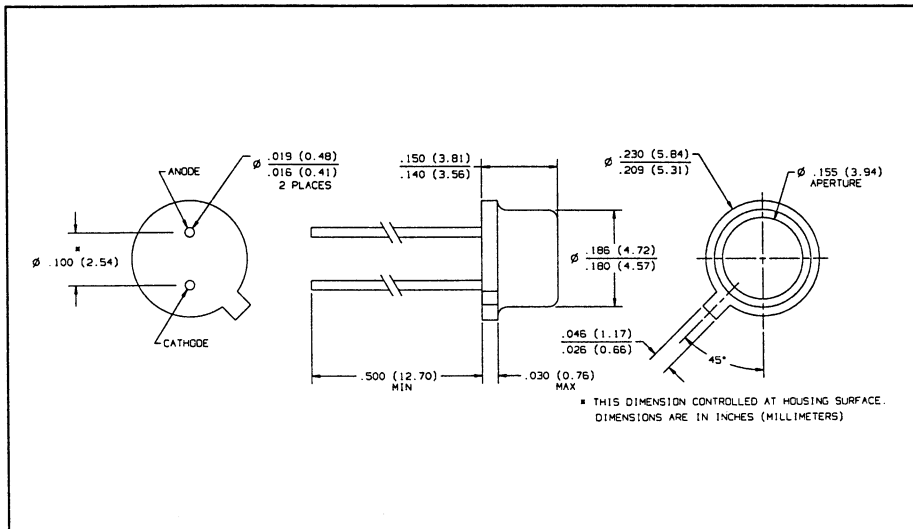
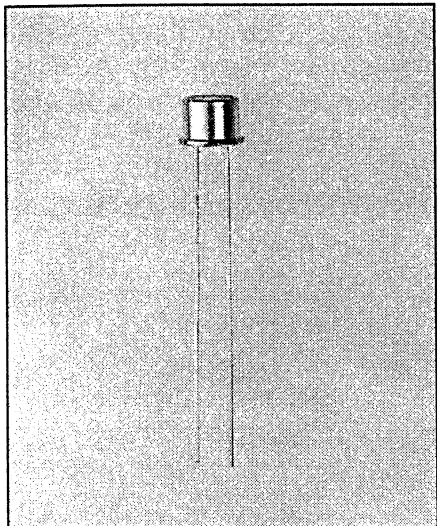


# GaAlAs Hermetic Infrared Emitting Diodes

## Types OP231W, OP232W, OP233W



### Features

- Wide irradiance pattern
- Enhanced temperature range
- Mechanically and spectrally matched to the OP800WSL and OP830SL series devices
- Significantly higher power output than GaAs at equivalent drive currents
- TO-46 hermetically sealed package

### Description

The OP231W series devices are 890nm gallium aluminum arsenide infrared emitting diodes mounted in hermetically sealed packages. The broad irradiance pattern provides relatively even illumination over a large area.

### Replaces

K6300 series

### Absolute Maximum Ratings ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Reverse Voltage	2.0 V
Continuous Forward Current	100 mA
Peak Forward Current (2 $\mu\text{s}$ pulse width, 0.1% duty cycle)	10.0 A
Storage Temperature Range	$-65^\circ\text{C}$ to $+150^\circ\text{C}$
Operating Temperature Range	$-65^\circ\text{C}$ to $+125^\circ\text{C}$
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]	$260^\circ\text{C}$ <sup>(1)</sup>
Power Dissipation	200 mW <sup>(2)</sup>

#### Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 seconds max. when flow soldering.
- (2) Derate linearly 2.0 mW/ $^\circ\text{C}$  above  $25^\circ\text{C}$ .
- (3)  $E_{e(\text{APT})}$  is a measurement of the average radiant intensity within the cone formed by the measurement surface, a radius of 0.466" (11.84 mm) measured from the lens side of the tab to the sensing surface, and a sensing surface of 0.250" (6.35 mm) in diameter forming a  $30^\circ$  cone.  $E_{e(\text{APT})}$  is not necessarily uniform within the measured area.
- (4) Measurement made with 100 $\mu\text{s}$  pulse measured at the trailing edge of the pulse with a duty cycle of 0.1% and an  $I_F = 100\text{ mA}$ .

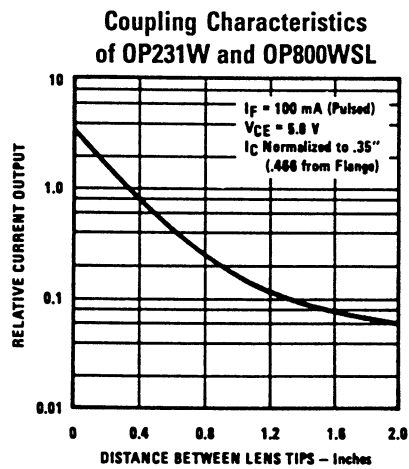
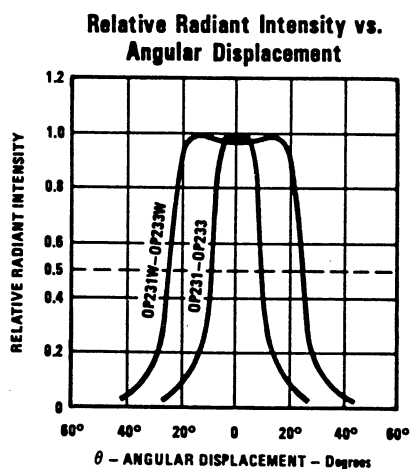
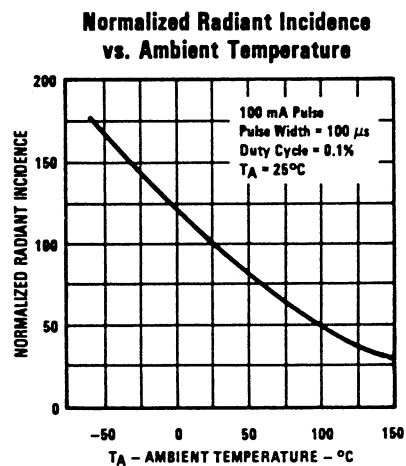
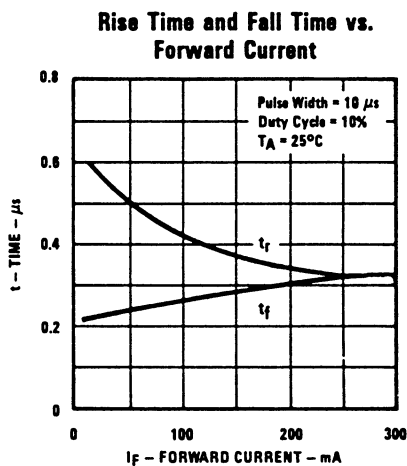
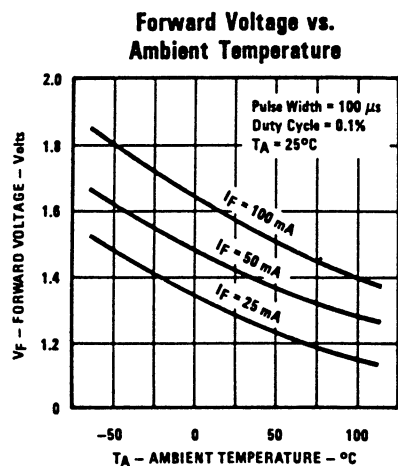
# Types OP231W, OP232W, OP233W

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
$E_e(\text{APT})$	Apertured Radiant Incidence	OP231W OP232W OP233W	1.5 3.5 5.0		$\text{mW}/\text{cm}^2$ $\text{mW}/\text{cm}^2$ $\text{mW}/\text{cm}^2$	$I_F = 100\text{ mA}^{(3)(4)}$ $I_F = 100\text{ mA}^{(3)(4)}$ $I_F = 100\text{ mA}^{(3)(4)}$
$V_F$	Forward Voltage			2.0	V	$I_F = 100\text{ mA}^{(4)}$
$I_R$	Reverse Current			100	$\mu\text{A}$	$V_R = 2.0\text{ V}$
$\lambda_p$	Wavelength at Peak Emission		890		nm	$I_F = 10\text{ mA}$
B	Spectral Bandwidth Half Power Points		80		nm	$I_F = 10\text{ mA}$
$\Delta\lambda_p/\Delta T$	Spectral Shift with Temperature		+0.30		$\text{nm}/^\circ\text{C}$	$I_F = \text{Constant}$
$\theta_{\text{HP}}$	Emission Angle at Half Power Points		50		Deg.	$I_F = 100\text{ mA}$
$t_r$	Output Rise Time		500		ns	$I_F(\text{PK}) = 100\text{ mA}$ , $\text{PW} = 10\text{ }\mu\text{s}$ , D.C. = 10%
$t_f$	Output Fall Time		250		ns	$I_F(\text{PK}) = 100\text{ mA}$ , $\text{PW} = 10\text{ }\mu\text{s}$ , D.C. = 10%

INFRARED  
EMITTING  
DIODES

## Typical Performance Curves



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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