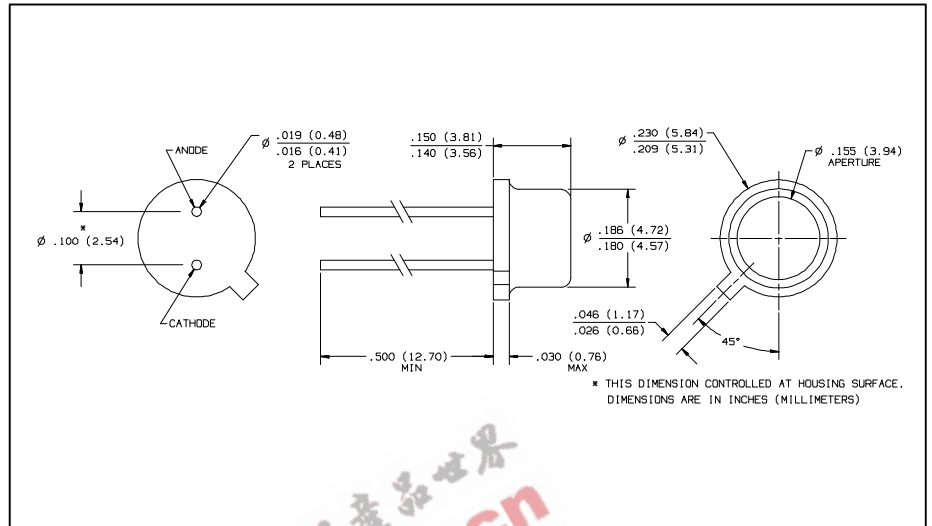


# GaAlAs Hermetic Infrared Emitting Diodes Type OP235W



## Features

- High Speed
- Enhanced temperature range
- Wide irradiance pattern
- 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
- Case is electrically connected to the cathode

## Description

The OP235W device is an 850 nm gallium aluminum arsenide infrared emitting diode mounted in a hermetically sealed package. The broad irradiance pattern provides relatively even illumination over a large area.

## 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 emitted by the IRED within a cone formed from the IRED chip to an aperture. The aperture of diameter 0.250" is located a distance of 0.466" from the flange (measurement plane) to the aperture plane (parallel to the measurement plane) along the optical and mechanical axis. The cone formed is a  $30^\circ$  cone. The radiant intensity is not necessarily uniform within the measure 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  $I_F = 100 \text{ mA}$ .

# Type OP235W

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	6.0		--	$\text{mW}/\text{cm}^2$	$I_F = 100 \text{ mA}^{(3)(4)}$
$P_O$	Power Output		14		mW	$I_F = 100 \text{ mA}$
$V_F$	Forward Voltage			2.0	V	$I_F = 100 \text{ mA}^{(4)}$
$I_R$	Reverse Current			100	$\mu\text{A}$	$V_R = 2 \text{ V}$
$\lambda_p$	Wavelength at Peak Emission		850		nm	$I_F = 10 \text{ mA}$
B	Spectral Bandwidth Between Half Power Points		40		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		55		Deg.	$I_F = 100 \text{ mA}$
$t_r$	Rise Time		55		ns	$I_{F(\text{PK})} = 100 \text{ mA}$ , $\text{PW} = 10 \mu\text{s}$ , D.C. = 10%
$t_f$	Fall Time		40		ns	

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