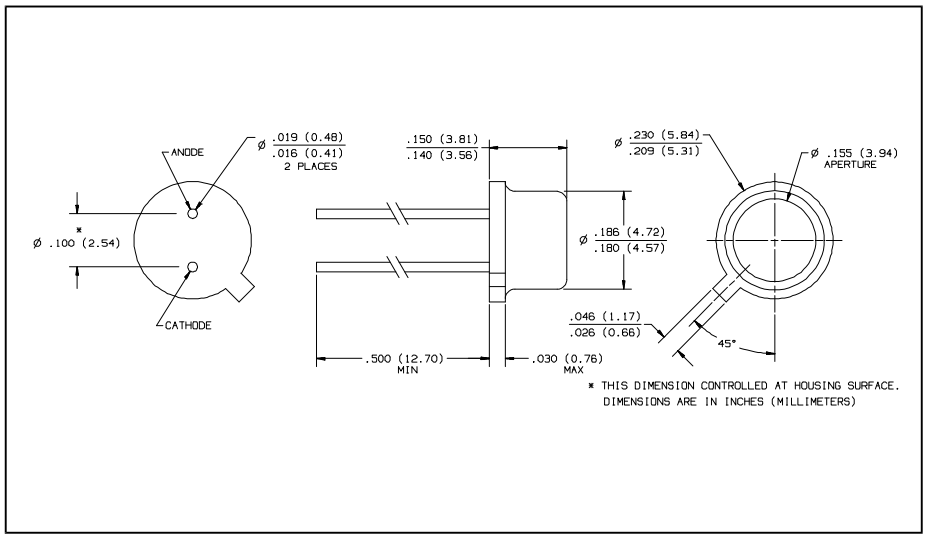
Product Bulletin OP235W
July 2001

P R E L I M I N A R Y

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° C unless otherwise noted)

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

Notes:
(1) RMA flux is recommended. Duration can be extended to 10 seconds max. when flow soldering.
(2) Derate linearly 2.0 mW/° C above 25° C.
(3) $E_{e(APT)}$ 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° cone. The radiant intensity is not necessarily uniform within the measure area.
(4) Measurement made with 100μs pulse measured at the trailing edge of the pulse with a duty cycle of 0.1% and an I_F = 100 mA.

Type OP235W

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
$E_{e(APT)}$	Apertured Radiant Incidence	6.0		--	mW/cm^2	I_F = 100 mA(3)(4)
P_O	Power Output		14		mW	I_F = 100 mA
V_F	Forward Voltage			2.0	V	I_F = 100 mA(4)
I_R	Reverse Current			100	µA	V_R = 2 V
λp	Wavelength at Peak Emission		850		nm	I_F = 10 mA
B	Spectral Bandwidth Between Half Power Points		40		nm	I_F = 10 mA
$\Delta\lambda p/\Delta T$	Spectral Shift with Temperature		+0.30		nm/° C	I_F = Constant
θ_{HP}	Emission Angle at Half Power Points		55		Deg.	I_F = 100 mA
t_r	Rise Time		55		ns	$I_{F(PK)}$ = 100 mA, PW = 10 µs, D.C. = 10%
t_f	Fall Time		40		ns	

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