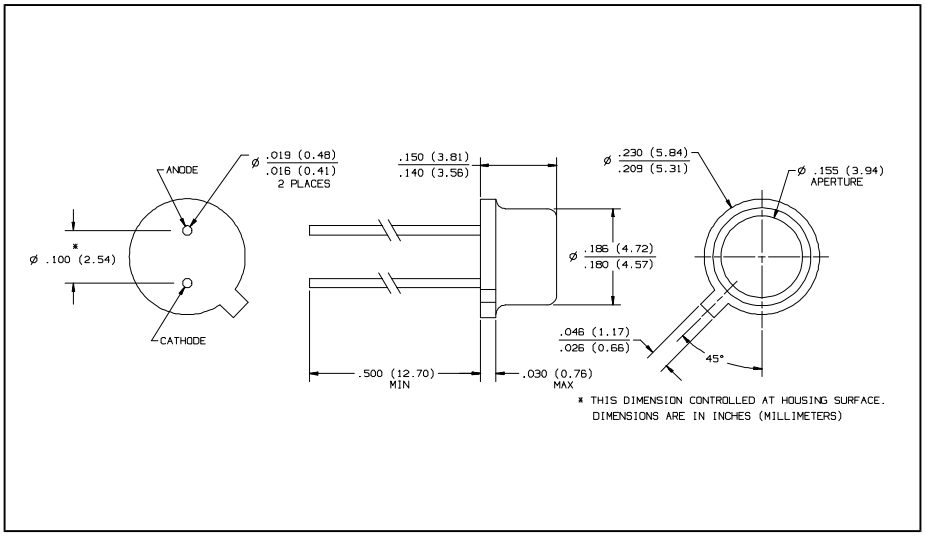
P R E L I M I N A R Y

GaAlAs Hermetic Infrared Emitting Diodes
Type OP234W



Features

- Very 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 OP234W device is an 850 nm gallium aluminum arsenide infrared emitting diodes mounted in hermetically sealed packages. 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 measured 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.

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
$E_{e(APT)}$	Apertured Radiant Incidence	5.0		--	mW/cm^2	I_F = 100 mA[3][4]
P_O	Power Output		17		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 = 2.0 V
λp	Wavelength at Peak Emission		850		nm	I_F = 10 mA
B	Spectral Bandwidth Half Power Points		50		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		60		Deg.	I_F = 100 mA
t_r	Rise Time		15		ns	$I_{F(PK)}$ = 100 mA, PW = 10 µs, D.C. = 10%
t_f	Fall Time		10		ns	

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