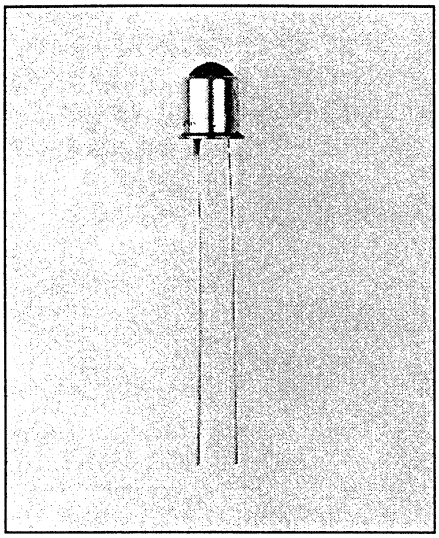
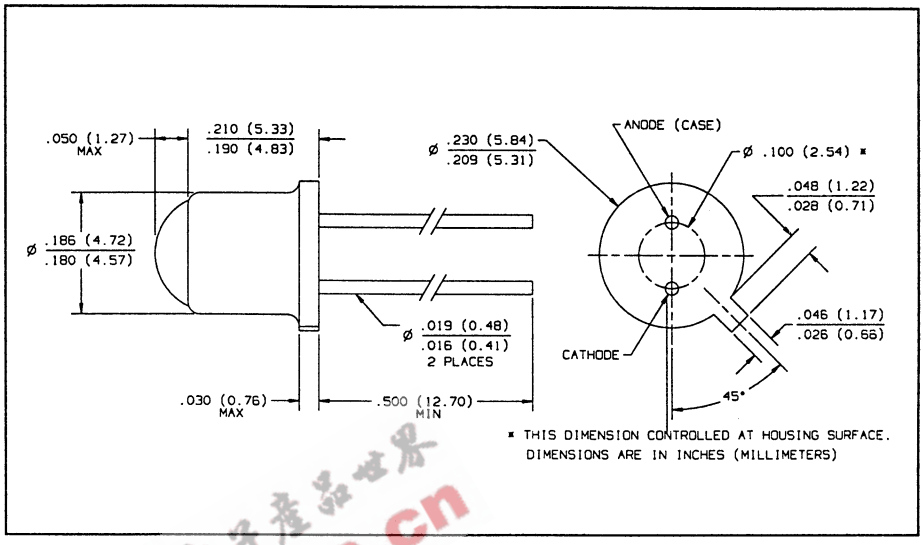
GaAs Hermetic Infrared Emitting Diodes
Types OP130, OP131, OP132, OP133





Features

- TO-46 hermetically sealed package
- Mechanically and spectrally matched to the OP800 and OP593 phototransistors or OP830 photodarlingtons
- Variety of power ranges
- Enhanced temperature range

Description

The OP130 series are high intensity gallium arsenide infrared emitting diodes mounted in hermetic TO-46 housings. The narrow beam allows ease of design in beam interrupt applications in conjunction with the OP800 or OP598 series phototransistors. TO-46 housings offer high power dissipation and superior hostile environment operation.

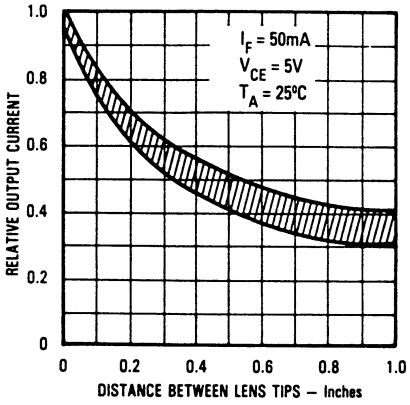
Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)

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) Measurement made with 100 µs pulse measured at the trailing edge of the pulse with a duty cycle of 0.1% and an I_F = 100 mA.

Typical Performance Curves

Coupling Characteristics of OP130 and OP800SL



Types OP130, OP131, OP132, OP133

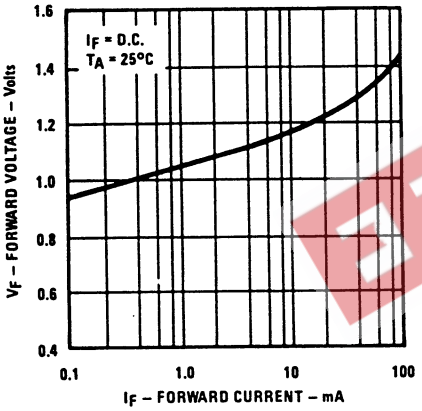
Electrical Characteristics (T_A = 25°C unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
P_O	Radiant Power Output OP130	1.0			mW	I_F = 100 mA(3)
	OP131	3.0			mW	I_F = 100 mA(3)
	OP132	4.0			mW	I_F = 100 mA(3)
	OP133	5.0			mW	I_F = 100 mA(3)
V_F	Forward Voltage			1.75	V	I_F = 100 mA(3)
I_R	Reverse Current			100	µA	V_R = 2.0 V
λp	Wavelength at Peak Emission		935		nm	I_F = 10 mA(3)
B	Spectral Bandwidth Between Half Power Points		50		nm	I_F = 10 mA(3)
$\Delta\lambda_P/\Delta_T$	Spectral Shift with Temperature		+0.30		nm/°C	I_F = Constant
θ_{HP}	Emission Angle at Half Power Points		18		Deg.	I_F = 100 mA
t_r	Output Rise Time		1000		ns	$I_{F(PK)}$ = 100 mA, PW = 10 µs, D.C. = 10%
t_f	Output Fall Time		500		ns	

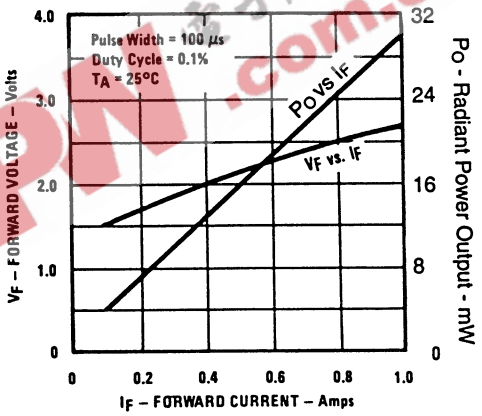
INFRARED EMITTING

Typical Performance Curves

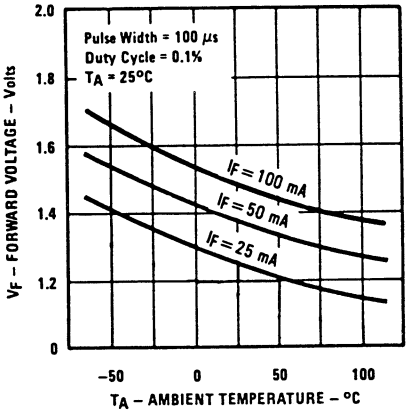
Forward Voltage vs. Forward Current



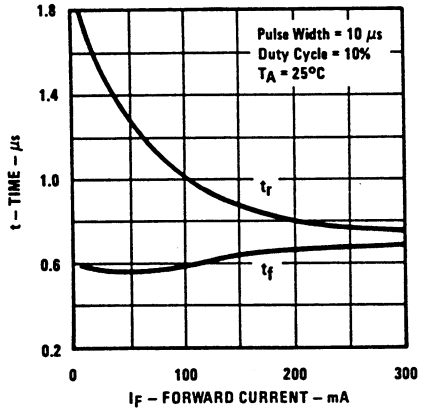
Forward Voltage and Radiant Incidence vs. Forward Current



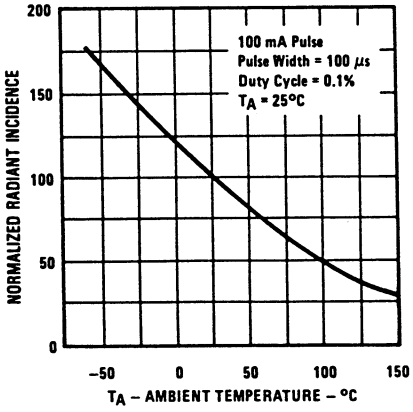
Forward Voltage vs. Ambient Temperature



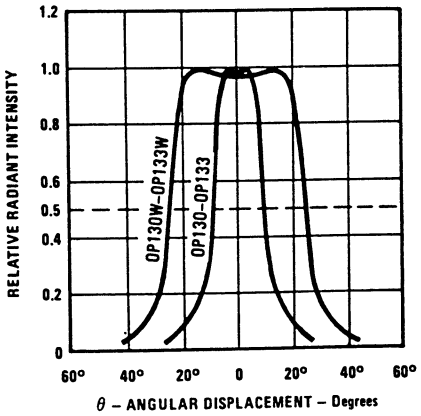
Rise and Fall Time vs. Forward Current



Normalized Radiant Incidence vs. Ambient Temperature



Relative Radiant Intensity vs. Angular Displacement



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