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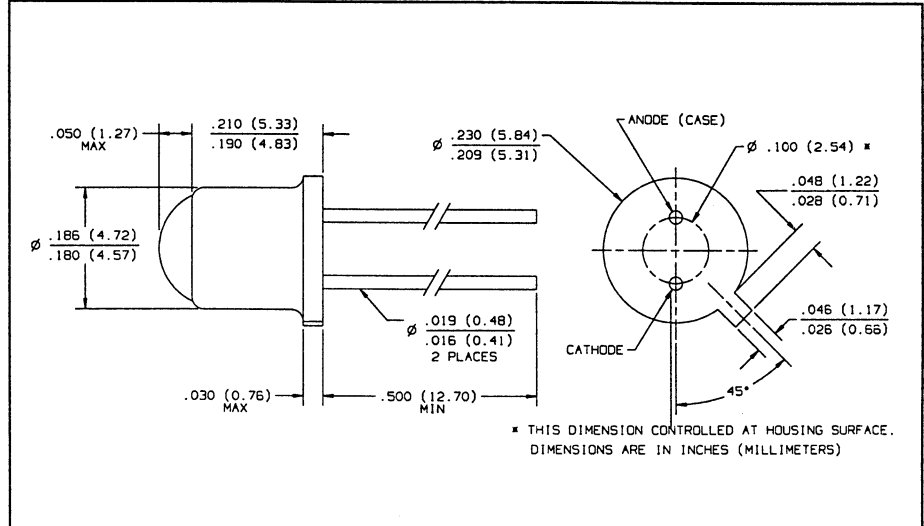
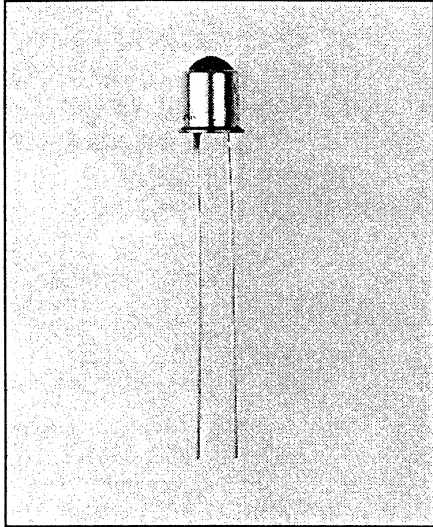


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GaAs Hermetic Infrared Emitting Diodes

Types OP130, OP131, OP132, OP133



Features

- TO-46 hermetically sealed package
- Mechanically and spectrally matched to the OP800 and OP593 phototransistors or OP830 photodarlington
- 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.

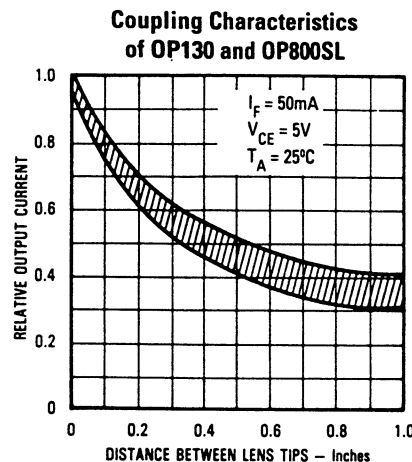
Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

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 $+150^\circ\text{C}$
Operating Temperature Range	-65°C to $+125^\circ\text{C}$
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]	$260^\circ\text{C}^{(1)}$
Power Dissipation	$200\text{ mW}^{(2)}$

Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 seconds max. when flow soldering.
- (2) Derate linearly $2.0\text{ mW}/^\circ\text{C}$ above 25°C .
- (3) Measurement made with $100\text{ }\mu\text{s}$ pulse measured at the trailing edge of the pulse with a duty cycle of 0.1% and an $I_F = 100\text{ mA}$.

Typical Performance Curves



Types OP130, OP131, OP132, OP133

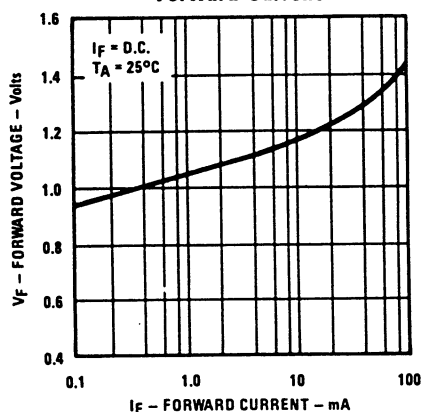
Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

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

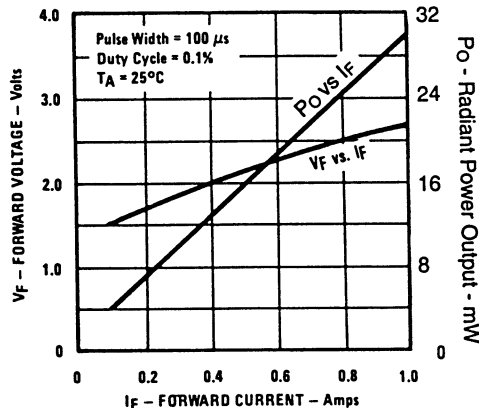
INFRARED
EMITTING
DIODES

Typical Performance Curves

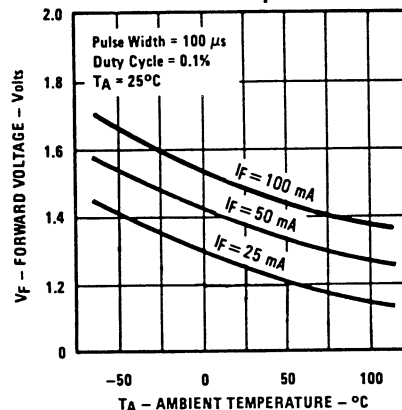
Forward Voltage vs.
Forward Current



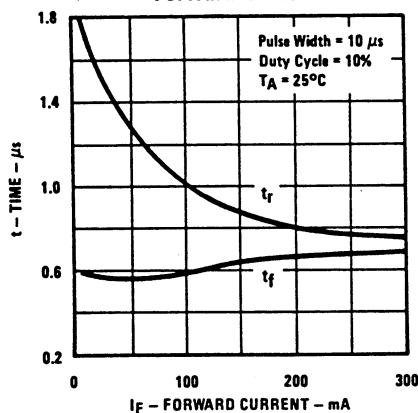
Forward Voltage and Radiant
Incidence vs. Forward Current



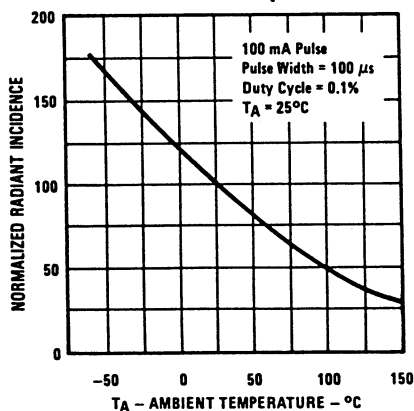
Forward Voltage vs.
Ambient Temperature



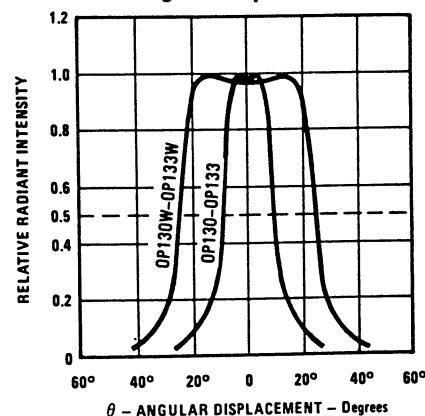
Rise and Fall Time vs.
Forward Current



Normalized Radiant Incidence
vs. Ambient Temperature



Relative Radiant Intensity vs.
Angular Displacement



Optek reserves the right to make changes at any time in order to improve design and to supply the best product possible.

Optek Technology, Inc. 1215 W. Crosby Road Carrollton, Texas 75006 (972)323-2200 Fax (972)323-2396