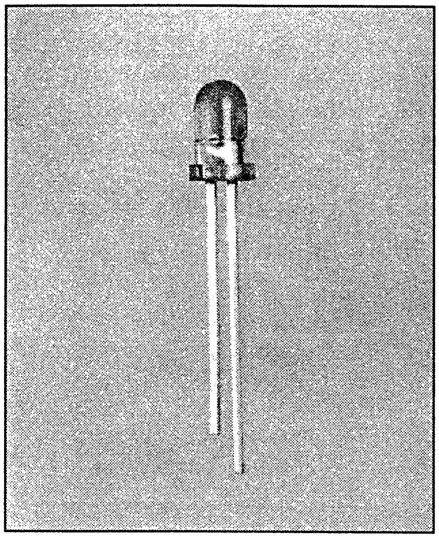
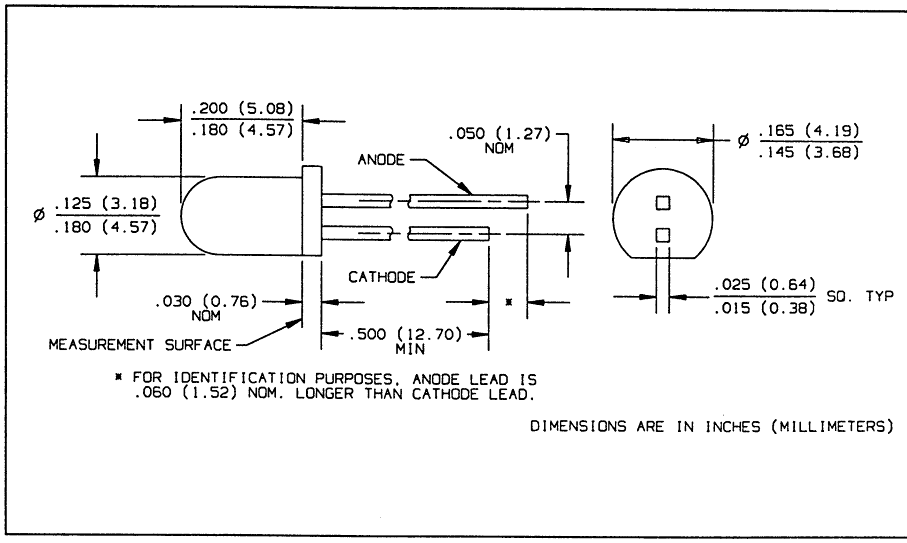
Product Bulletin OP265A
June 1996

OPTEK

GaAlAs Plastic Infrared Emitting Diodes
Types OP265A, OP265B, OP265C, OP265D





Features

- Narrow irradiance pattern
- Mechanically and spectrally matched to the OP505, OP535 series devices
- Significantly higher power output than GaAs at equivalent drive currents
- Wavelength matched to silicon's peak response
- T-1 package style

Description

The OP265 series devices are 890nm high intensity gallium aluminum arsenide infrared emitting diodes molded in IR transmissive amber tinted epoxy packages. The narrow irradiance pattern provides high on-axis intensity for excellent coupling efficiency.

Replaces

K6600

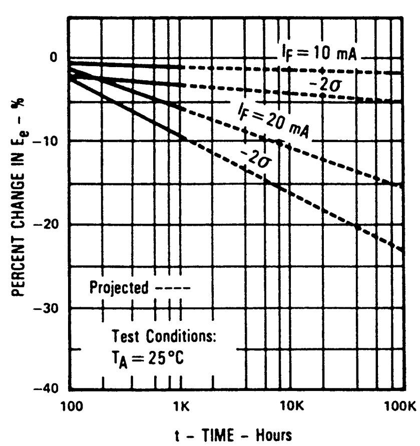
Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)

Reverse Voltage . . . . 2.0 V
Continuous Forward Current . . . . 50 mA
Peak Forward Current (1 µs pulse width, 300 pps) . . . . 3.0 A
Storage and Operating Temperature Range . . . . -40° C to +100° C
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]. . . . . 260° C(1)
Power Dissipation. . . . . 100 mW(2)

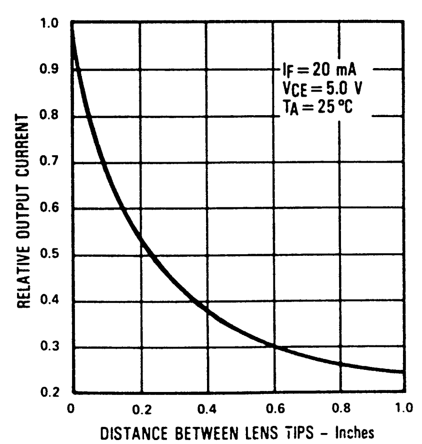
Notes:
(1) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering. A max. of 20 grams force may be applied to the leads when soldering.
(2) Derate linearly 1.33 mW/° C above 25° C.
(3) $E_{e(APT)}$ is a measurement of the average apertured radiant incidence upon a sensing area 0.081" (2.06 mm) in diameter, perpendicular to and centered on the mechanical axis of the lens, and 0.590" (14.99 mm) from the measurement surface. $E_{e(APT)}$ is not necessarily uniform within the measured area.

Typical Performance Curves

Percent Changes in Radiant Intensity vs Time



Coupling Characteristics of OP265 and OP505



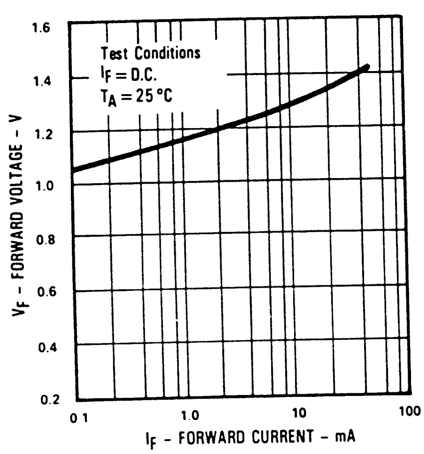
Types OP265A, OP265B, OP265C, OP265D

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

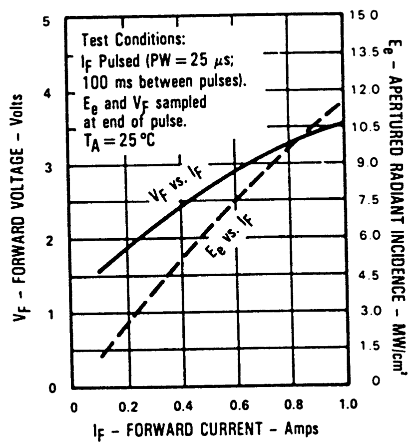
SYMBOL	PARAMETER		MIN	TYP	MAX	UNITS	TEST CONDITIONS
$E_{e(APT)}$	Apertured Radiant Incidence	OP265D	0.54			mW/cm^2	I_F = 20 mA(3)
		OP265C	0.54		3.30	mW/cm^2	I_F = 20 mA(3)
		OP265B	1.65		4.70	mW/cm^2	I_F = 20 mA(3)
		OP265A	2.70			mW/cm^2	I_F = 20 mA(3)
V_F	Forward Voltage				1.80	V	I_F = 20 mA
I_R	Reverse Current				100	µA	V_R = 2 V
λp	Wavelength at Peak Emission			890		nm	I_F = 10 mA
B	Spectral Bandwidth Between Half Power Points			80		nm	I_F = 10 mA
$\Delta\lambda p/\Delta T$	Spectral Shift with Temperature			+0.18		nm/° C	I_F = Constant
θ_{HP}	Emission Angle at Half Power Points			18		Deg.	I_F = 20 mA
t_r	Output Rise Time			500		ns	$I_{F(PK)}$ = 100 mA, PW = 10 µs, D.C. = 10%
t_f	Output Fall Time			250		ns	

Typical Performance Curves

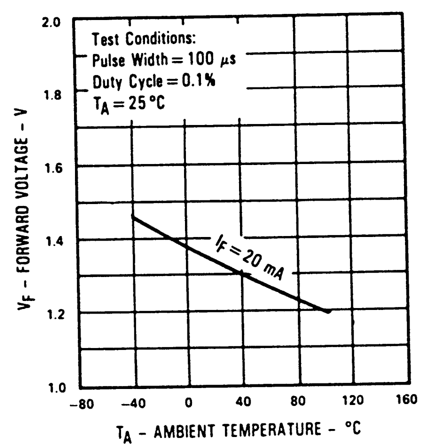
Forward Voltage vs Forward Current



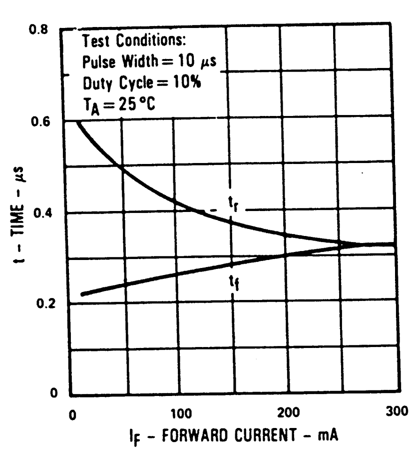
Forward Voltage and Radiant Incidence vs Forward Current



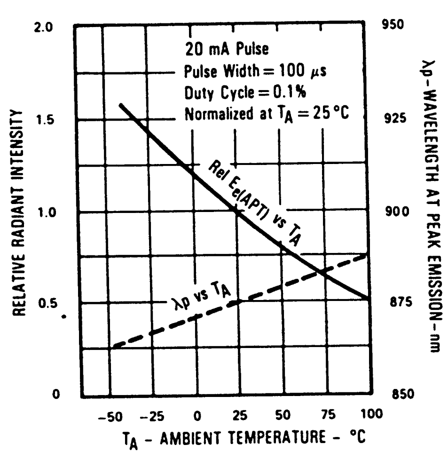
Forward Voltage vs Ambient Temperature



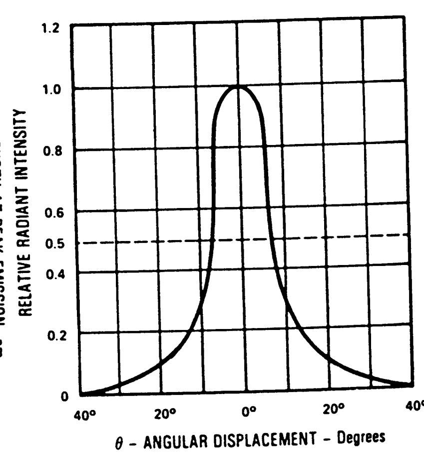
Rise Time and Fall Time vs Forward Current



Relative Radiant Intensity and Wavelength at Peak Emission vs Ambient Temperature



Relative Radiant Intensity vs Angular Displacement



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