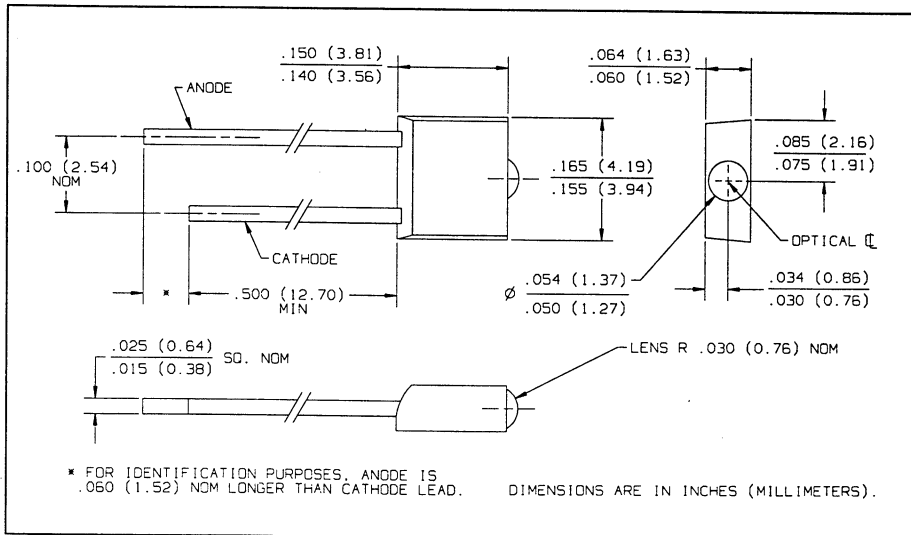
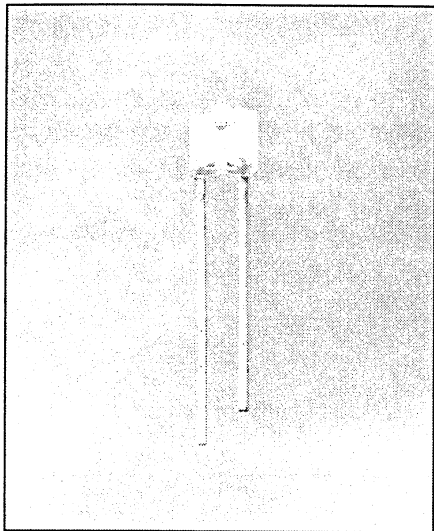


GaAlAs Plastic Infrared Emitting Diodes

Types OP269A, OP269B, OP269C



Features

- Integral lens for narrow beam angle
- Easily stackable on 0.100 inch (2.54 mm) hole centers
- Mechanically and spectrally matched to the OP509 phototransistor series

Description

The OP269 series are gallium aluminum arsenide infrared emitting diodes molded in "end looking" miniature clear packages. The molded lens insures improved uniformity of lens magnification from unit to unit. The OP269 series provides a broad range of on-line and radiant intensities and has considerable design flexibility due to its small size. These devices are mechanically and spectrally matched to the OP509 series of phototransistors. The wavelength at peak emission for this series is 890 nm.

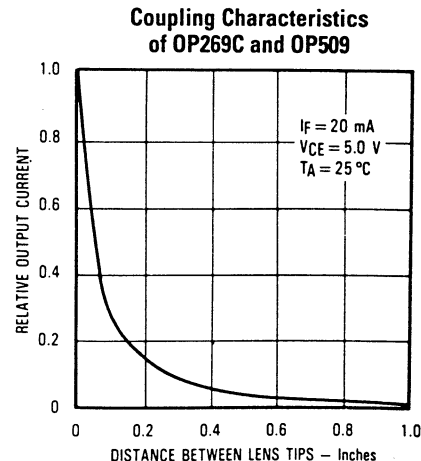
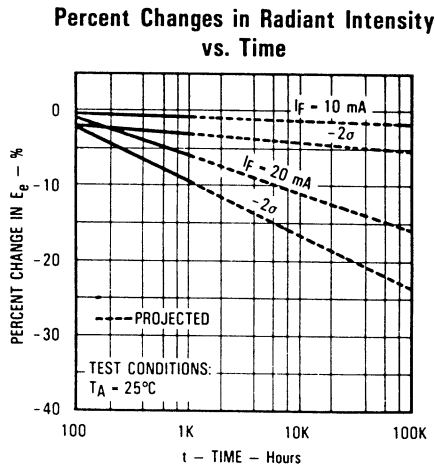
Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)

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

Notes:

- (1) RMA flux is recommended. Duration can be extended to 10 seconds max. when flow soldering. Maximum 20 grams force may be applied to the leads when soldering.
- (2) Derate linearly $1.33\text{mW}/^\circ\text{C}$ above 25°C .
- (3) $E_{e(\text{APT})}$ is a measurement of the average apertured radiant incidence upon a sensing area 0.180" (4.57 mm) in diameter, perpendicular to and centered on the mechanical axis of the lens, and 0.653" (16.6 mm) from the lens tip. $E_{e(\text{APT})}$ is a measurement of the average radiant intensity within the cone formed by the above conditions. $E_{e(\text{APT})}$ is not necessarily uniform within the measured area.

Typical Performance Curves



Types OP269A, OP269B, OP269C

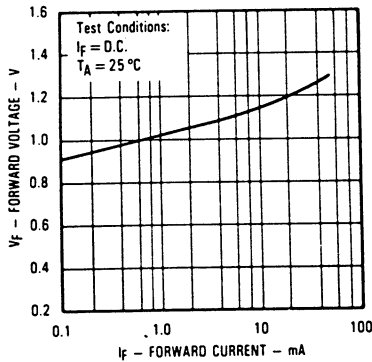
Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

INFRARED
EMITTING
DIODES

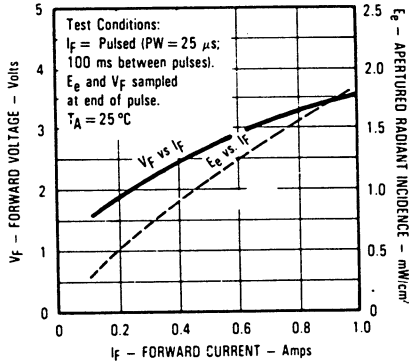
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
$E_e(\text{APT})$	Apertured Radiant Incidence	OP269C 0.34 OP269B 0.42 OP269A 0.58		0.82	mW/cm^2	$I_F = 20\text{ mA}^{(3)}$
V_F	Forward Voltage			1.80	V	$I_F = 20\text{ mA}$
I_R	Reverse Current			100	μA	$V_R = 2.0\text{ V}$
λ_p	Wavelength at Peak Emission		890		nm	$I_F = 20\text{ mA}$
B	Bandwidth Between Half Power Points		80		nm	$I_F = 10\text{ mA}$
$\Delta\lambda_p/\Delta T$	Spectral Shift with Temperature		+0.18		$\text{nm}/^\circ\text{C}$	$I_F = \text{Constant}$
θ_{HP}	Emission Angle at Half Power Points		46		Deg.	$I_F = 20\text{ mA}$
t_r	Output Rise Time		500		ns	$I_F(\text{PK}) = 100\text{ mA}$, $\text{PW} = 10\ \mu\text{s}$, D.C. = 10.0%
t_f	Output Fall Time		250		ns	$I_F(\text{PK}) = 100\text{ mA}$, $\text{PW} = 10\ \mu\text{s}$, D.C. = 10.0%

Typical Performance Curves

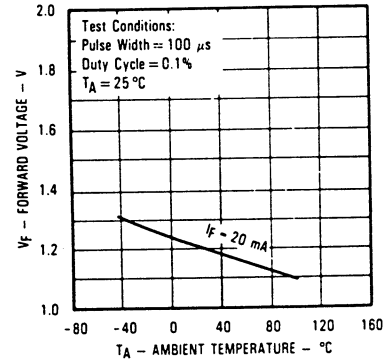
Forward Voltage vs. Forward Current



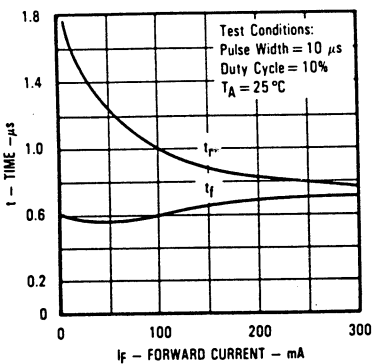
Forward Voltage and Radiant Incidence vs. Forward Current



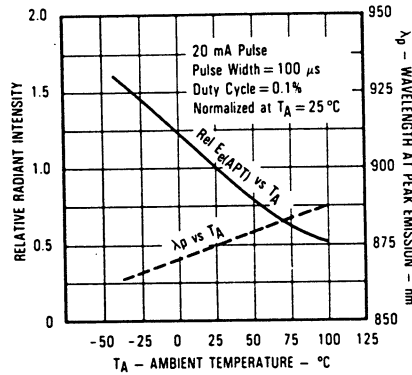
Forward Voltage vs. Ambient Temperature



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

