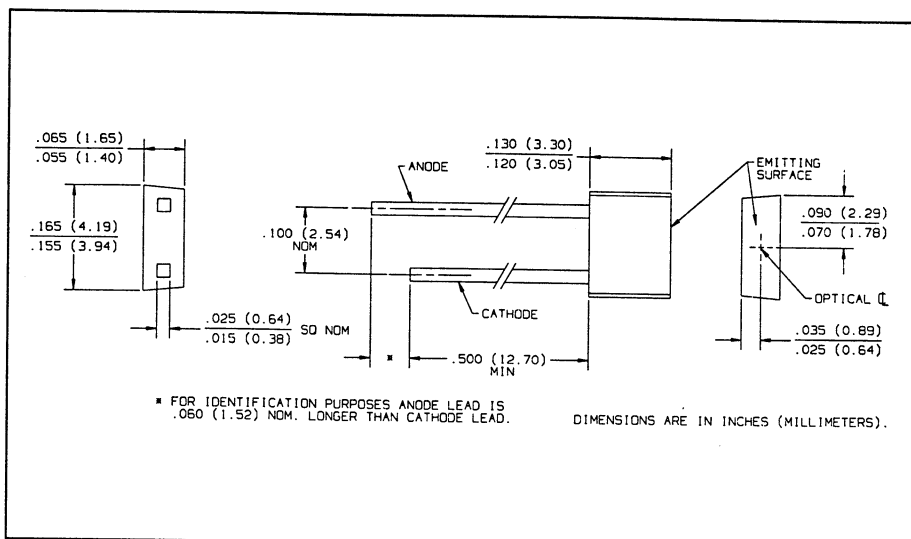
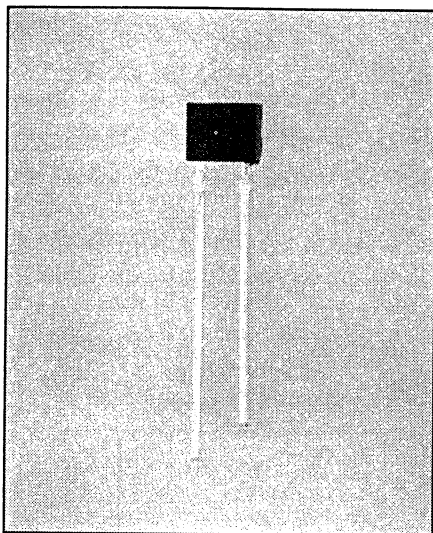


GaAlAs Plastic Infrared Emitting Diodes

Types OP268FA, OP268FB, OP268FC



Features

- Flat lensed for wide radiation angle
- Easily stackable on 0.100" (2.54 mm) hole centers
- Mechanically and spectrally matched to the OP508F series phototransistor and the OP538F series photodarlington

Description

The OP268F series contains a gallium aluminum arsenide infrared emitting diode mounted in an "end-looking" miniature black package. This device has a wide radiation angle due to its flat emitting surface. Small size and 0.100" (2.54 mm) lead spacing allow considerable design flexibility.

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

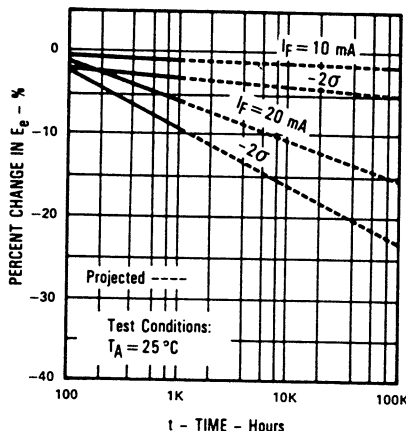
Continuous Forward Current	50 mA
Peak Forward Current (Pulse Width = 1 μs , 300pps)	3.0 A
Reverse Voltage	2.0 V
Storage and Operating Temperature Range	-40°C to $+100^\circ\text{C}$
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 sec. with soldering iron]	$260^\circ\text{C}^{(1)}$
Power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

Notes:

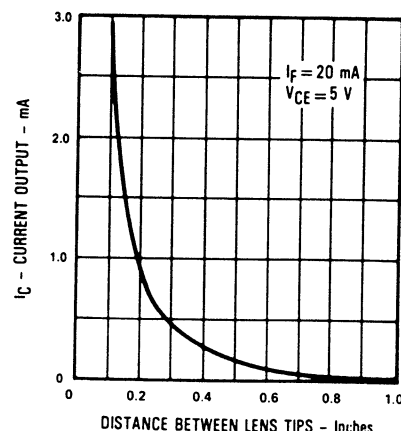
- (1) RMA flux is recommended. Duration can be extended to 10 seconds max. when flow soldering. Maximum 20 grams force may be applied to the leads when soldering.
- (2) Derate linearly 1.33 mW/ $^\circ\text{C}$ above 25°C .
- (3) $E_{e(\text{APT})}$ is a measurement of the average apertured radiant energy incident upon a sensing area 0.081" (2.06 mm) in diameter perpendicular to and centered on the mechanical axis of the "emitting surface" and 0.400" (10.16 mm) from the measurement surface. $E_{e(\text{APT})}$ is not necessarily uniform within the measured area.

Typical Performance Curves

Percent Changes in Radiant Intensity vs Time



Coupling Characteristics of OP268F and OP508F/OP538F



Types OP268FA, OP268FB, OP268FC

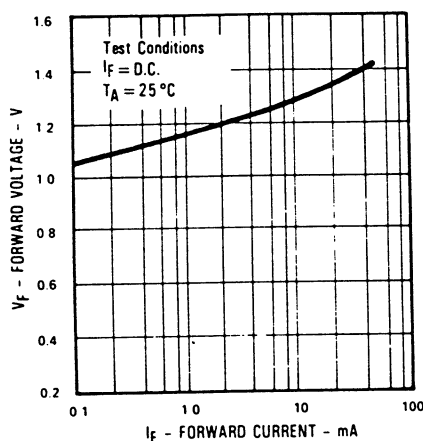
Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
$E_e(\text{APT})$	Apertured Radiant Incidence	OP268FC 0.36 OP268FB 0.45 OP268FA 0.64		0.99	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		104		Deg.	$I_F = 20\text{ mA}$
t_r	Output Rise Time		500		ns	$I_{F(PK)} = 100\text{ mA}$, $PW = 10.0\text{ }\mu\text{s}$, D.C. = 10.0%
t_f	Output Fall Time		250		ns	

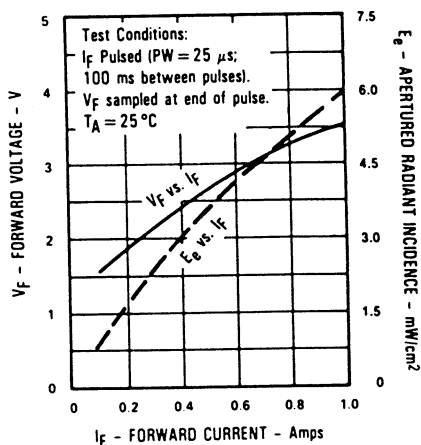
INFRARED
EMITTING
DIODES

Typical Performance Curves

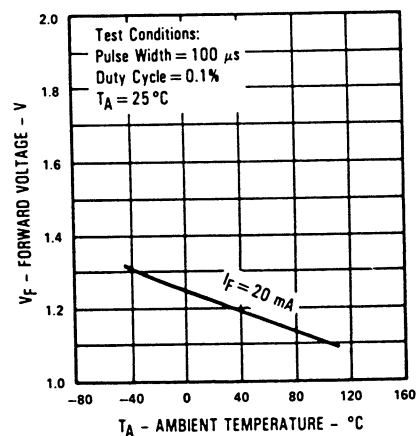
Forward Voltage vs
Forward Current



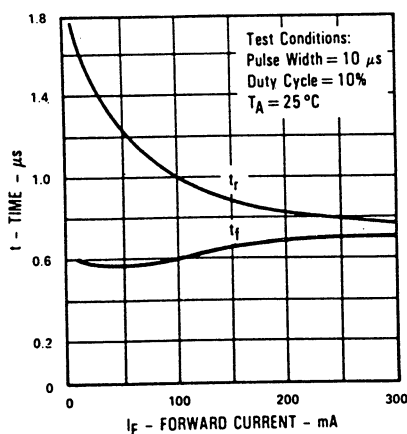
Forward Voltage and Radiant Incidence
vs Forward Current



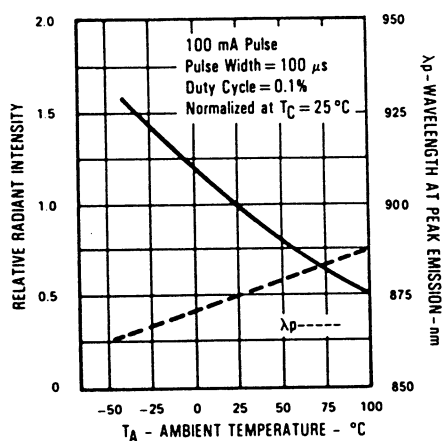
Forward Voltage vs
Ambient Temperature



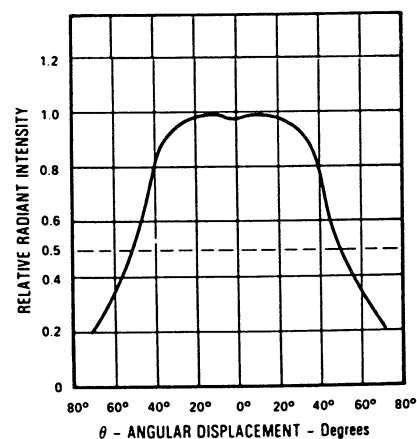
Rise Time and Fall Time vs
Forward Current



Relative Radiant Intensity and Wavelength
at Peak Emission vs Ambient Temperature



Relative Radiant Intensity vs
Angular Displacement



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

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