

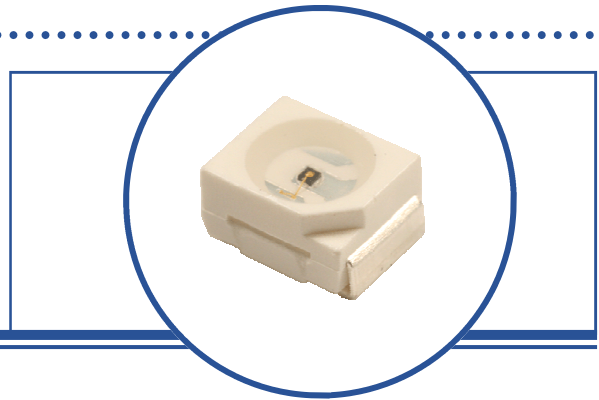
Infrared Light Emitting Diode

OP280



Features:

- High power GaAIAs—OP280, 880 nm center wavelength
- PLCC-2 package style
- Wide beam angle 100°
- Suitable for single device or array applications



Description:

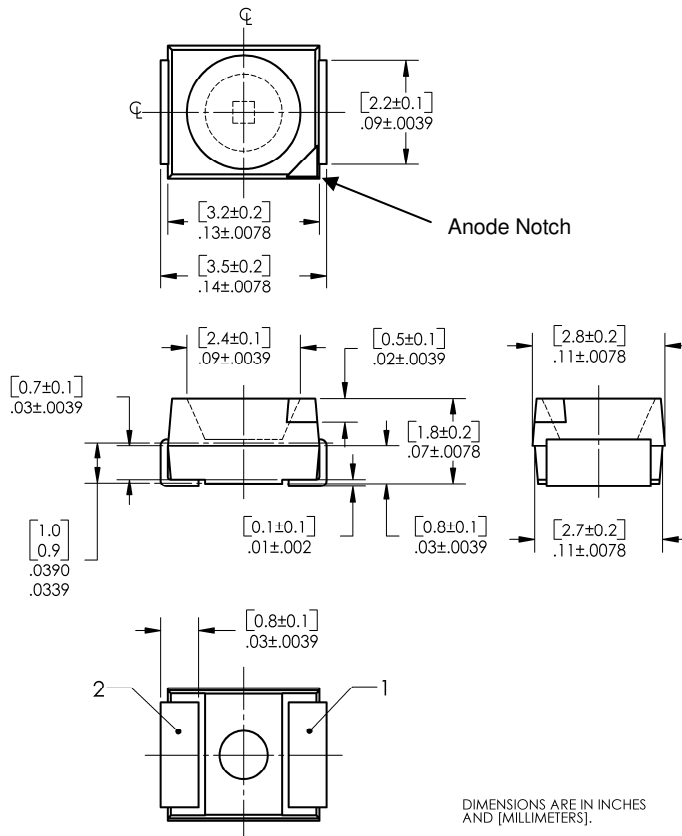
The **OP280** is a GaAIAs infrared LED mounted in a plastic leadless PLCC-2 SMD package with a flat lens window that allows a wide beam angle. The PLCC-2 packaging is suitable for single device or array applications. *The OP280 Series LEDs is mechanically and spectrally matched to OP580 series phototransistors.*

Please refer to Application Bulletins 208 and 210 for additional design information and reliability (degradation) data.

Applications:

- Non-contact position sensing
- Machine automation
- Datum detection
- Optical encoding

Ordering Information		
Part Number	LED Peak Wavelength	Total Beam Angle
OP280	880 nm	100°



Pin #	LED
1	Anode
2	Cathode



RoHS

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

Infrared Light Emitting Diode

OP280



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

Storage Temperature Range	-40° C to +100° C
Operating Temperature Range	-25° C to +85° C
Reverse Voltage	2.0 V
Peak Forward Current [1 μ s pulse width, 300 pps]	1.0 A
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 seconds with soldering iron]	260° C ⁽¹⁾
Power Dissipation	130 mW ⁽²⁾

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
--------	-----------	-----	-----	-----	-------	-----------------

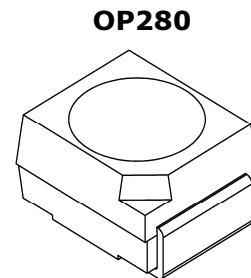
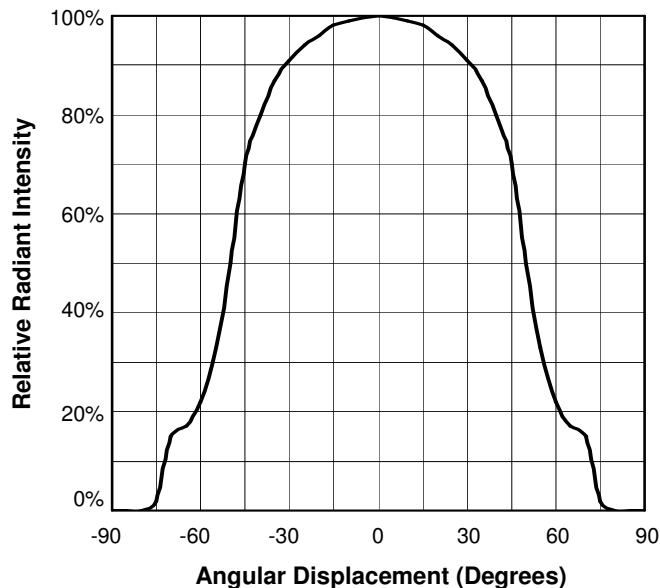
Input Diode

$E_{E(APT)}$	Apertured Radiant Incidence	0.5	-	-	mW/cm ²	$I_F = 20\text{ mA}^{(3)}$
V_F	Forward Voltage	-	-	1.50	V	$I_F = 50\text{ mA}$
I_R	Reverse Current	-	-	100	μA	$V_R = 2.0\text{ V}$
λ_P	Wavelength at Peak Emission OP280	-	890	-	nm	$I_F = 20\text{ mA}$
θ_{HP}	Emission Angle at Half Power Points	-	100	-	Degree	$I_F = 20\text{ mA}$
t_r	Output Rise Time	-	-	500	ns	$I_{F(PK)}=100\text{ mA}$, $PW=10\ \mu\text{s}$, and D.C.=10.0%
t_f	Output Fall Time	-	-	500	ns	

Notes:

- Solder time less than 5 seconds at temperature extreme.
- Derate linearly at 2.17 mW/° C above 25° C.
- $E_{E(APT)}$ is a measurement of the 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

Relative Radiant Intensity vs. Angular Displacement

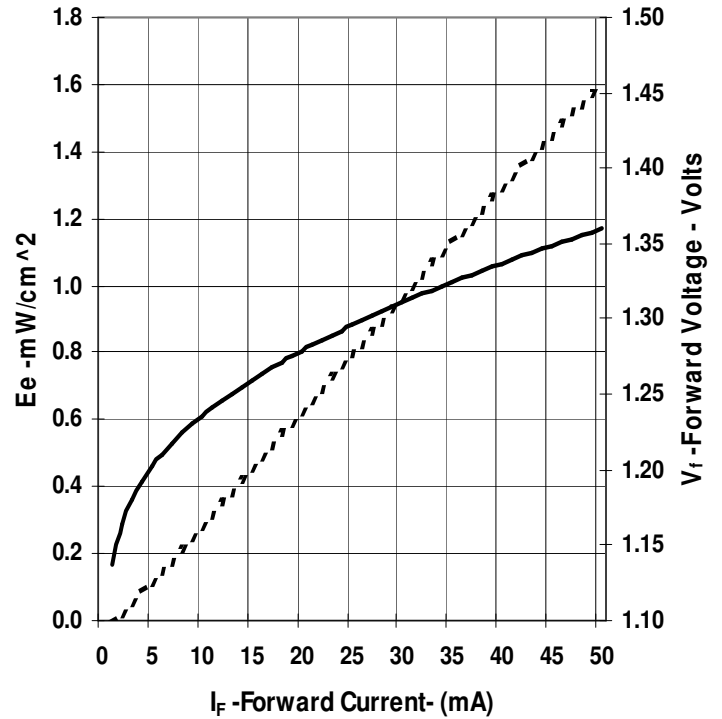
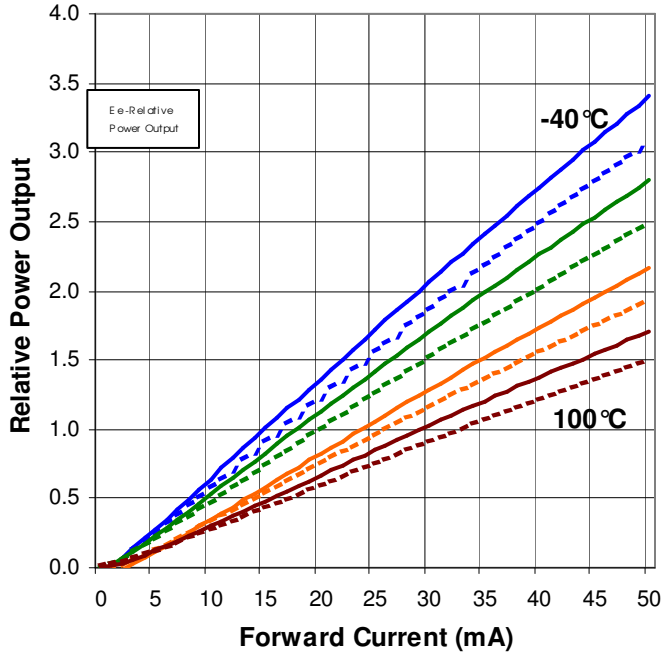


OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

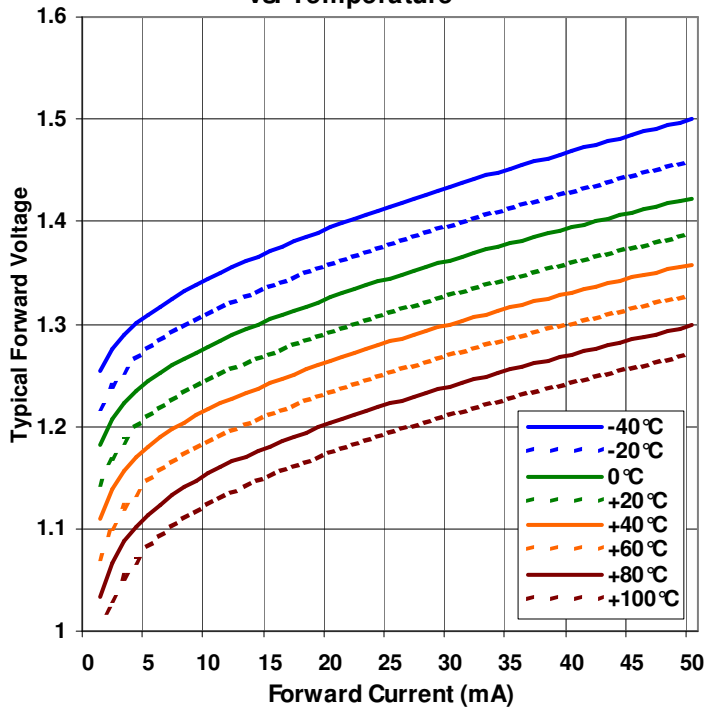
OP280

**Aperture Radiant Incidence
vs. Forward Current
vs. Forward Voltage**

**Power Out vs. Forward Current
vs. Temperature**



**Forward Voltage vs. Forward Current
vs. Temperature**



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