

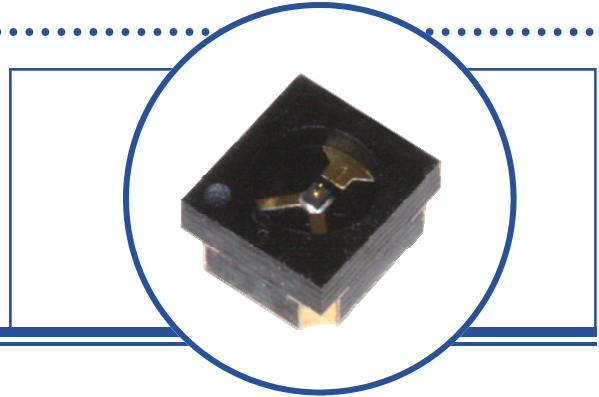
# Infrared Light Emitting Diode

## OPR2800, OPR2800T



### Features:

- High-power GaAIAs
- Matches PLCC-2 footprint
- 880 nm wavelength
- Wide beam angle
- Wide operating temperature range (-40° C to +100° C)



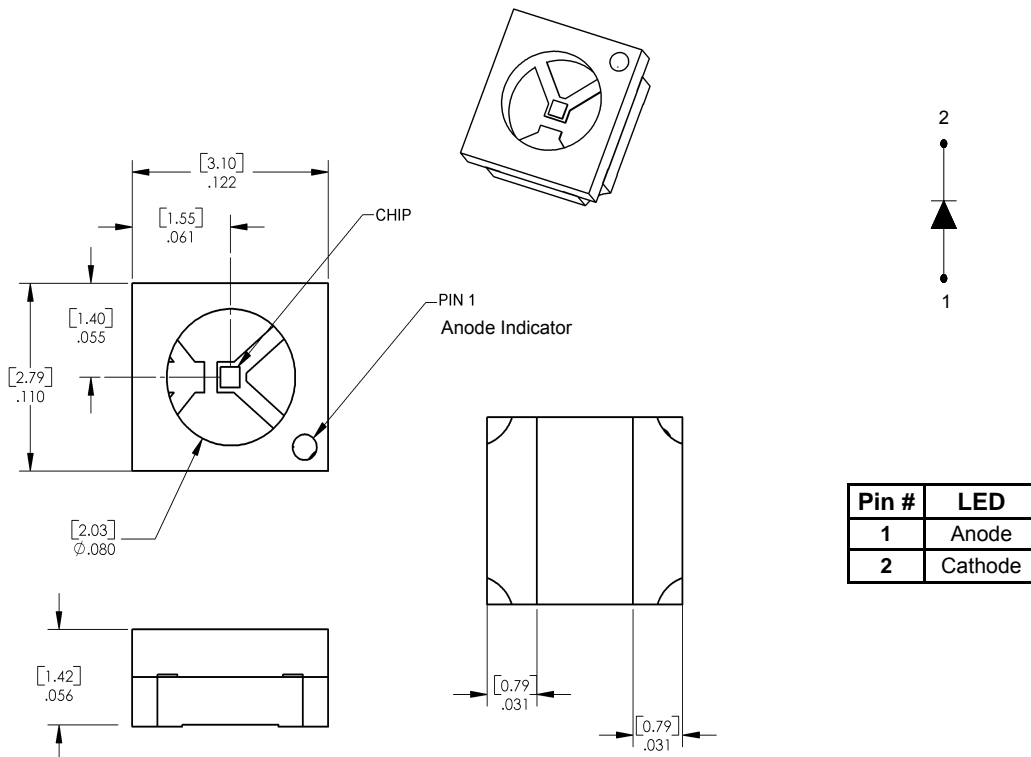
### Description:

The **OPR2800** is a GaAIAs infrared LED mounted in a surface mount chip carrier (SMCC) package with a flat lens window that allows a wide beam angle. The SMCC format has a lower height profile than the PLCC-2 package and mounts in the same footprint. The device is suitable for use in single device or array applications. The OPR2800 is spectrally matched to the OPR5500 phototransistor.

### Applications:

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

Ordering Information			
Part Number	LED Peak Wavelength	Total Beam Angle	Packaging
OPR2800	880 nm	100°	Waffle Pack
OPR2800T			Tape & Reel



RoHS

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

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

Storage Temperature Range	-40° C to +100° C
Operating Temperature Range	-40° C to +100° C
Reverse Voltage	30 V
Continuous Forward Current	50 mA
Solder reflow time within 5° C of peak temperature is 20 to 40 seconds <sup>(1)</sup>	250° C
Power Dissipation	130 mW <sup>(2)</sup>

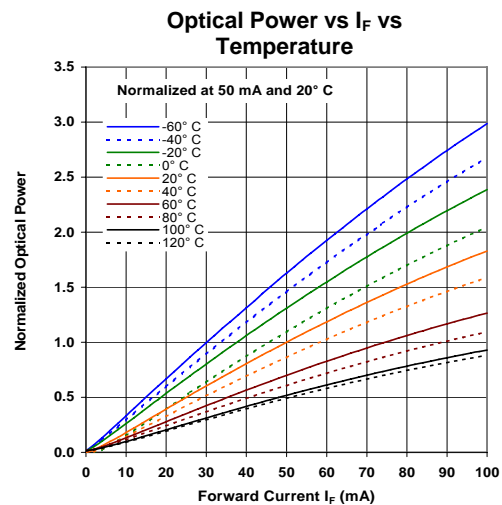
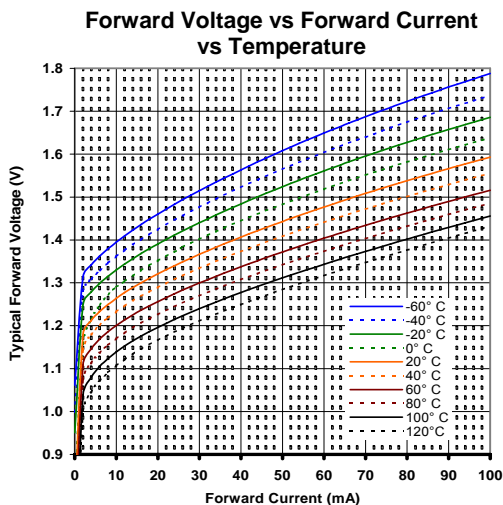
### Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
$E_{E(APT)}$	Apertured Radiant Incidence	0.2	-	-	mW/cm <sup>2</sup>	$I_F = 20\text{ mA}$ <sup>(3)</sup>
$V_F$	Forward Voltage	-	-	1.50	V	$I_F = 50\text{ mA}$
$I_R$	Reverse Current	-	-	100	$\mu\text{A}$	$V_R = 2.0\text{ V}$
$\lambda_P$	Wavelength at Peak Emission		890	-	nm	$I_F = 10\text{ mA}$
$\theta_{HP}$	Emission Angle at Half Power Points	-	100	-	Degree	$I_F = 20\text{ mA}$
$t_r$	Output Rise Time, Output Fall Time	-	-	500	ns	$I_{F(PK)} = 100\text{ mA}$ , PW = 10 $\mu\text{s}$ , D.C. = 10.0%
$t_f$	Output Rise Time, Output Fall Time	-	-	500	ps	

Notes:

- Solder time less than 5 seconds at temperature extreme.
- Derate linearly at 1.73 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 the measured area.

### OP2800



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