

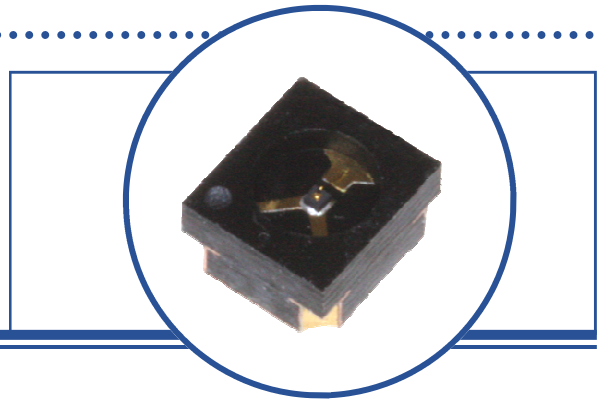
# Infrared Light Emitting Diode

## OPR2800T



### Features:

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



### Description:

The **OPR2800T** 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 OPR2800T is spectrally matched to the OPR5500 phototransistor.

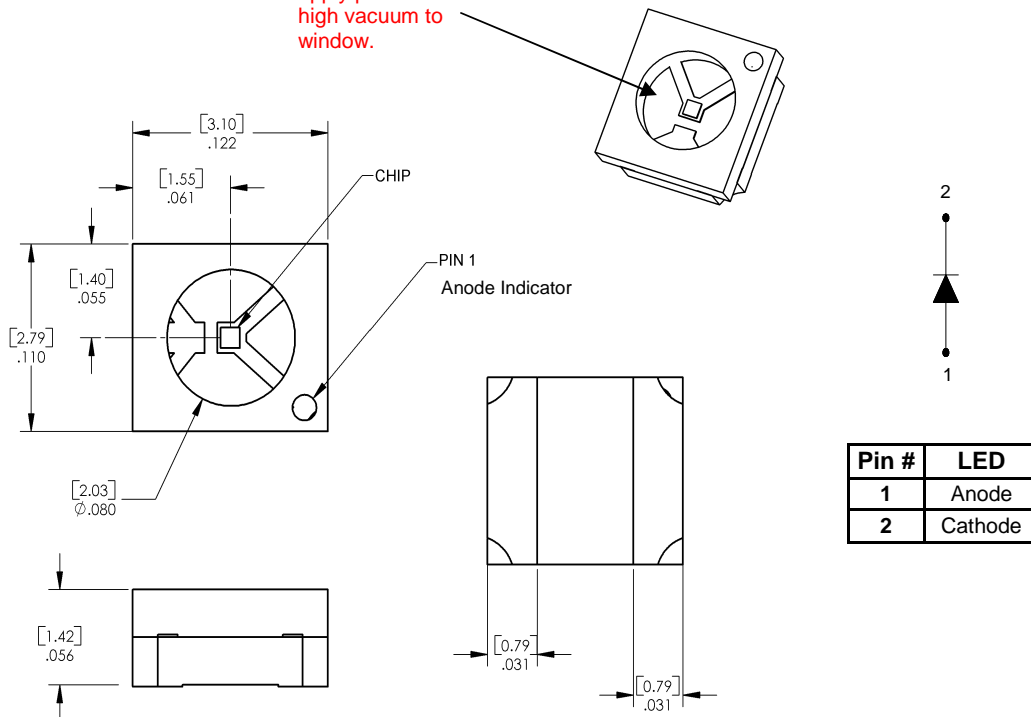
See Application Bulletin 237 for handling instructions.

### Applications:

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

Ordering Information			
Part Number	LED Peak Wavelength	Total Beam Angle	Packaging
OPR2800T	875 nm	100°	Tape & Reel

**Warning:** Front Window is pressure sensitive. Do not apply pressure or high vacuum to window.



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	-55° C to +125° 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>

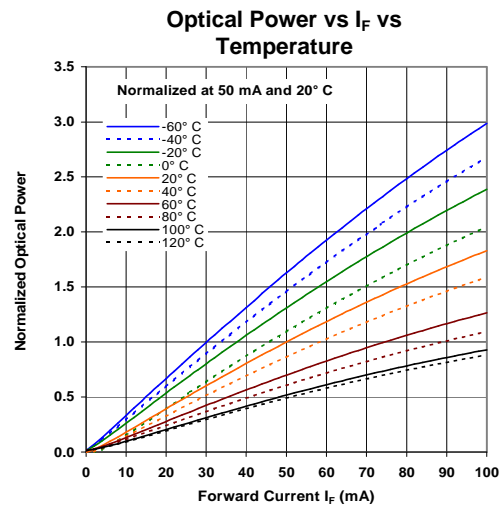
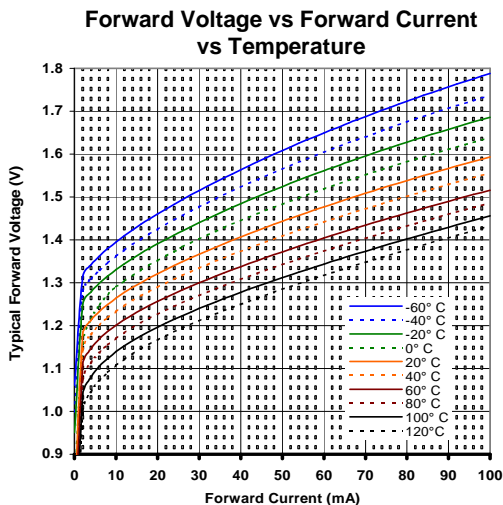
### Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

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		875	-	nm	$I_F = 10\text{ mA}$
$\theta_{HP}$	Emission Angle at Half Power Points	-	100	-	Degree	$I_F = 20\text{ mA}$
$t_r, t_f$	Output Rise Time, Output Fall Time	-	-	500	ns	$I_{F(PK)} = 100\text{ mA}$ , $PW = 10\ \mu\text{s}$ , D.C. = 10.0%

Notes:

- Solder time less than 5 seconds at temperature extreme.
- Derate linearly at 1.39 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.

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