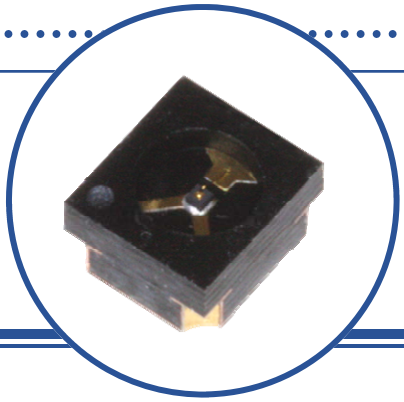
Infrared Light Emitting Diode

OPR2800, OPR2800T

TT electronics
OPTEK Technology

Features:

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



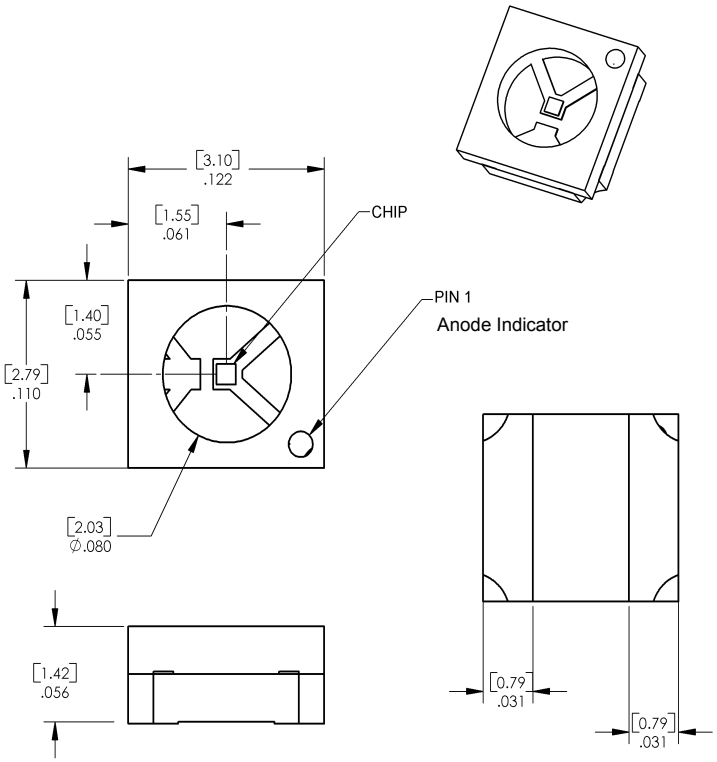
Description:

The **OPR2800** is a GaAlAs 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
- Datum detection
- Machine automation
- Optical encoding

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



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.

OPTEK Technology Inc. — 1645 Wallace Drive, Carrollton, Texas 75006
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Absolute Maximum Ratings (T_A = 25° 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(1)	250° C
Power Dissipation	130 mW(2)

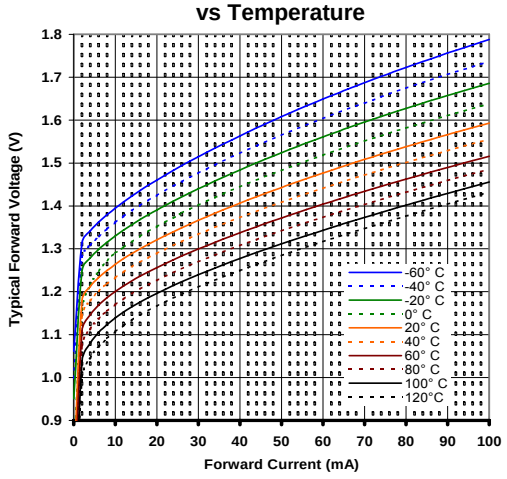
Electrical Characteristics (T_A = 25° C unless otherwise noted)

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

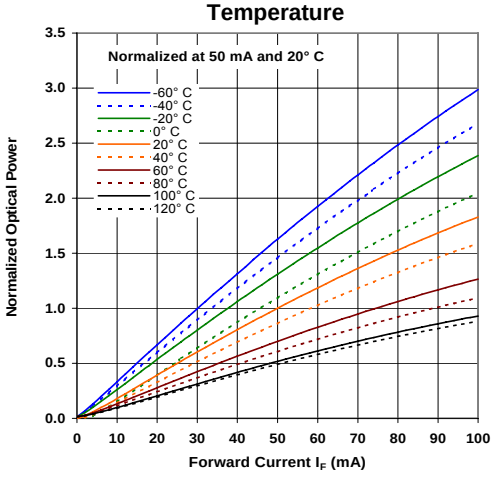
Notes:
1. Solder time less than 5 seconds at temperature extreme.
2. Derate linearly at 1.73 mW/° C above 25° C.
3. $EE_{(APT)}$ is a measurement of the apertured radiant incidence upon a sensing area 0.081" (2.06 mm) in diameter, perpendicular to and centered on the mechanical axis of the lens and 0.590" (14.99 mm) from the measurement surface. $EE_{(APT)}$ is not necessarily uniform within the measured area.

OP2800

Forward Voltage vs Forward Current vs Temperature



Optical Power vs I_F vs Temperature



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