



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# Vertical Cavity Surface Emitting Laser in Plastic Lateral Package



## OPV280

### Features

- 850nm VCSEL Technology
- High thermal stability
- Low drive current/high output intensity
- Narrow and concentric beam angle
- Plastic Lateral Flat Lens Package

### Description

The OPV280 is a high performance 850nm VCSEL packaged for sensing applications. This product's combination of features including high speed, high output power and concentric beam makes it an ideal transmitter for integration into all types of position sensing equipment.

### Applications include:

- ◆ Photoelectric Sensors
- ◆ Light Curtains
- ◆ Position Sensors
- ◆ Encoders

## Technical Data



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

Maximum Forward Peak Current	30 mA
Maximum Reverse Voltage	5 Volts
Storage Temperature	-40 to +125°C
Operating Temperature	-40 to +85°C
Soldering Lead Temperature	260°C for 10 Seconds



Additional laser safety information can be found on the Optek website. See application #221. Classification is not marked on the device due to space limitations. See package outline for centerline of optical radiance. Operating devices beyond maximum rating may cause devices to exceed rated classification

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# OPV280 Technical Data



## Electrical/Optical Characteristics (at 25 °C unless otherwise specified)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITION
$P_{OT}$	Total Power Out	1.4		4.5	mW	$I_F = 12 \text{ mA}$
$I_{TH}$	Threshold Current	2.0		5.5	mA	Note 1
$V_F$	Forward Voltage			2.15	V	$I_F = 12 \text{ mA}$
$I_R$	Reverse Current			30	nA	$V_R = 5 \text{ V}$
$R_S$	Series Resistance	14		40	ohms	Note 2
$\eta$	Slope Efficiency	0.17			mW/mA	Note 3
$\lambda$	Wavelength	830		860	nm	
$\Delta\lambda$	Optical Bandwidth			0.85	nm	
$\Delta\eta/\Delta T$	Temp Coefficient of Slope Efficiency		-0.40		%/°C	
$\theta$	Beam Divergence		12		Degree	
$\Delta\lambda/\Delta T$	Temp Coefficient of Wavelength		0.06		nm/°C	(0° - 70° C)
$\Delta I_{TH}/\Delta T$	Temp Coefficient of Threshold Current		$\pm 1.5$		mA	(0° - 70° C)
$N_{ri}$	Relative Intensity Noise		-123		dB/Hz	
$\Delta V_F/\Delta T$	Temperature Coefficient for $V_F$		-2.5		mV/°C	

### NOTES:

- (1) Threshold Current is based on the two line intersection method specified in Telcordia GR-468-Core. Line 1 from 6 mA to 8 mA. Line 2 from 0 mA to 2 mA.
- (2) Series Resistance is the slope of the Voltage-Current line from 8 to 12 mA.
- (3) Slope efficiency, is the slope of the best fit LI line from 8 mA above threshold to 12 mA.

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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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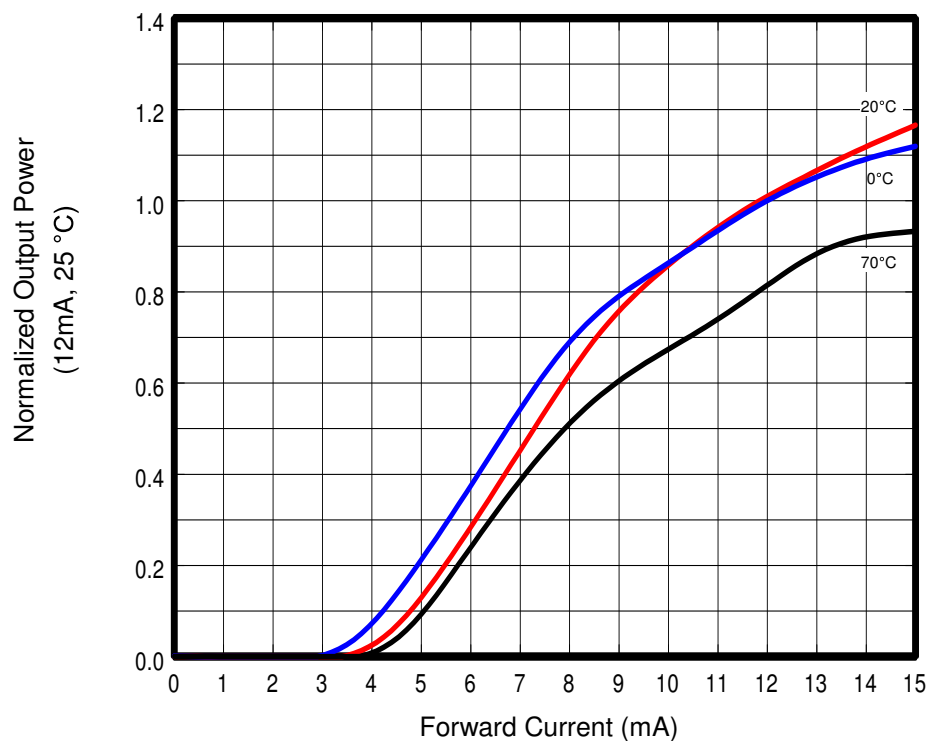
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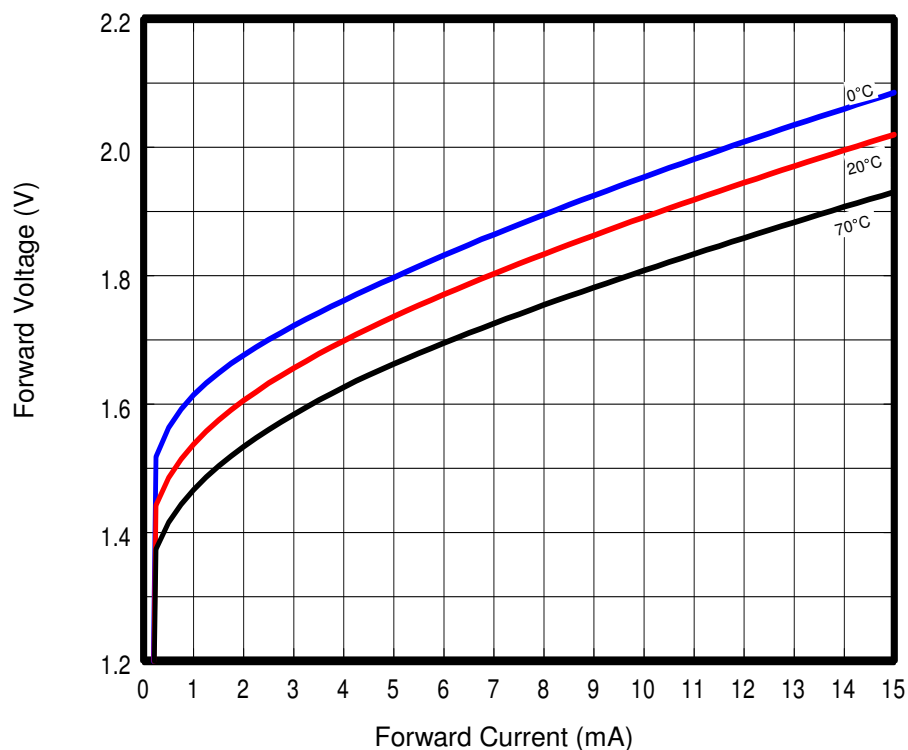
# OPV280 Technical Data



Output Power vs. Forward Current



Forward Voltage vs. Forward Current



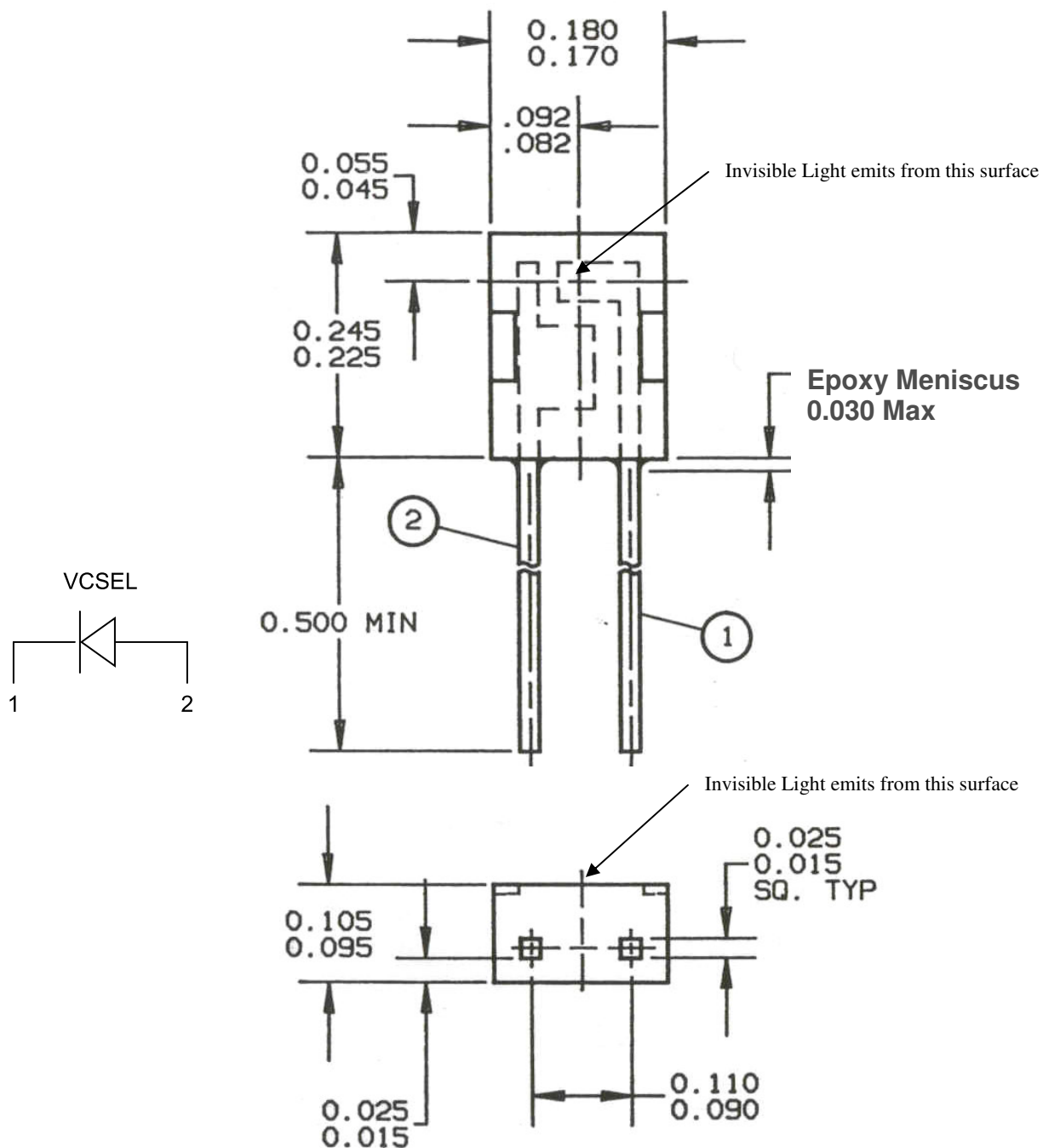
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# OPV280 Technical Data



## Mechanical Dimensions:



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