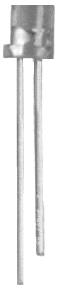
# Plastic Infrared Emitting Diode

## OP265WPS



### Features:

- T-1 (3 mm) package style
- Broad irradiance pattern
- Point source with flat lens
- Higher power output than GaAs at equivalent drive currents
- 850 nm LED

### Description:

The **OP265WPS** *point source* model is a flat-lensed 850 nm diode with a *broad* radiation pattern that provides relatively even illumination over a large area. Its stable forward voltage ($V_F$) vs. temperature characteristic makes this device appropriate for applications where voltage is limited (such as battery operation), while the low rise time/fall time ($t_r/t_f$) makes it ideal for high-speed operation.

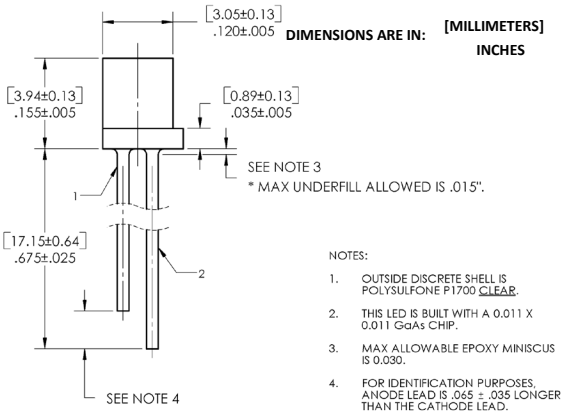
OP265 devices conform to the OP505 and OP535 series devices.

*Please refer to Application Bulletin 210 for additional thermal design information.*

### Applications:

- Space-limited applications
- Applications requiring coupling efficiency
- Precision optical designs
- Battery-operated or voltage-limited applications

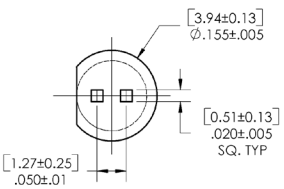
| Ordering Information | | | | | |
|---|---|---|---|---|---|
| **Part Number** | **LED Peak Wavelength** | **Output Power (mW/cm²) Min / Max** | **$I_F$ (mA) Typ / Max** | **Total Beam Angle** | **Lead Length (Min)** |
| **OP265WPS** | 850 nm | .055 / .55 | 20 / 50 | 120° | 0.50" |







| Pin # | LED |
|---|---|
| 1 | Cathode |
| 2 | Anode |




**DISCRETE PIN-OUT**

1 CATHODE

2 ANODE

**CONTAINS POLYSULFONE**

To avoid stress cracking, we suggest using ND Industries' **Vibra-Tite** for thread-locking. **Vibra-Tite** evaporates fast without causing structural failure in OPTEK'S molded plastics.

RoHS

General Note
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# Electrical Specifications

**Absolute Maximum Ratings** ($T_A$ = 25° C unless otherwise noted)

| | |
|---|---|
| Storage and Operating Temperature Range | -40° C to +100° C |
| Reverse Voltage | 2.0 V |
| Continuous Forward Current | 50 mA |
| Peak Forward Current (1 µs pulse width, 300 pps) | 3.0 A |
| Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 seconds with soldering iron] (1) | 260° C |
| Power Dissipation (2) | 100 mW |

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

| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|---|---|---|---|---|---|---|
| **Input Diode** | | | | | | |
| $E_{E(APT)}$ (3) | Apertured Radiant Incidence | 2.70 | - | - | mW/cm$^2$ | $I_F$ = 20 mA |
| $V_F$ | Forward Voltage | 1.00 | - | 1.80 | V | $I_F$ = 20 mA |
| $I_R$ | Reverse Current | - | - | 20 | µA | $V_R$ = 2 V |
| $\lambda_P$ | Wavelength at Peak Emission | - | 850 | - | nm | $I_F$ = 10 mA |
| β | Spectral Bandwidth between Half Power Points | - | 20 | - | nm | $I_F$ = 20 mA |

Notes:

(1) RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering. A maximum of 20 grams force may be applied to the leads when soldering.

(2) Derate linearly at 1.07 mW/° C above 25° C.

(3) $E_{E(APT)}$ is a measurement of the average 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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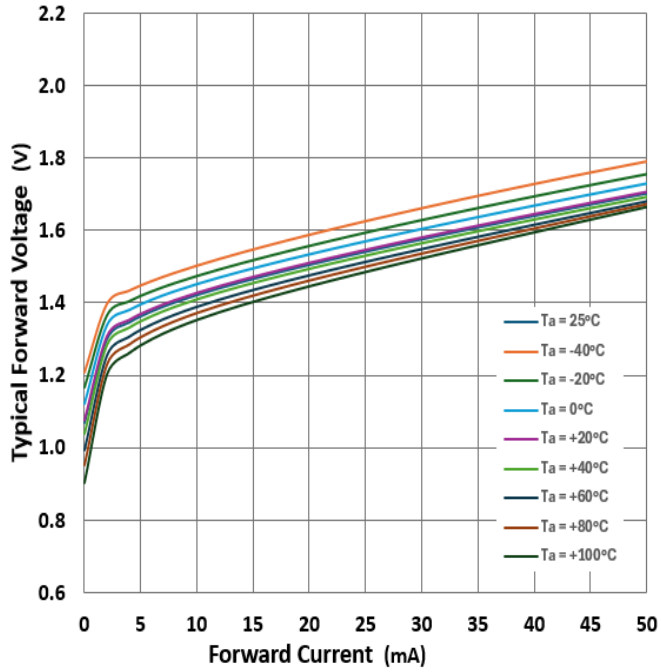


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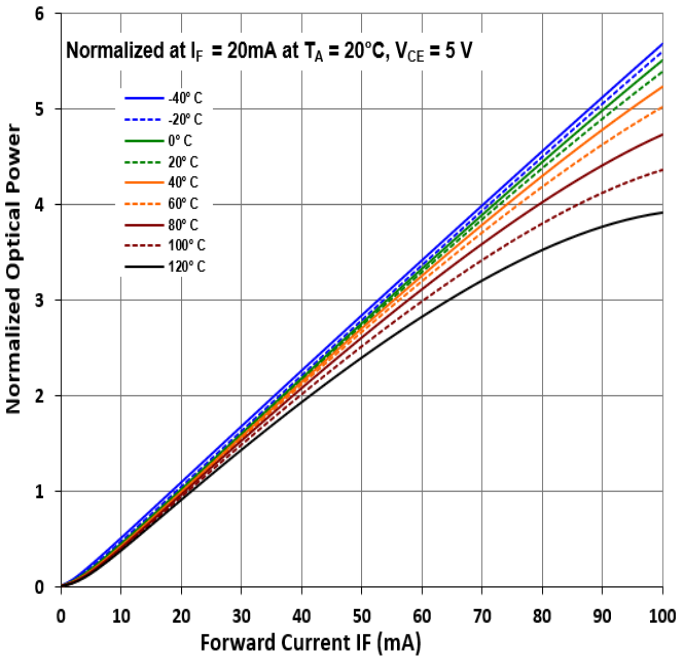
## Typical Performance

**OP265WPS**

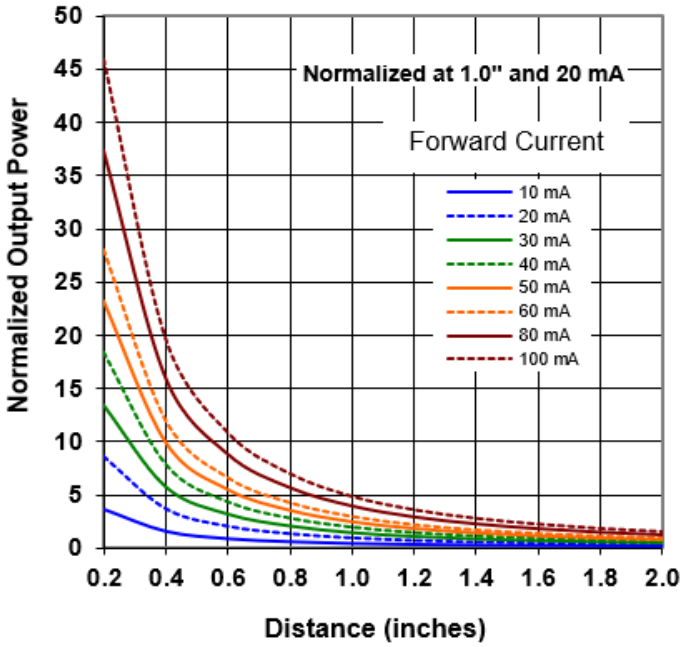
### Forward Current vs Forward Voltage vs Temperature




### Optical Power vs Forward Current vs Temperature




### Distance vs Power vs Forward Current





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