



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!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



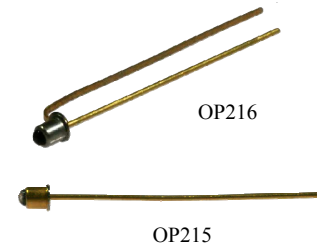
Hermetic Infrared Emitting Diode

OP215, OP216



Features:

- Hermetically sealed package
- Mechanically and spectrally matched to other OPTEK devices
- Designed for direct mount to PCBoard
- Enhanced temperature range
- Excellent coupling efficiency



Description:

Each **OP215** and **OP216** device is an 890 nm gallium aluminum arsenide infrared emitting diode (GaAlAs), mounted in a hermetically sealed “pig tale” package with an enhanced temperature range and a narrow irradiance pattern that provides high on-axis intensity for excellent coupling efficiency. These devices offer significantly higher power output than GaAs at equivalent drive currents and have a wavelength that is matched to silicon’s peak response. Their small package size permits high device density mounting.

The **OP216** series devices provide an additional mounting tab connected to the Cathode/Case.

All these LEDs are mechanically and spectrally matched to the OP300 series, OP516, OP600 series and OP640 series devices.

Please refer to Application Bulletins 208 and 210 for additional design information and reliability (degradation) data, and to Application Bulletin 202 for pill-type soldering to PCBoard.

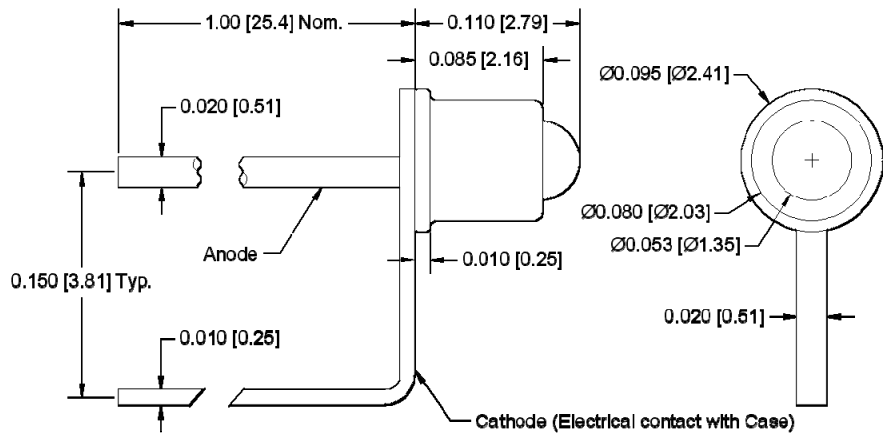
Applications:

- Non-contact reflective object sensor
- Assembly line automation
- Machine automation
- Machine safety
- End of travel sensor
- Door sensor

Ordering Information			
Part Number	LED Peak Wavelength	Optical Power mW/cm ² (Min)	Total Beam Angle
OP215A OP216A	890 nm	1.20	24°
OP215B OP216B		0.60	
OP215C OP216C		0.30	
OP215D OP216D		0.20	



Pin #	LED
1	Anode
2	Cathode



General Note
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics’ own data and is considered accurate at time of going to print.

OPTEK Technology, Inc.
1645 Wallace Drive, Carrollton, TX 75006 | Ph: +1 972 323 2200
www.optekinc.com | www.ttelectronics.com

Hermetic Infrared Emitting Diode

OP215, OP216



Electrical Specifications

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ unless otherwise noted)	
Storage Temperature Range	-65°C to +150°C
Operating Temperature Range	-65°C to +125°C
Reverse Voltage	2.0 V
Continuous Forward Current	100 mA
Peak Forward Current (2μs pulse with 0.1% duty cycle)	1.0 A
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 seconds with soldering iron]	260°C ⁽¹⁾⁽²⁾
Power Dissipation	150 mW ⁽³⁾

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode						
$E_{E(APT)}^{(3)}$	Apertured Radiant Incidence OP216A OP216B OP216C OP216D	1.20 0.60 0.30 0.20	-	-	mW/cm ²	$I_F = 50\text{ mA}^{(4)}$
V_F	Forward Voltage	-	-	1.80	V	$I_F = 50\text{ mA}$
I_R	Reverse Current	-	-	100	μA	$V_R = 2.0\text{ V}$
λ_P	Wavelength at Peak Emission	-	890	-	nm	$I_F = 10\text{ mA}$
B	Spectral Bandwidth between Half Power Points	-	80	-	nm	$I_F = 10\text{ mA}$
$\Delta\lambda/\Delta T$	Spectral Shift with Temperature	-	+0.18	-	nm/°C	$I_F = \text{Constant}$
θ_{HP}	Emission Angle at Half Power Points	-	24	-	Degree	$I_F = 50\text{ mA}$
t_r	Output Rise Time	-	500	-	ns	$I_{F(PK)} = 100\text{ mA}$, $PW = 10\text{ }\mu\text{s}$, and D.C. = 10.0%
t_f	Output Fall Time	-	250	-	ns	

Notes:

1. Refer to Application Bulletin 202 which reviews proper soldering techniques for pill-type devices.
2. No clean or low solids. RMA flux is recommended. Duration can be extended to 10 seconds maximum when flow soldering.
3. Derate linearly 1.50 mW/°C above 25°C.
4. For OP216, $E_{E(APT)}$ is a measurement using a 0.180" (4.57 mm) diameter apertured sensor placed 0.653" (16.59 mm) from the lens tip. $E_{E(APT)}$ is not necessarily uniform within the measured area.

General Note
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

OPTEK Technology, Inc.
1645 Wallace Drive, Carrollton, TX 75006 | Ph: +1 972 323 2200
www.optekinc.com | www.ttelectronics.com

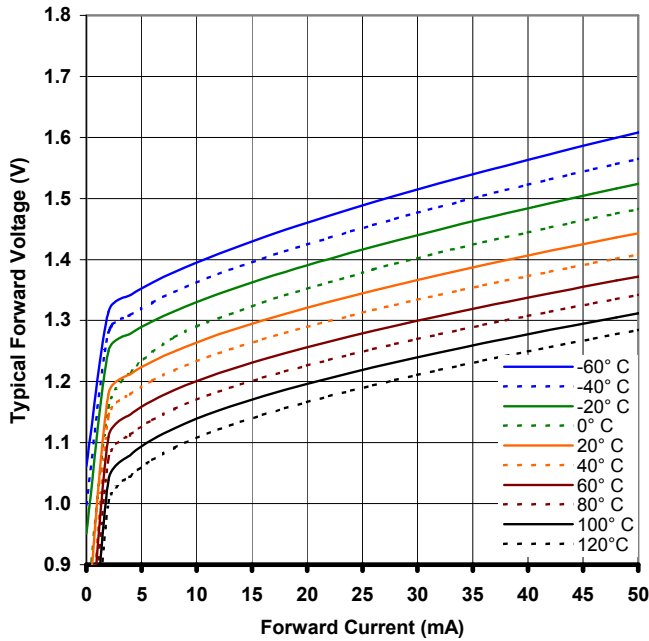
Hermetic Infrared Emitting Diode

OP215, OP216

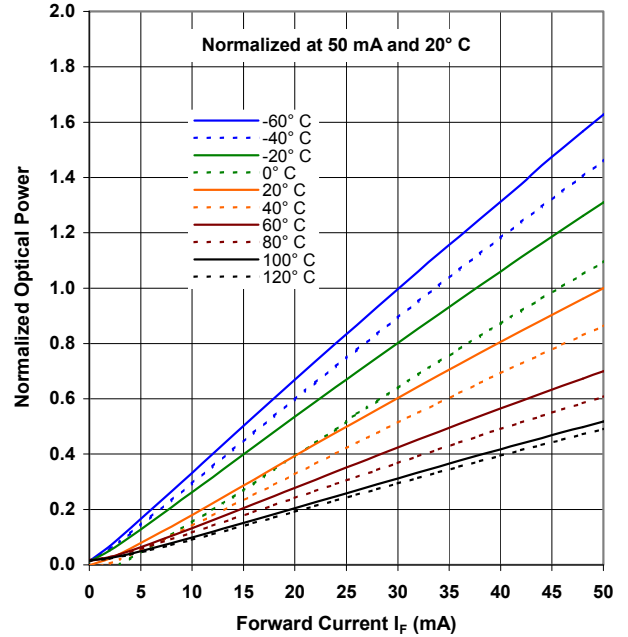


Performance OP215 & OP216

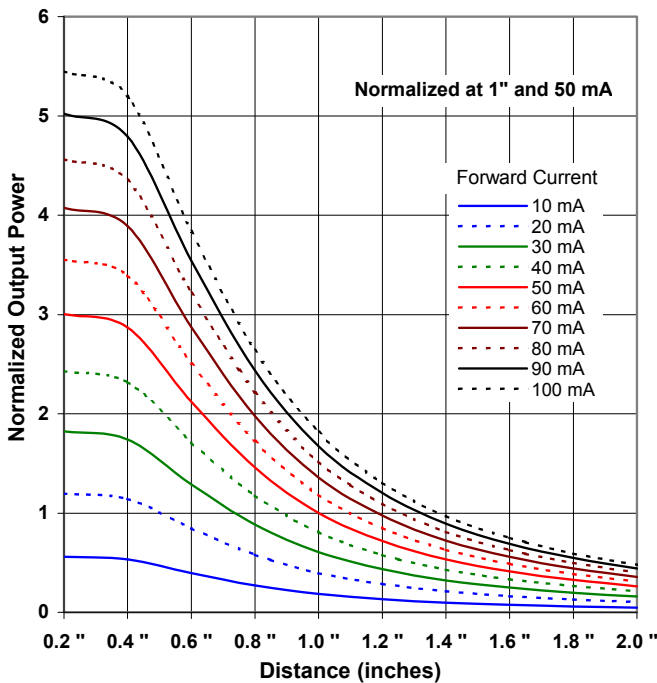
Forward Voltage vs Forward Current vs Temperature



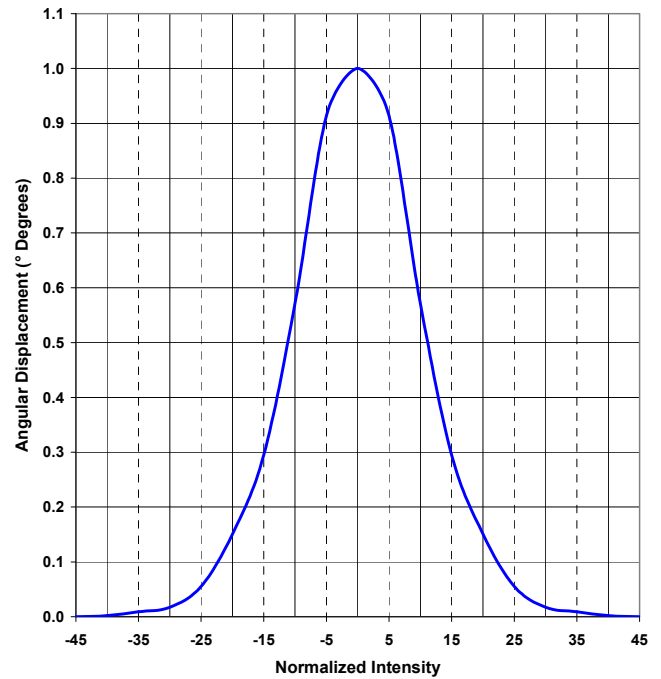
Optical Power vs I_F vs Temperature



Distance vs Output Power vs Forward Current



Normalized Intensity vs Beam Angle



General Note
TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

OPTEK Technology, Inc.
1645 Wallace Drive, Carrollton, TX 75006 | Ph: +1 972 323 2200
www.optekinc.com | www.ttelectronics.com