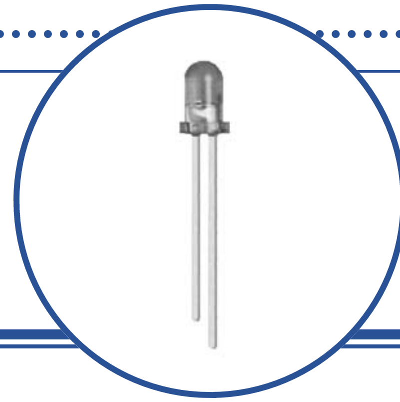
Plastic Infrared Emitting Diode

OP265AA Series

TT electronics
OPTEK Technology



Features:

- T-1 (3 mm) package style
- Narrow irradiance pattern
- Dome lens
- Higher power output than GaAs at equivalent drive currents
- 850 nm diode

Description:

Each device in the **OP265AA** series is a high intensity gallium arsenide infrared emitting diode (GaAIAs) that is molded in an IR transmissive clear or amber-tinted epoxy package with a dome lens. Devices feature a narrow source irradiance pattern and a variety of electrical characteristics. The small T-1 package style makes these devices ideal for space-limited applications.

These devices are mechanically and spectrally matched to other OPTEK products as follows:

OP265 devices conform to the OP505 and OP535 series devices.

Please refer to Application Bulletins 208 and 210 for additional design information and reliability (degradation) data.

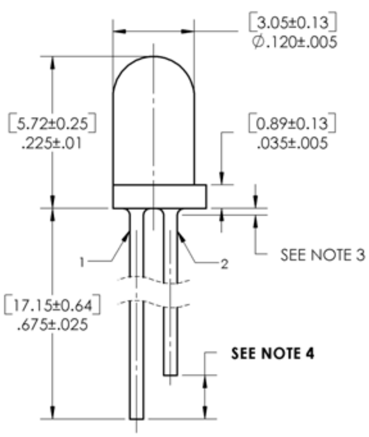
Applications:

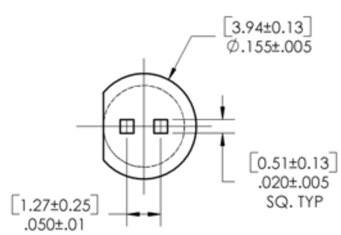
- Space-limited applications
- Applications requiring coupling efficiency
- Battery-operated or voltage-limited applications

Ordering Information

Part Number	LED Peak Wavelength	Output Power (mW/cm^2) Min / Max	I_F (mA) Typ / Max	Total Beam Angle	Lead Length
OP265AA	850 nm	6.0 / NA	20 / 50	18°	0.50”
OP265AB		8.0 / 12.0			
OP265AC		12.0 / 16.0			
OP265AD		16.0 / NA			

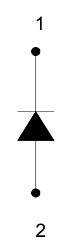
DIMENSIONS ARE IN: [MILLIMETERS] INCHES





DISCRETE PIN-OUT

1 CATHODE
2 ANODE



IMPORTANT:
For identification purposes, ANODE lead is shorter that the CATHODE lead in order to differentiate this product from regular OP265 and/or OP313.

NOTES:

1. OUTSIDE DISCRETE SHELL IS POLYSULFONE P1700 CLEAR.
2. THIS LED IS BUILT WITH A 850nm CHIP.
3. MAX ALLOWABLE EPOXY MINISCUS IS 0.030.
4. FOR IDENTIFICATION PURPOSES, ANODE LEAD IS .065 ± .035 **SHORTER** THAN THE CATHODE LEAD.

Pin #	LED
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

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°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]	260° C[1]
Power Dissipation	100 mW[2]

Notes:
1. RMA flux is recommended. Duration can be extended to 10 second maximum when flow soldering. A maximum of 20 grams force may be applied to the leads when soldering.
2. Derate linearly at 1.33 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.

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

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Input Diode						
$E_{E\ (APT)}$	Apertured Radiant Incidence OP265AA OP265AB OP265AC OP265AD	 5.50 7.50 11.50 15.50	 - - - -	 - 12.5 16.5 -	mW/cm^2	I_F = 20 mA Aperture = 0.081" diameter Distance = 0.590" from seating surface to aperture surface
V_F	Forward Voltage	-	-	1.80	V	I_F = 20 mA
I_R	Reverse Current	-	10	-	µA	V_R= 10 V
λ_P	Wavelength at Peak Emission	-	850	-	nm	I_F = 10 mA
$\Delta\lambda_P / \Delta T$	Spectral Shift with Temperature	-	±0.18	-	nm/°C	I_F = Constant
θ_{HP}	Emission Angle at Half Power Points	-	18	-	Degree	I_F = 20 mA
t_r	Output Rise Time	-	10	-	ns	$I_{F(PK)}$=100 mA, PW=10 µs, D.C.=10.0%
t_f	Output Fall Time	-	10	-	ns	

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OP265 (AA, AB, AC, AD)