

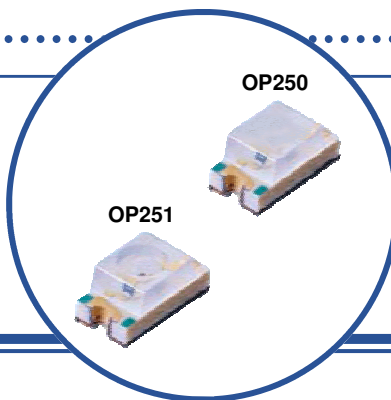
Infrared Light Emitting Diode

OP250, OP251



Features:

- High power GaAIAs
- 1206 miniature SMD package style
- 880 nm wavelength
- Choice of narrow or tight beam angle
- Mechanically and spectrally matched to OP520 series phototransistors



Description:

Each **OP250** and **OP251** device is a GaAIAs infrared LED, mounted in a miniature SMT 1206 size chip carrier that is compatible with most automated mounting equipment. The **OP250** has a flat molded lens that enables a wide beam angle and provides an even emission pattern. The **OP251** has an internal molded lens that enables a tight beam angle and provides an even emission pattern.

OP250 and OP251 are mechanically and spectrally matched to OP520 series phototransistors.

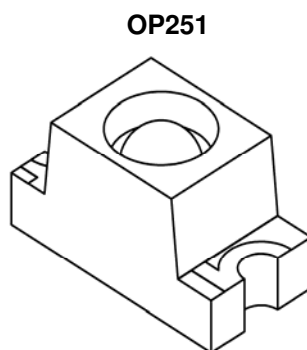
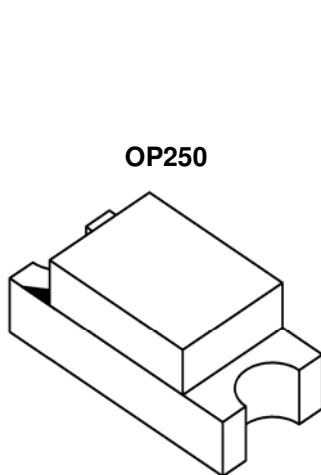
Please refer to Application Bulletins 208 and 210 for additional design information and reliability (degradation) data.

Applications:

- Non-contact position sensing
- Datum detection
- Machine automation
- Optical encoding

Ordering Information

Part Number	LED Peak Wavelength	Output Power (mW / sr) Min / Max	Total Beam Angle	Lead Length
OP250	880 nm	0.45 / NA	160°	N/A
OP251		0.2 / NA	90°	



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.

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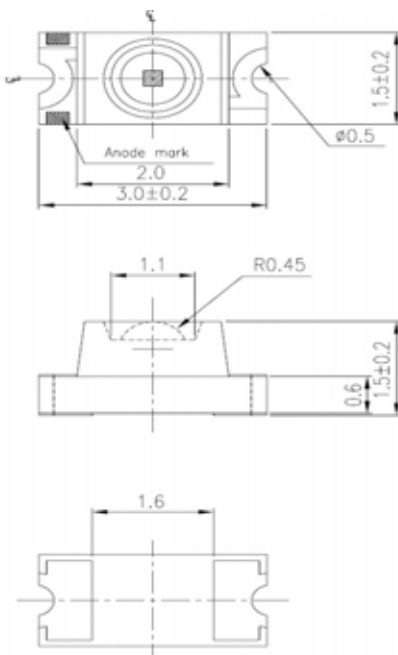
OP250, OP251



OP250

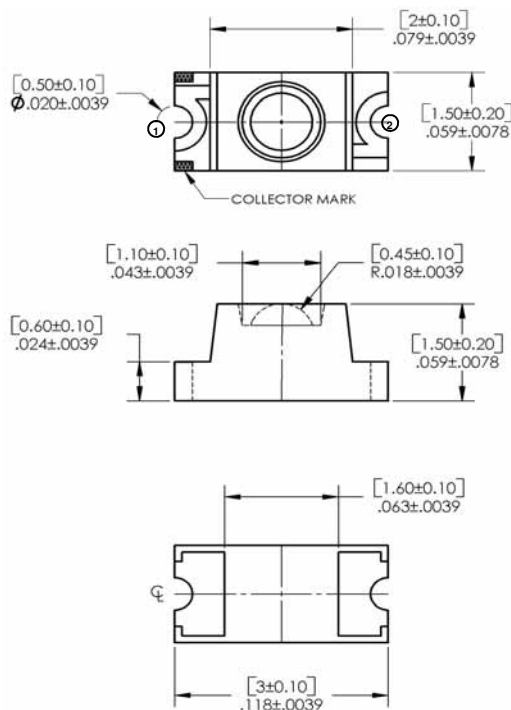


Pin #	LED
1	Anode
2	Cathode



DIMENSIONS ARE IN: [MILLIMETERS]
INCHES

OP251



Pin #	LED
1	Anode
2	Cathode

DIMENSIONS ARE IN: [MILLIMETERS]
INCHES

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

Storage Temperature Range	-40° C to +100° C
Operating Temperature Range	-25° C to +85° C
Reverse Voltage	5 V
Continuous Forward Current	65 mA
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 seconds with soldering iron]	260° C ⁽¹⁾
Power Dissipation	110 mW ⁽²⁾

Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
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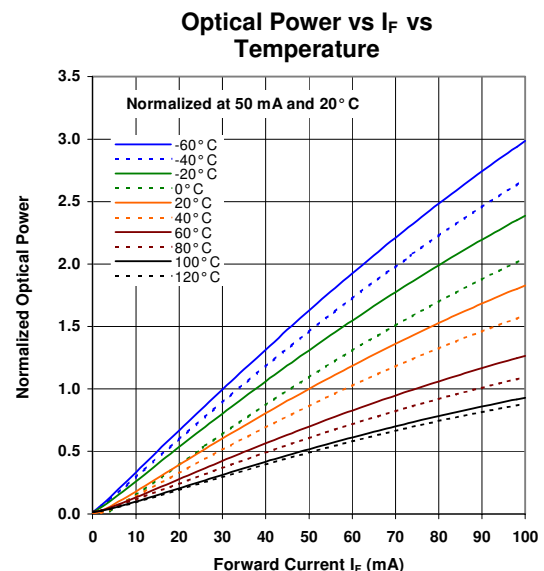
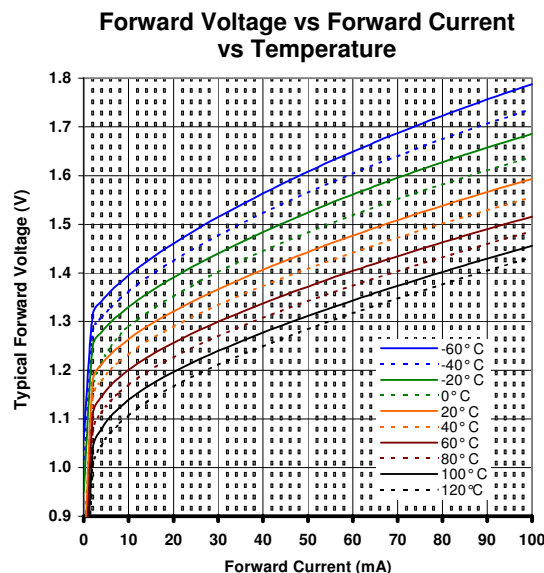
Input Diode

$E_{E(APT)}$	Apertured Radiant Incidence OP250 OP251	0.45 0.2	- -	- -	mW/sr	$I_F = 20\text{ mA}^{(3)}$
V_F	Forward Voltage	-	-	1.60	V	$I_F = 20\text{ mA}$
I_R	Reverse Current	-	-	10	μA	$V_R = 5.0\text{ V}$
λ_P	Wavelength at Peak Emission	-	880	-	nm	$I_F = 20\text{ mA}$
θ_{HP}	Emission Angle at Half Power Points OP250 OP251	- -	160 90	- -	Degree	$I_F = 20\text{ mA}$
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	-	-	500	ns	

Notes:

- Solder time less than 5 seconds at temperature extreme.
- Derate linearly at 2.17 mW/°C above 25° C.
- $E_{E(APT)}$ 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. $E_{E(APT)}$ is not necessarily uniform within the measured area.

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