Infrared Light Emitting Diode OP200, OP250, OP251



Features:

- High power GaAlAs
- Choice of 0805 or 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 **OP200** is a GaAlAs infrared LED mounted in a miniature SMD package, with a flat molded lens that enables a wide beam angle which provides an even emission pattern. Each device is packaged in an 0805 size chip carrier that is compatible with most automated mounting equipment.

Each **OP250** and **OP251** device is a GaAlAs 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.

OP200, 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/cm²) Min / Max	Total Beam Angle	Lead Length				
OP200		0.2 / NA	120°					
OP250	880 nm	0.2 / NA	160°	N/A				
OP251		0.3 / NA	105°					

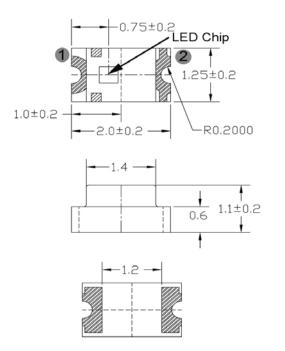


OPTEK reserves the right to make changes at any time in order to improve design and to supply the best product possible.

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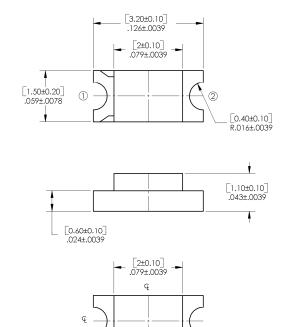


OP200



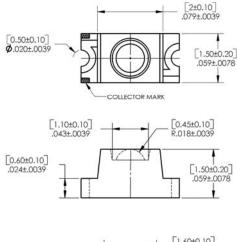
DIMENSIONS ARE IN INCHES AND [MILLIMETERS]

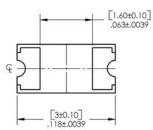
OP250



DIMENSIONS ARE IN INCHES AND [MILLIMETERS]

OP251





DIMENSIONS ARE IN INCHES AND [MILLIMETERS]



Pin#	LED	
1	Anode	
2	Cathode	

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

Storage Temperature Range	-40° C to +85° C
Operating Temperature Range	-25° C to +85° C
Reverse Voltage	30 V
Continuous Forward Current	50 mA
Lead Soldering Temperature [1/16 inch (1.6 mm) from case for 5 seconds with soldering iron]	260° C ⁽¹⁾
Power Dissipation	130 mW ⁽²⁾

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 OP200, OP250 OP251	0.2 0.3	- -	- -	mW/cm ²	I _F = 20 mA ⁽³⁾			
V _F	Forward Voltage	-	-	1.50	V	I _F = 20 mA			
I _R	Reverse Current	-	-	100	μA	V _R = 2.0 V			
λ_{P}	Wavelength at Peak Emission	-	890	-	nm	I _F = 10 mA			
ӨнР	Emission Angle at Half Power Points OP200, OP250 OP251		100 105		Degree	I _F = 20 mA			
t _r	Output Rise Time	-	-	500	ns	I _{F(PK)} = 100 mA, PW = 10 μs, and D.C. = 10.0%			
t _f	Output Fall Time	-	-	500	ns				

Notes:

- 1. Solder time less than 5 seconds at temperature extreme.
- 2. Derate linearly at 2.17 mW/° C above 25° C.
- 3. 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.

OP200, OP250, OP251

