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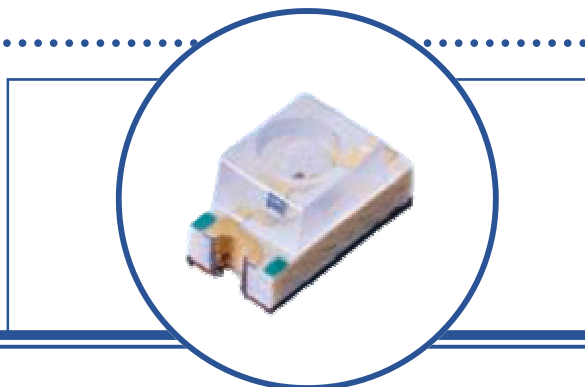
[sales@integrated-circuit.com](mailto:sales@integrated-circuit.com)

# Infrared Light Emitting Diode in Miniature SMD Package



## OP251

- Internal Lens
- High Power
- 1206 Package Size
- 880nm Wavelength

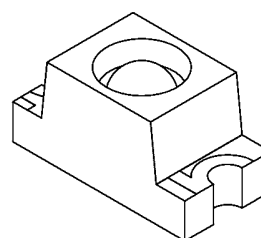
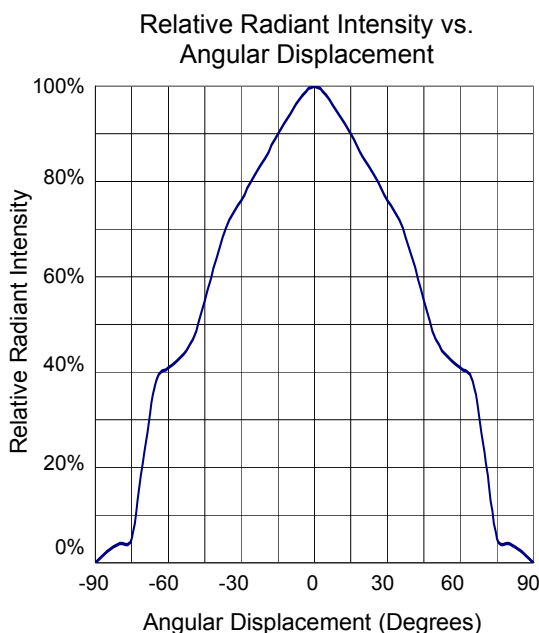


# PRELIMINARY

The OP251 is a GaAlAs infrared LEDs mounted in a miniature SMT package. The device incorporates an integral molded lens which enables a tight beam angle and provides an even emission pattern. This device is packaged in a 1206 size chip carrier that is compatible with most automated mounting equipment. The OP251 is mechanically and spectrally matched to the OP520 series phototransistors.

## Applications

- Non-Contact Position Sensing
- Machine automation
- Datum detection
- Optical encoders



OP251



LEAD FREE

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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A subsidiary of  
TT electronics plc

# SMD Infrared LED

## OP251



### Absolute Maximum Ratings

$T_A = 25^\circ\text{C}$  unless otherwise noted

Storage Temperature Range	-40° C to +85° C
Operating Temperature Range	-25° C to +85° C
Lead Soldering Temperature	260° C <sup>(1)</sup>
Reverse Voltage	30 V
Continuous Forward Current	50 mA
Power Dissipation	130 mW <sup>(2)</sup>

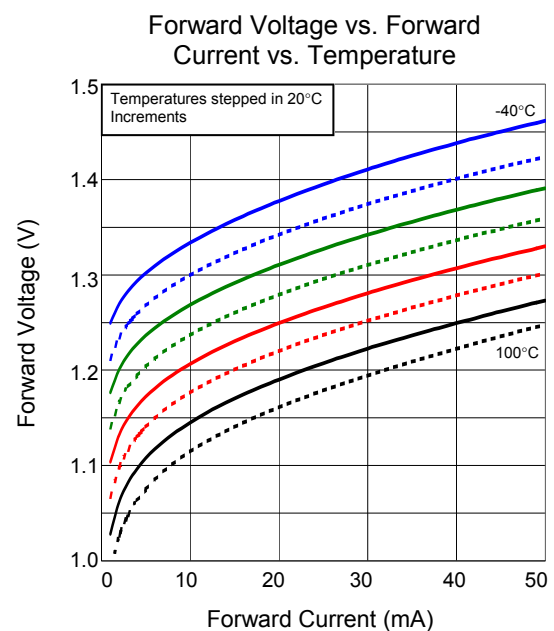
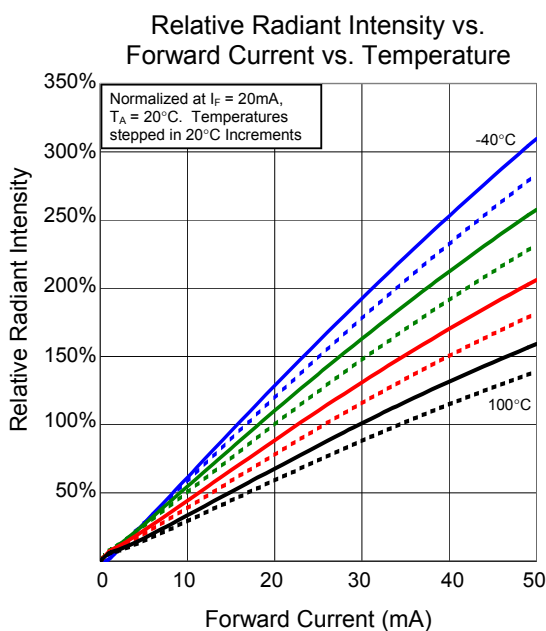
Notes:

- Solder time less than 5 seconds at temperature extreme.
- De-rate linearly at 2.17 mW/° C above 25° C.

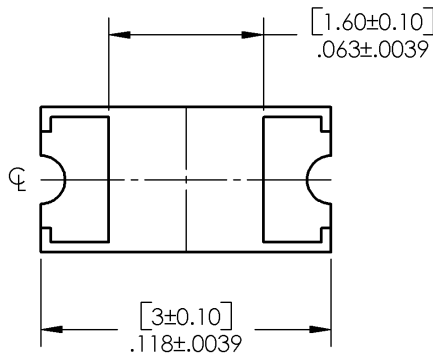
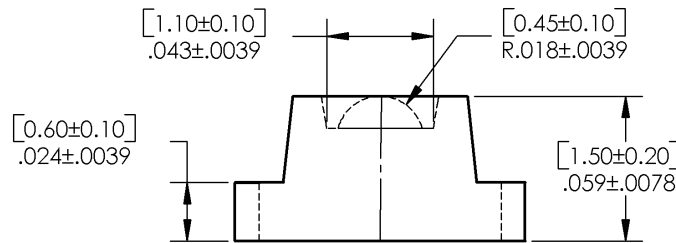
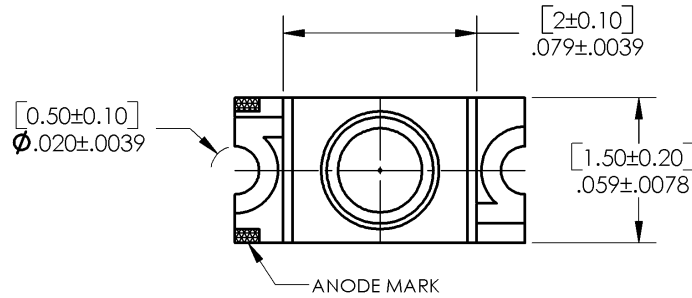
### Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	CONDITIONS
$E_{e(APT)}$	Apertured Radiant Incidence	0.3			mW/cm <sup>2</sup>	$I_F = 20\text{mA}^{(3)}$
$V_F$	Forward Voltage			1.5	V	$I_F = 20\text{mA}$
$I_R$	Reverse Current			100	$\mu\text{A}$	$V_R = 2.0\text{V}$
$\lambda_P$	Peak Emission Wavelength		890		nm	$I_F = 10\text{mA}$
$\Theta_{HP}$	Emission Angle at Half Power Points		105		Deg.	$I_F = 20\text{mA}$
$t_r, t_f$	Rise and Fall Time			500	ns	$I_{F(PEAK)} = 100\text{mA}, \text{PW} = 10\mu\text{s}, 10\% \text{ D.C.}$

- $E_{e(APT)}$  is a measurement of the apertured radiant incidence upon a sensing area 0.081" (2.06mm) in diameter, perpendicular to and centered on the mechanical axis of the lens, and 0.590" (14.99mm) from the measurement surface.  $E_{e(APT)}$  is not necessarily uniform within the measured area.



SMD Infrared LED  
 OP251



PIN	FUNCTION
1	Anode
2	Cathode

DIMENSIONS ARE IN INCHES AND [MILLIMETERS].

RECOMMENDED SOLDER PADS

