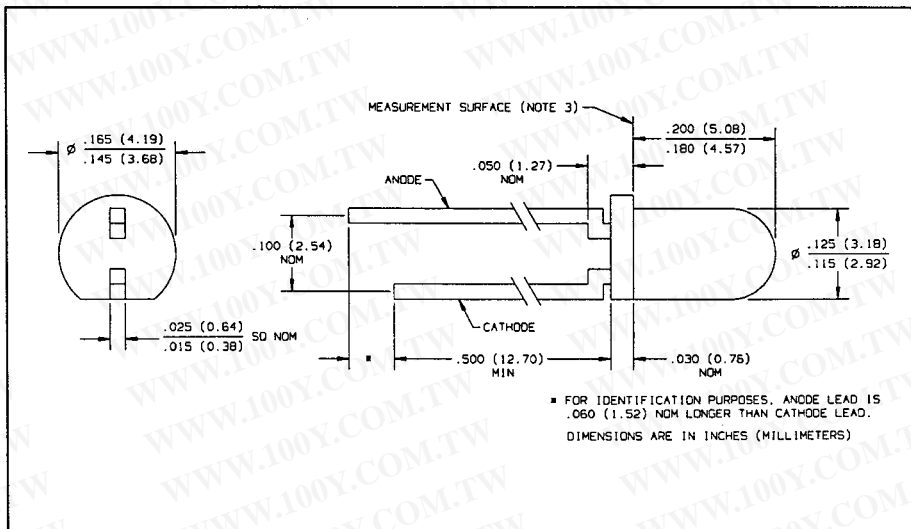
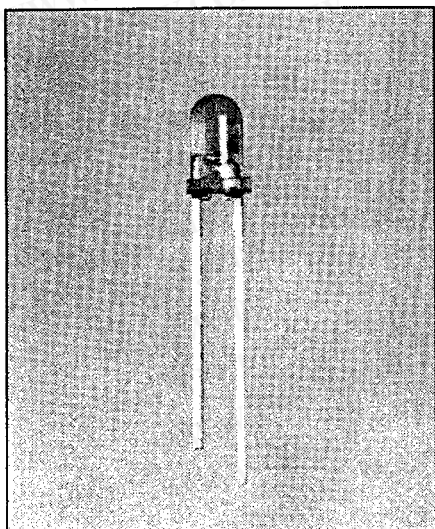


GaAs Plastic Infrared Emitting Diodes Types OP166A, OP166B, OP166C, OP166D



Features

- Narrow irradiance pattern
- Mechanically and spectrally matched to the OP506 series phototransistors
- Variety of Sensitivity ranges
- Small package size for space limited applications
- T-1 package style

Description

The OP166 series devices are 935 nm high intensity gallium arsenide infrared emitting diodes molded in IR transmissive amber tinted plastic packages. The narrow irradiance pattern provides high on-axis intensity for excellent coupling efficiency. Lead spacing on this series is 0.100 inch (2.54 mm).

Replaces

OP161SL series
OP164 Series

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-54151736
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

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

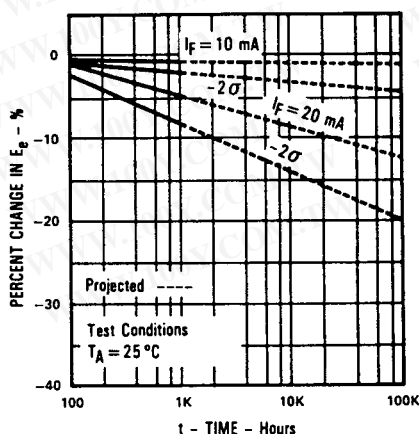
| | |
|---|---|
| Reverse Voltage | 2.0 V |
| Continuous Forward Current | 50 mA |
| Peak Forward Current (1 μs pulse width, 300 pps) | 3.0 A |
| Storage and Operating Temperature Range | -40°C to $+100^\circ\text{C}$ |
| Lead Soldering Temperature [1/16 inch (1.6mm) from case for 5 sec. with soldering iron] | $260^\circ\text{C}^{(1)}$ |
| Power Dissipation | 100 mW ⁽²⁾ |

Notes:

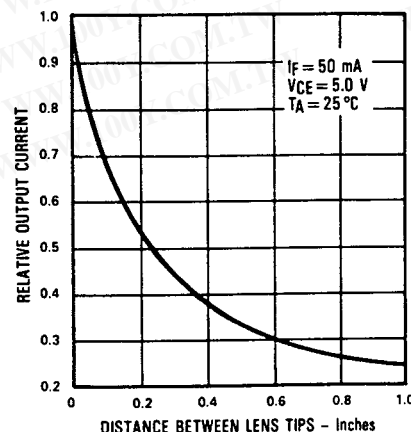
- (1) RMA flux is recommended. Duration can be extended to 10 sec. max. when flow soldering. A max. of 20 grams force may be applied to the leads when soldering.
- (2) Derate linearly 1.33 mW/ $^\circ\text{C}$ above 25°C .
- (3) $E_{e(\text{APT})}$ is a measurement of the average apertured radiant incidence 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. $E_{e(\text{APT})}$ is not necessarily uniform within the measured area.

Typical Performance Curves

Percent Changes in Radiant Intensity vs Time



Coupling Characteristics OP166 and OP506



Types OP166A, OP166B, OP166C, OP166D

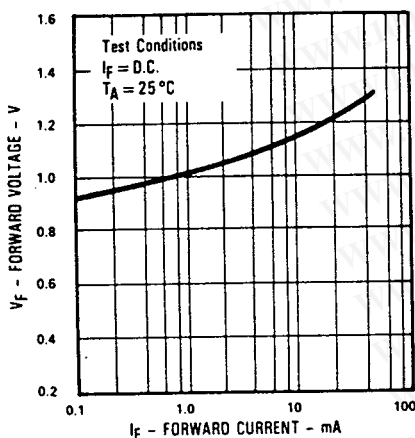
Electrical Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

| SYMBOL | PARAMETER | MIN | TYP | MAX | UNITS | TEST CONDITIONS |
|----------------------------|--|--------|-------|------|----------------------------|--|
| Ee(APT) | Apertured Radiant Incidence | OP166D | 0.28 | | | $I_F = 20\text{ mA}^{(3)}$ |
| | | OP166C | 0.85 | 1.60 | | $I_F = 20\text{ mA}^{(3)}$ |
| | | OP166B | 1.40 | 2.20 | | $I_F = 20\text{ mA}^{(3)}$ |
| | | OP166A | 1.95 | | | $I_F = 20\text{ mA}^{(3)}$ |
| V_F | Forward Voltage | | | 1.60 | V | $I_F = 20\text{ mA}$ |
| I_R | Reverse Current | | | 100 | μA | $V_R = 2.0\text{ V}$ |
| λ_p | Wavelength at Peak Emission | | 935 | | nm | $I_F = 10\text{ mA}$ |
| B | Spectral Bandwidth Between Half Power Points | | 50 | | nm | $I_F = 10\text{ mA}$ |
| $\Delta\lambda_p/\Delta T$ | Spectral Shift with Temperature | | +0.30 | | $\text{nm}/^\circ\text{C}$ | $I_F = \text{Constant}$ |
| θ_{HP} | Emission Angle at Half Power Points | | 18 | | Deg. | $I_F = 20\text{ mA}$ |
| t_r | Output Rise Time | | 1000 | | ns | $I_F(\text{PK}) = 100\text{ mA}$, $\text{PW} = 10\mu\text{s}$, D.C. = 10.0% |
| t_f | Output Fall Time | | 500 | | ns | $\text{PW} = 10\mu\text{s}$, D.C. = 10.0% |

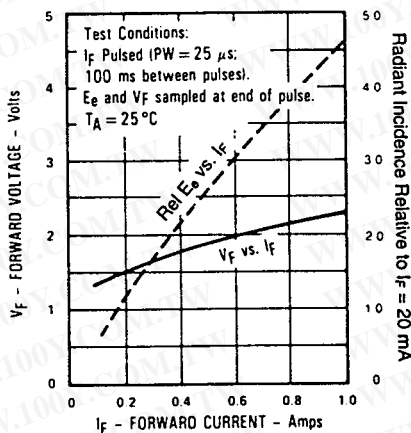
INFRARED
EMITTING
DIODES

Typical Performance Curves

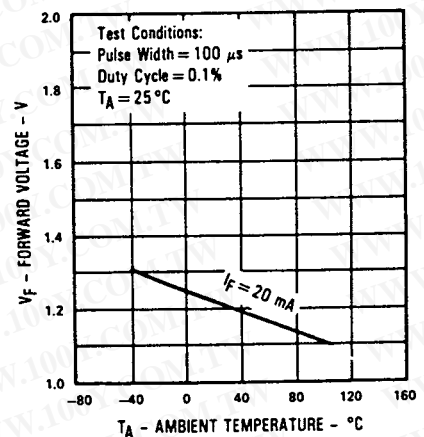
Forward Voltage vs Forward Current



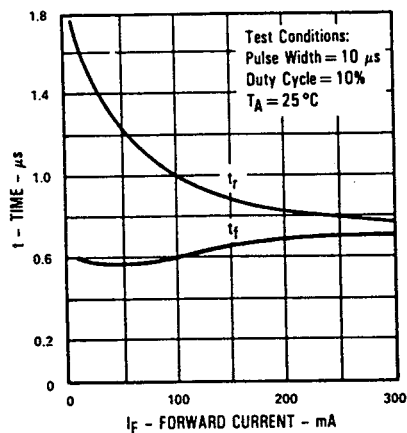
Forward Voltage and Relative Radiant Incidence vs. Forward Current



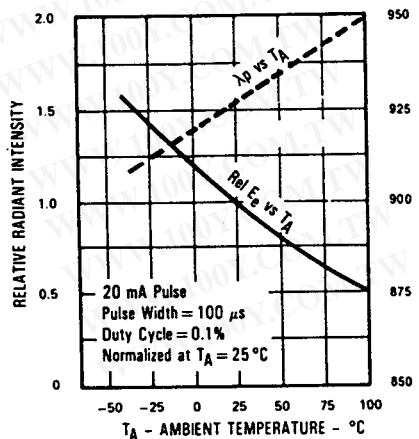
Forward Voltage vs Ambient Temperature



Rise Time and Fall Time vs Forward Current



Relative Radiant Intensity and Wavelength at Peak Emission vs Ambient Temperature



Relative Radiant Intensity vs Angular Displacement

