

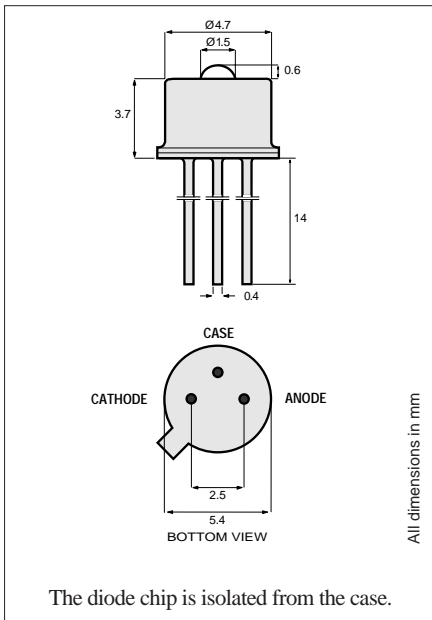
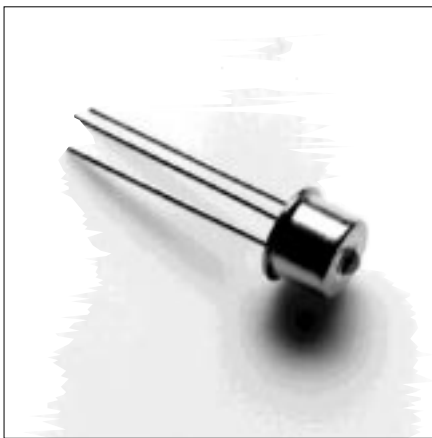
# PRODUCT INFORMATION

900nm

**1A226**  
High-Performance LED

Sensors

The wavelength for this LED is 900nm —ideal for unique sensor applications. The double-lens optical system achieves optimum coupling of power into the fiber. It's packaged in a hermetically sealed can to survive harsh environments and a wide range of operating temperatures.



**TO-46 Package With Lens**

## Optical and Electrical Characteristics (25°C Case Temperature)

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Fiber-Coupled Power (Fig. 1, 2, & 3) (Table 1)	$P_{\text{fiber}}$	50	70		$\mu\text{W}$	$I_F=60\text{ mA}$ (Note 1) Fiber: 62.5/125 $\mu\text{m}$
Rise and Fall Time (10-90%)	$t_r, t_f$		3	6	ns	$I_F=60\text{ mA}$ (no bias) Graded Index
Bandwidth (3dB <sub>el</sub> )	$f_c$		100		MHz	$I_F=60\text{ mA}$ NA=0.275
Peak Wavelength	$\lambda_p$	875	900	915	nm	$I_F=60\text{ mA}$
Spectral Width (FWHM)	$\Delta\lambda$		55		nm	$I_F=60\text{ mA}$
Forward Voltage (Fig.5)	$V_F$		1.6	2.0	V	$I_F=60\text{ mA}$
Reverse Current	$I_R$			20	$\mu\text{A}$	$V_R=1\text{ V}$
Capacitance	$C$		250		pF	$V_R=0\text{ V}, f=1\text{ MHz}$

**Note 1:** Measured at the exit of 100 meters of fiber.

## Absolute Maximum Ratings

PARAMETER	SYMBOL	LIMIT
Storage Temperature	$T_{\text{stg}}$	-55 to +125°C
Operating Temperature (derating: Fig.4)	$T_{\text{op}}$	-55 to +125°C
Electrical Power Dissipation (derating: Fig.4)	$P_{\text{tot}}$	160 mW
Continuous Forward Current ( $f \leq 10\text{ kHz}$ )	$I_F$	80 mA
Peak Forward Current (duty cycle $\leq 50\%$ , $f \geq 1\text{ MHz}$ )	$I_{\text{FRM}}$	130 mA
Reverse Voltage	$V_R$	1.5V
Soldering Temperature (2mm from the case for 10sec)	$T_{\text{slid}}$	260°C

## Thermal Characteristics

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Thermal Resistance - Infinite Heat Sink	$R_{\text{thjc}}$			200	°C/W
Thermal Resistance - No Heat Sink	$R_{\text{thja}}$			500	°C/W
Temperature Coefficient - Optical Power	$dP/dT_j$		-0.6		%/°C
Temperature Coefficient - Wavelength	$d\lambda/dT_j$		0.3		nm/°C

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Typical Fiber-Coupled Power			
Core Diameter/Cladding Diameter Numerical Aperture			
50/125 $\mu\text{m}$ 0.20	62.5/125 $\mu\text{m}$ 0.275	100/148 $\mu\text{m}$ 0.24	200/230 $\mu\text{m}$ 0.37
25 $\mu\text{W}$	70 $\mu\text{W}$	170 $\mu\text{W}$	400 $\mu\text{W}$

