

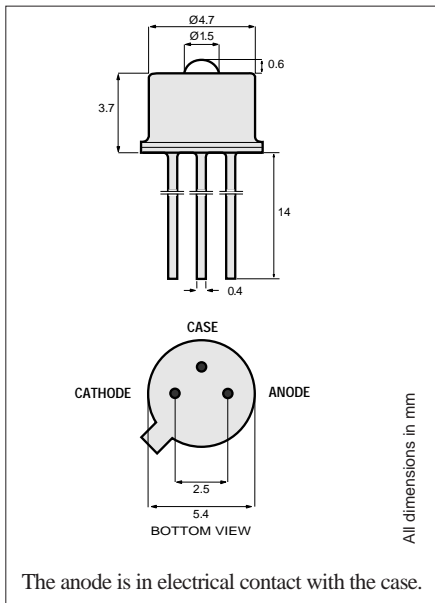
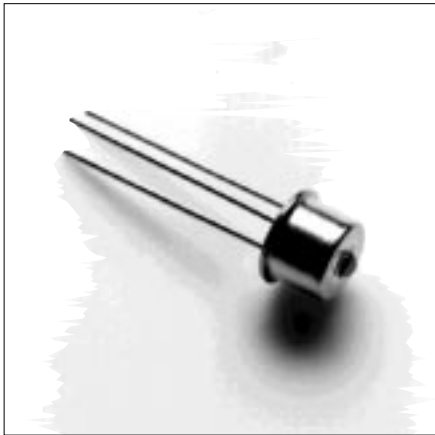
# PRODUCT INFORMATION

860nm

**1A292**  
High-Performance LED

**Baseband Video**

The low thermal droop and high speed of this device allows high-frequency baseband video transmission with minimum distortion. The double-lens optical system provides for optimum coupling of power into the fiber.



**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)	$P_{\text{fiber}}$	120	150		$\mu\text{W}$	$I_F=80\text{ mA}$ (Note 1)
Rise and Fall Time (10-90%)	$t_r, t_f$		4.5	6	ns	$I_F=80\text{ mA}$ (no bias)
Bandwidth (3dB <sub>e1</sub> )	$f_c$		75		MHz	$I_F=80\text{ mA}$
Thermal Droop (nonlinearity) (Note 2)	$ \Delta P $		4		%	$I_F=80\text{ mA}$
Peak Wavelength	$\lambda_p$	840	860	880	nm	$I_F=80\text{ mA}$
Spectral Width (FWHM)	$\Delta\lambda$		50		nm	$I_F=80\text{ mA}$
Forward Voltage (Fig. 5)	$V_F$		1.8	2.2	V	$I_F=80\text{ mA}$
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.

**Note 2:** Transient decline in optical power due to self-heating.

## 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)	$P_{\text{tot}}$	250 mW
Continuous Forward Current ( $f \leq 10\text{ kHz}$ )	$I_F$	110 mA
Peak Forward Current (duty cycle $\leq 50\%$ , $f \geq 1\text{ MHz}$ )	$I_{\text{FRM}}$	180 mA
Reverse Voltage	$V_R$	1.5 V
Soldering Temperature (2mm from the case for 10 sec)	$T_{\text{sld}}$	260°C

## Thermal Characteristics

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Thermal Resistance - Infinite Heat Sink	$R_{\text{thjc}}$			100	°C/W
Thermal Resistance - No Heat Sink	$R_{\text{thja}}$			400	°C/W
Temperature Coefficient - Optical Power	$dP/dT_j$		-0.5		%/°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	100/140 $\mu\text{m}$ 0.29	200/230 $\mu\text{m}$ 0.37
65 $\mu\text{W}$	150 $\mu\text{W}$	300 $\mu\text{W}$	450 $\mu\text{W}$

Table 1

