

# PRODUCT INFORMATION

850nm

**1A228**  
High-Performance LED

**Electronic Distance Measurement**

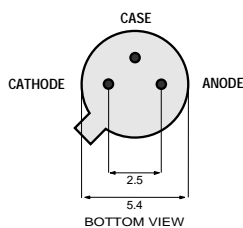
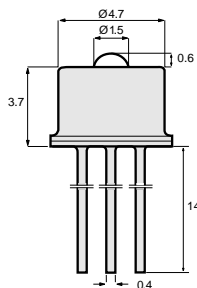
This device is capable of providing high power into large-core fiber over a wide temperature range. Thanks to its very uniform phase distribution of the optical power, it is ideal for Electronic Distance Measurement equipment.



## 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)	$P_{\text{fiber}}$	1000	1200		$\mu\text{W}$	$I_F=100\text{ mA}$ (Note 1) Fiber: 200/280 $\mu\text{m}$
Rise and Fall Time (10-90%)	$t_r, t_f$		7	10	ns	$I_F=100\text{ mA}$ (no bias) Step Index
Bandwidth (3dB $_{e1}$ )	$f_c$		50		MHz	$I_F=100\text{ mA}$ NA=0.24
Peak Wavelength	$\lambda_p$	830	850	870	nm	$I_F=100\text{ mA}$
Spectral Width (FWHM)	$\Delta\lambda$		50		nm	$I_F=100\text{ mA}$
Forward Voltage (Fig. 5)	$V_F$		1.8	2.2	V	$I_F=100\text{ mA}$
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.



All dimensions in mm

The anode is in electrical contact with the case.

### TO-46 Package With Lens

## 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	$dP/dT_j$		-0.4		%/°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	200/280 $\mu\text{m}$ 0.24
60 $\mu\text{W}$	150 $\mu\text{W}$	450 $\mu\text{W}$	1300 $\mu\text{W}$	1200 $\mu\text{W}$

Table 1

