

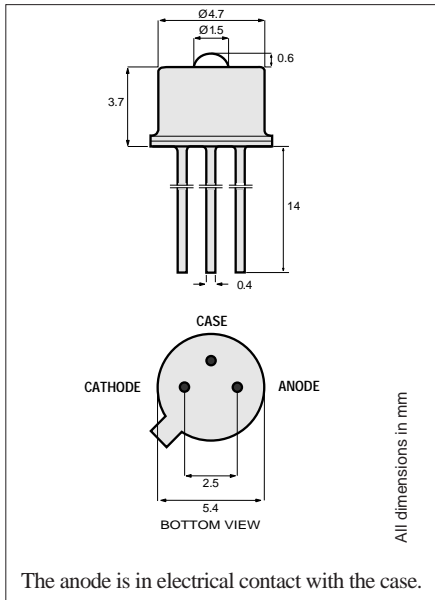
PRODUCT INFORMATION

810nm

1A208
High-Performance LED

Sensors

The 810 nm wavelength and high power into large-core fiber is ideal for many sensor applications. It is packaged in a hermetically sealed can for high reliability and maximum resistance to harsh operating environments.



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_{fiber}	1000	1200		μW	$I_F=100\text{ mA}$ (Note 1) Fiber 200/280 μm
Rise and Fall Time (10-90%)	t_r, t_f		7	10	ns	$I_F=100\text{ mA}$ (no bias) Step Index NA=0.24
Bandwidth (3dB _e)	f_c		50		MHz	$I_F=100\text{ mA}$
Peak Wavelength	λ_p	790	810	830	nm	$I_F=100\text{ mA}$
Spectral Width (FWHM)	$\Delta\lambda$		50		nm	$I_F=100\text{ mA}$
Forward Voltage (Fig.5)	V_F		2.1	2.3	V	$I_F=100\text{ mA}$
Reverse Current	I_R			20	μA	$V_R=1\text{ V}$
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_{stg}	-55 to +125° C
Operating Temperature (derating: Fig.4)	T_{op}	-55 to +125° C
Electrical Power Dissipation (derating: Fig.4)	P_{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_{FRM}	180 mA
Reverse Voltage	V_R	1.5 V
Soldering Temperature (2mm from the case for 10 sec)	T_{sld}	260° C

Thermal Characteristics

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Thermal Resistance - Infinite Heat Sink	R_{thjc}			100	°C/W
Thermal Resistance - No Heat Sink	R_{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 μm 0.20	62.5/125 μm 0.275	100/140 μm 0.29	200/230 μm 0.37	200/280 μm 0.24
60 μW	150 μW	450 μW	1300 μW	1200 μW

Table 1

