

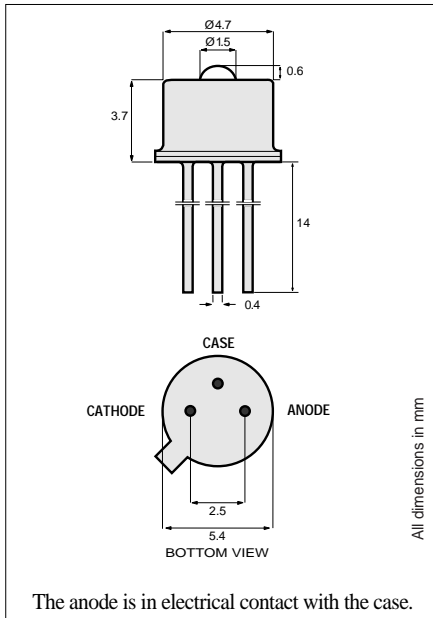
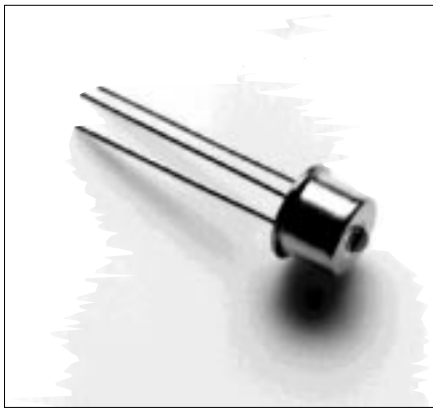
PRODUCT INFORMATION

860nm

1A313
High-Performance LED

Power Transmission

This is the ultimate in high power for 850 nm LEDs - making it the device of choice for high power transmission via large core fibers. The hermetically sealed package contributes to its high reliability and the device can withstand the harshest environmental conditions.



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_{fiber}	5	7		mW	$I_F=300$ mA (Note 1) (Note 2) Fiber: 300/330 μm
Rise and Fall Time (10-90%)	t_r, t_f		4	8	ns	$I_F=300$ mA (no bias) Step Index NA=0.37
Bandwidth (3dB _{e1})	f_c		85		MHz	$I_F=300$ mA
Peak Wavelength	λ_p	840	860	880	nm	$I_F=100$ mA
Spectral Width (FWHM)	$\Delta\lambda$		40		nm	$I_F=100$ mA
Forward Voltage (Fig.5)	V_F		1.9	2.2	V	$I_F=300$ mA
Reverse Current	I_R			20	μA	$V_R=1$ V
Capacitance	C		250		pF	$V_R=0$ V, $f=1$ MHz

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

Note 2: Mounted in a heatsinked metal housing.

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}	660 mW
Continuous Forward Current (f 10 kHz)	I_F	300 mA
Peak Forward Repetitive Current (duty cycle 50%)	I_{FRM}	500 mA
Peak Forward Surge Current (100 μs pulse)	I_{FSM}	1000 mA
Reverse Voltage	V_R	1.5 V
Soldering Temperature (2mm from the case for 10 sec)	T_{slid}	260°C

Thermal Characteristics

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT
Thermal Resistance - Infinite Heat Sink	R_{thjc}			75	°C/W
Thermal Resistance - In Housing (Note 2)	R_{thja}			150	°C/W
Temperature Coefficient - Optical Power	dP/dT_j		-0.5		%/°C
Temperature Coefficient - Wavelength	$d\lambda/dT_j$		0.3		nm/°C

12425.11 1994-09-20



Europe: Tel (46) 8 58 02 45 00 Fax (46) 8 58 02 01 10
Tel (44) 1291 436180 Fax (44) 1291 436771

America: Tel 1-800-96MITEL Fax (613) 592-6909
Asia: Tel (65) 293 5312 Fax (65) 293 8527

Typical Fiber-Coupled Power	
Core Diameter/Cladding Diameter Numerical Aperture	
200/230 μm 0.37	300/330 μm 0.37
4 mW	7 mW

Table 1

