

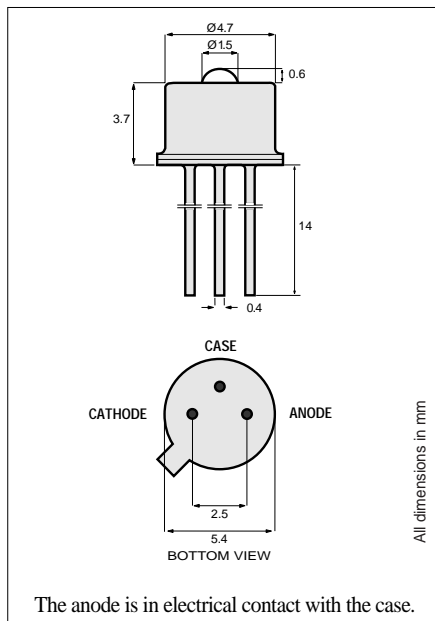
PRODUCT INFORMATION

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 _{el}) | 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_{sld} | 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 |

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| 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

