

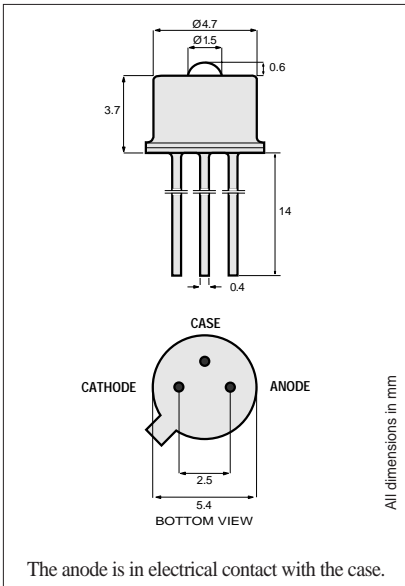
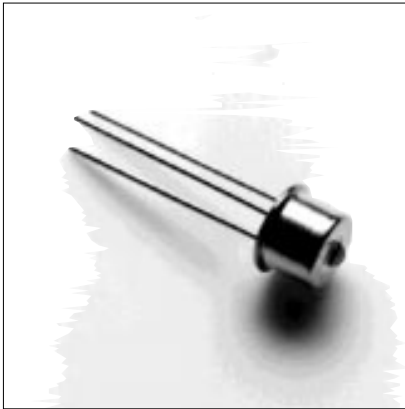
PRODUCT INFORMATION

860nm

1A314
High-Performance LED

Baseband Video

The exceptionally low thermal droop of this device allows baseband video transmission with ultimate quality and 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_{fiber}	70	100		μW	$I_F=100\text{mA}$ (Note 1)
Rise and Fall Time (10-90%)	t_r, t_f		6	8	ns	$I_F=100\text{mA}$ (no bias)
Bandwidth (3dB _{e1})	f_c		55		MHz	$I_F=100\text{mA}$
Thermal Droop (nonlinearity) (Note 2)	$ \Delta P $		1		%	$I_F=100\text{mA}$
Peak Wavelength	λ_p	840	860	880	nm	$I_F=100\text{mA}$
Spectral Width (FWHM)	$\Delta\lambda$		50		nm	$I_F=100\text{mA}$
Forward Voltage (Fig.5)	V_F		1.6	2	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.

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

Absolute Maximum Ratings

PARAMETER	SYMBOL	LIMIT
Storage Temperature	T_{stg}	-55 to +125°C
Operating Temperature	T_{op}	-55 to +125°C
Electrical Power Dissipation	P_{tot}	250 mW
Continuous Forward Current ($\leq 10\text{kHz}$)	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		-0.5		%/°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 μm 0.20	62.5/125 μm 0.275	100/140 μm 0.29	200/230 μm 0.37
40 μW	100 μW	250 μW	400 μW

Table 1

