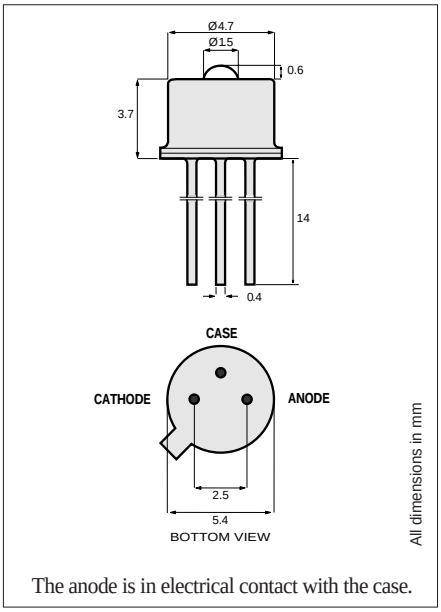
880nm 1A277A High-Performance LED

FM and Baseband Video

The low harmonic distortion and low thermal droop makes this device ideal for subcarrier FM and baseband video applications. Video transmission can be accomplished with minimum distortion. The double-lens optical system provides for optimum coupling of power into the fiber.



The anode is in electrical contact with the case.

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}	100	130		µW	I_F=100mA (Note 1)	Fiber: 62.5/125µm Graded Index NA=0.275
Rise and Fall Time (10-90%)	t_r, t_f		1.5	2	ns	I_F=100mA (no bias)	
Bandwidth ($3dB_{el}$)	f_c		250		MHz	I_F=100 mA	
Harmonic Distortion (nonlinearity)	$-H_2$		40		dB	I_F=100 mA m=0.8 f=10 MHz	
	$-H_3$		50		dB		
Thermal Droop (nonlinearity) (Note 2)	$\lvert\Delta P\rvert$		4		%	I_F=100 mA	
Peak Wavelength	λ_p	860	880	900	nm	I_F=100 mA	
Spectral Width (FWHM)	$\Delta\lambda$		60		nm	I_F=100 mA	
Forward Voltage (Fig.5)	V_F		1.8	2.2	V	I_F=100 mA	
Reverse Current	I_R			20	µA	V_R=1V	
Capacitance	C		250		pF	V_R= 0V, f=1 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 (f≤10 kHz)	I_F	110 mA
Peak Forward Current (duty cycle≤50%, f≥1 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		-0.6		%/°C
Temperature Coefficient - Wavelength	$d\lambda/dT_j$		0.3		nm/°C

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Asia: Tel **(65) 293 5312** Fax **(65) 293 8527**

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
45µW	130µW	225µW	300 µW

Table 1

FIGURE 1

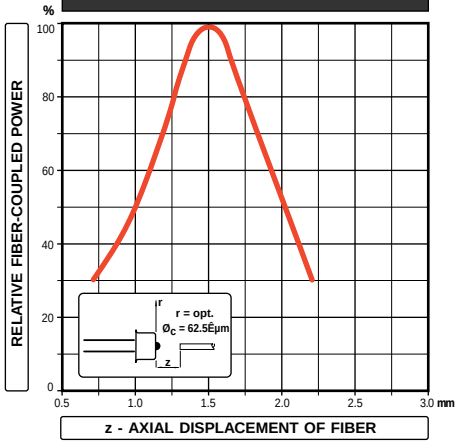

FIGURE 2

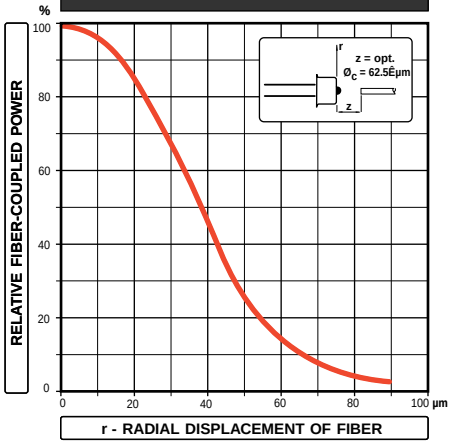

FIGURE 3

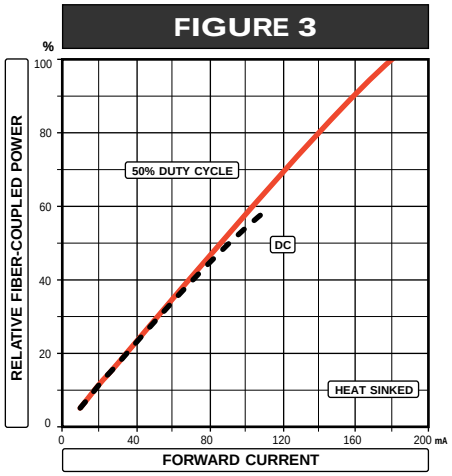

FIGURE 4

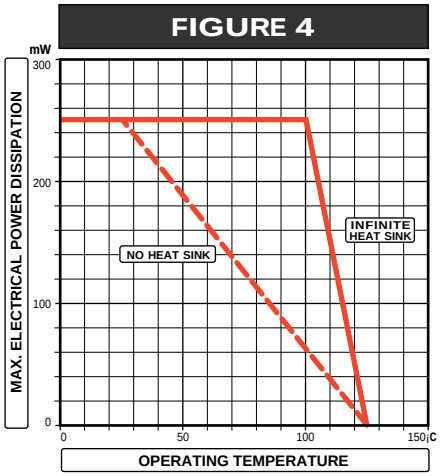

FIGURE 5