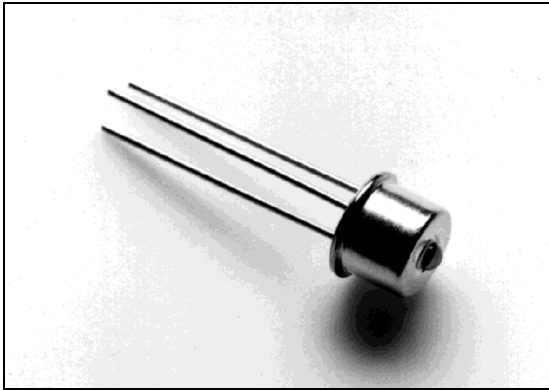


October 2003


Ordering Information

MF436	TO-46 Package
MF436 ST	11 ST Housing
MF436 FC	SC Housing

-40°C to +85°C

Note: Rated Fiber coupled power apply only on the TO-46 package, for housing options fiber coupled power is typically 10% less.

Features

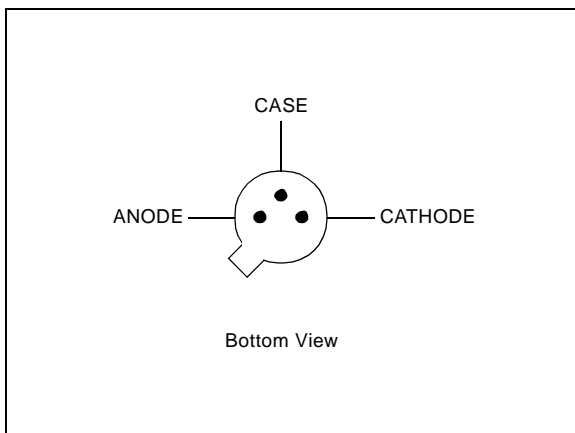
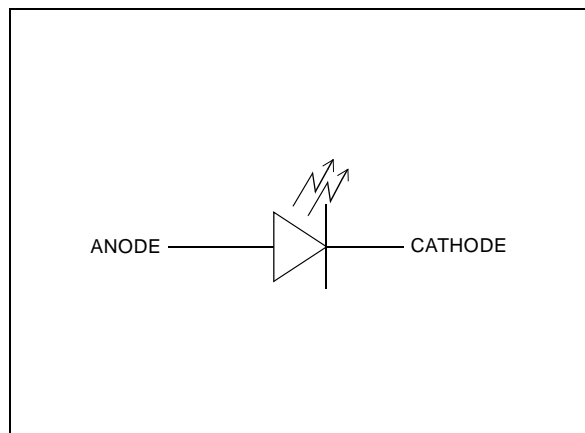
- 1310nm Surface-Emitting LED
- 50MHz Bandwidth
- Designed for 62.5/125µm fiber
- High power

Applications

- Sensors
- Test Equipment
- Signal transmission

Description

This device generates very high power which makes it ideal for many sensors and signal transmission applications. It operates in a wide range of temperatures, and can satisfy virtually any environmental specification. The double-lens optical system results in optimum coupling of power into the fiber.


Figure 1 - Pin Diagram

Figure 2 - Functional Schematic

Optical and Electrical Characteristics - Case Temperature 25°C

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Fiber-Coupled Power (Figures 3, 4 and 5) (Table 1)	P_{fiber}	20	27		μW	$I_{\text{F}}=80\text{mA}$, Note 1 Fiber: 50/125 μm NA=0.20
		70	80		μW	$I_{\text{F}}=80\text{mA}$, Note 1 Fiber: 62.5/125 μm NA=0.275
Rise and Fall Time (10-90%)	$t_{\text{r}}, t_{\text{f}}$		7	10	ns	$I_{\text{F}}=80\text{mA}$ (no bias)
Bandwidth (3dB _e)	f_{c}		50		MHz	$I_{\text{F}}=80\text{mA}$
Peak Wavelength	λ_{p}	1270	1300	1350	nm	$I_{\text{F}}=80\text{mA}$
Spectral Width (FWHM)	$\Delta\lambda$		145	165	nm	$I_{\text{F}}=80\text{mA}$
Forward Voltage (Figure 5)	V_{F}		1.5	2	V	$I_{\text{F}}=80\text{mA}$
Reverse Current	I_{R}			100	μA	$V_{\text{R}}=1\text{V}$
Capacitance	C		200		pF	$V_{\text{R}}=0\text{V}$, $f=1\text{MHz}$

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	T_{op}	-40 to +85°C
Electrical Power Dissipation (Figure 4)	P_{tot}	160 mW
Continuous Forward Current ($f < 10\text{kHz}$)	I_{F}	90 mA
Peak Forward Current (duty cycle < 50%, $f > 1\text{MHz}$)	I_{FRM}	130 mA
Reverse Voltage	V_{R}	0.5 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}			150	°C/W
Thermal Resistance - No Heat Sink	R_{thja}			450	°C/W
Temperature Coefficient - Optical Power	dP/dT_{j}		-0.6		%/°C
Temperature Coefficient - Wavelength	$d\lambda/dT_{\text{j}}$		0.45		nm/°C
Temperature Coefficient - Spectral Width	$d\Delta\lambda/dT_{\text{j}}$		0.25		nm/°C

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
27 μW	80 μW	140 μW

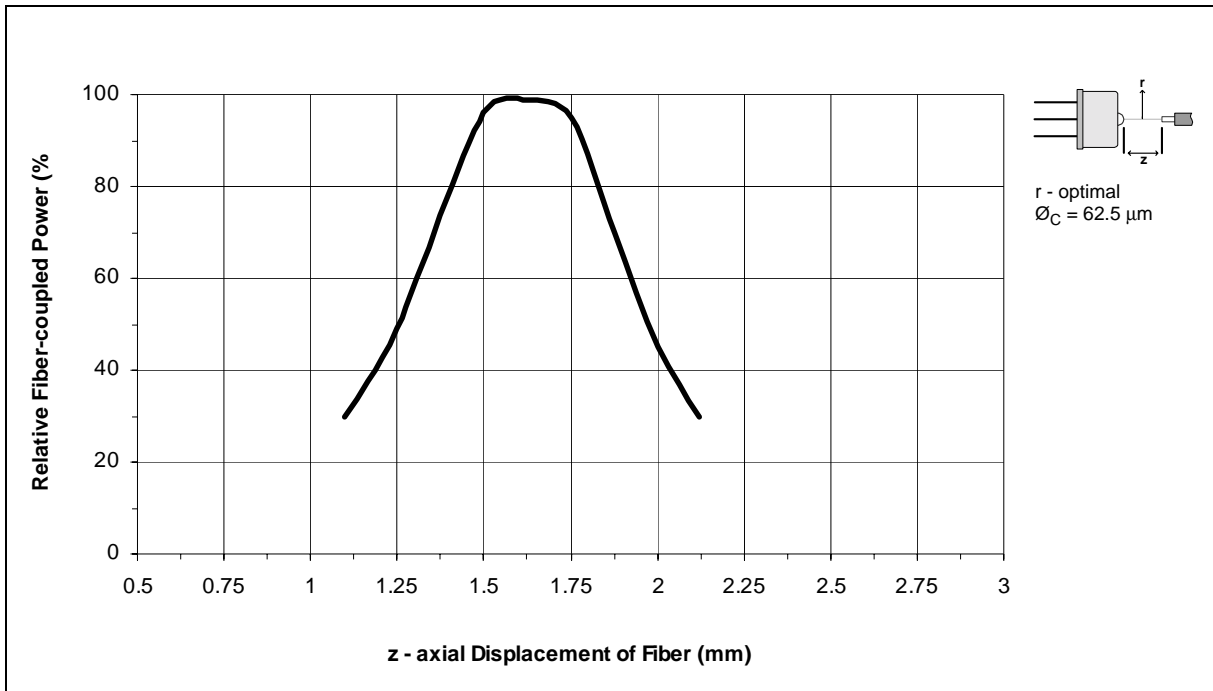


Figure 3 - z - Axial Displacement of Fiber



Figure 4 - r - Radial Displacement of Fiber

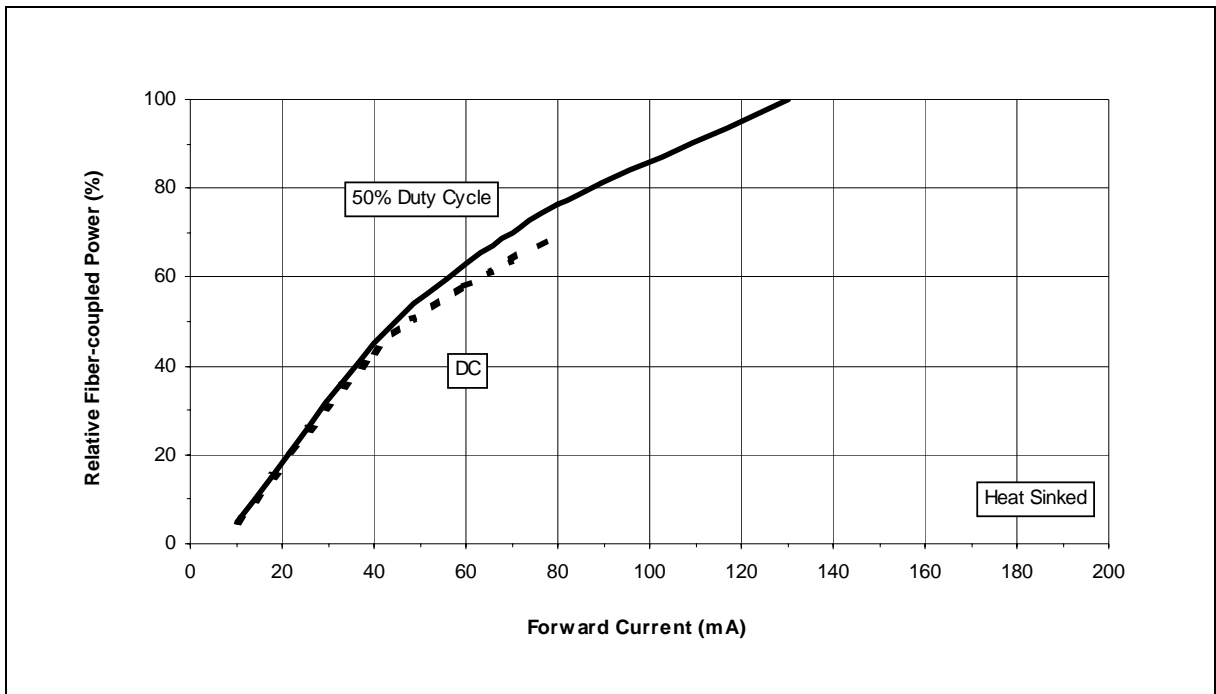


Figure 5 - Relative Fiber-coupled Power vs. Forward Current

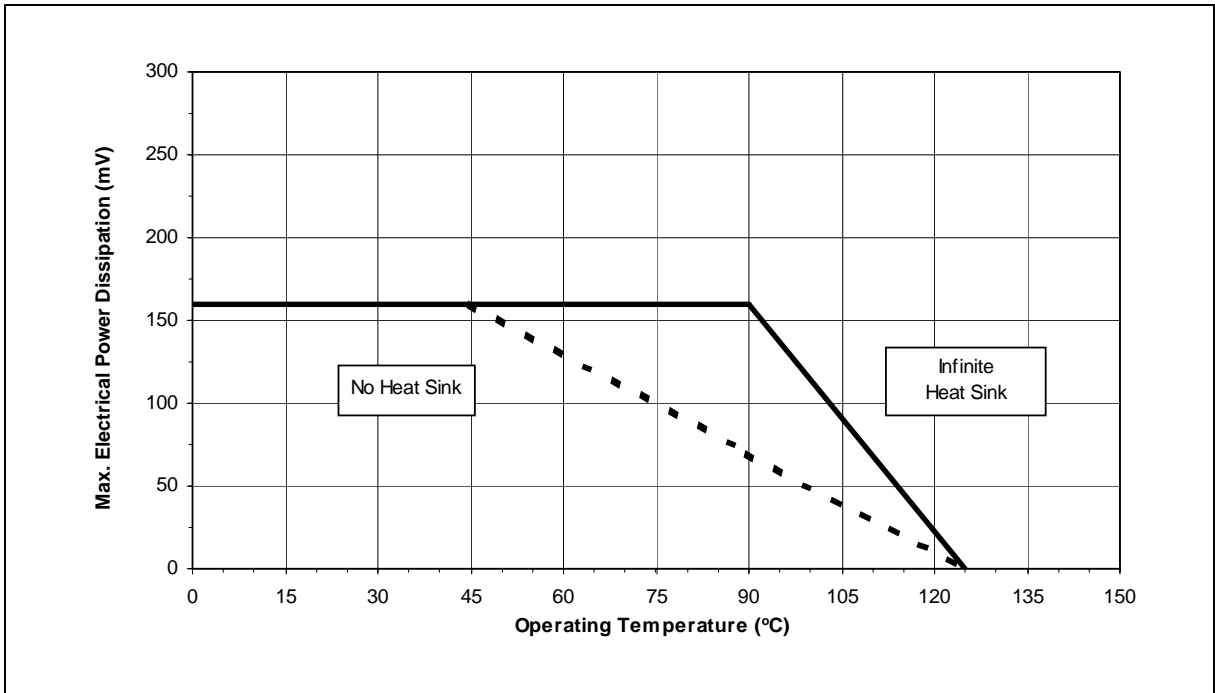


Figure 6 - Max. Electrical Power Dissipation vs. Operating Temperature

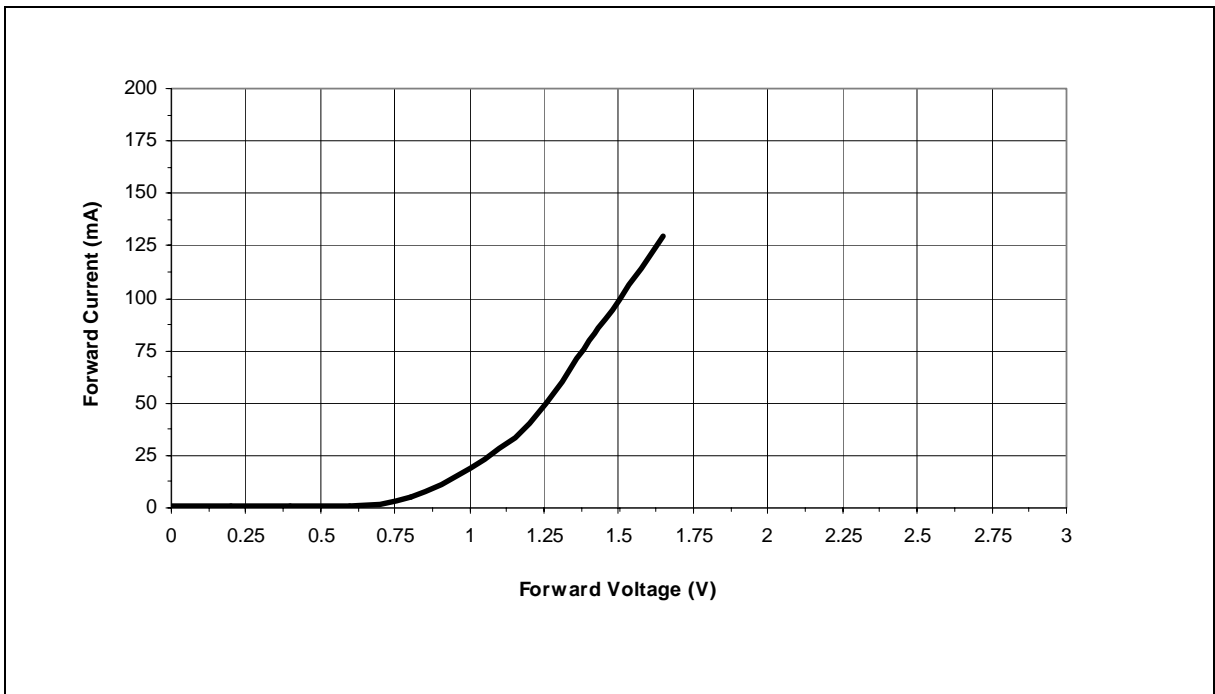
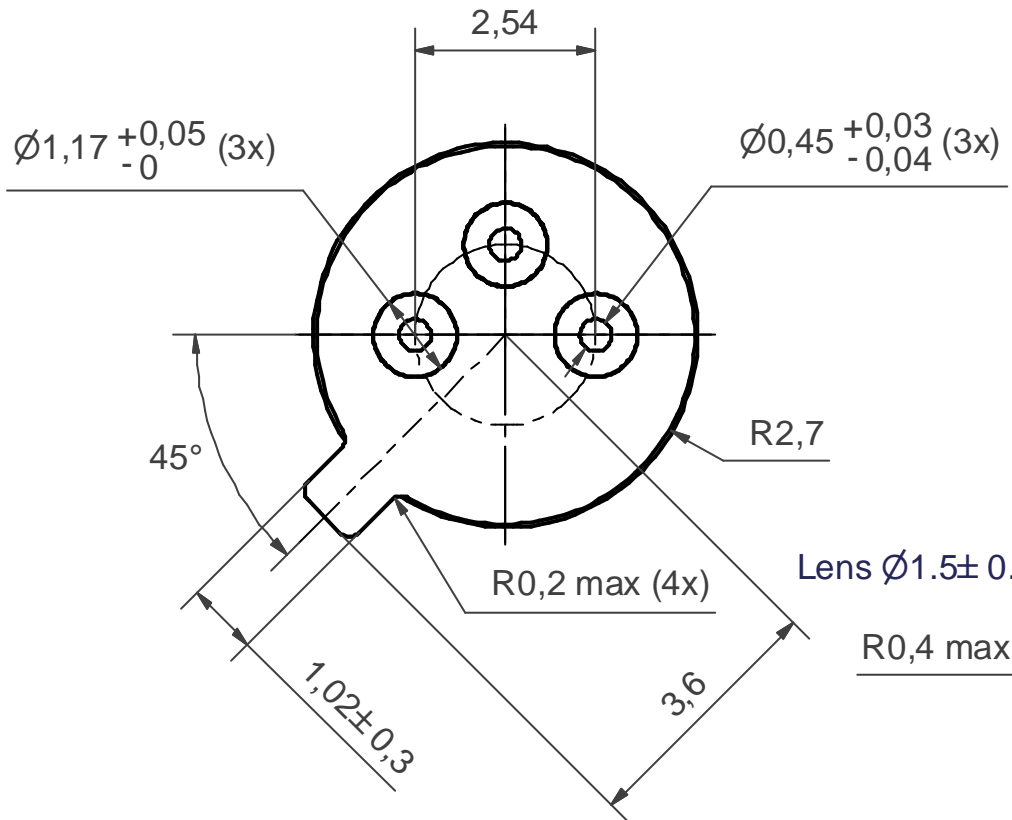
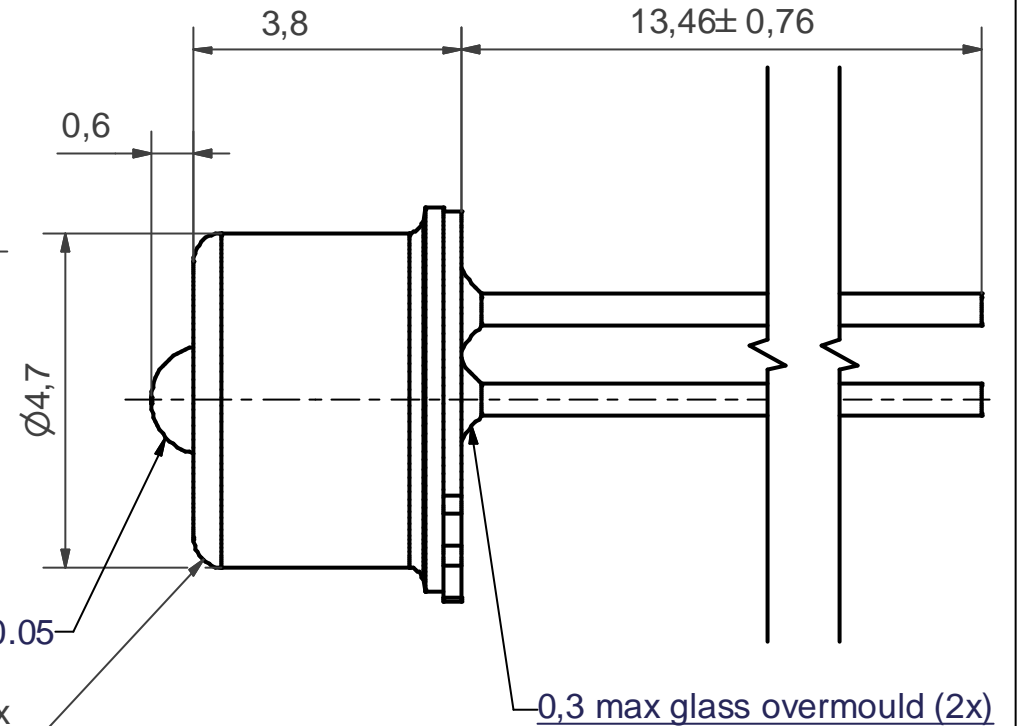


Figure 7 - Forward Current vs. Forward Voltage

BOTTOM VIEW (10 : 1)



SIDE VIEW



NOTES:-

1. All dimensions in mm.
2. General tol. ISO-2768-mK.
3. Coating: Case: Ni 1,5-2,5 μm .
Header: Ni 2-3 μm / Au min 1,32 μm .

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ISSUE	1			
ACN	JS004076R1A			
DATE	22-MAR-03			
APPRD.	TD/BE			



Package code **TB**

Previous package codes

Drawing type
Package drawing, TO-46 with lens

Title **JS004076**



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