
Ordering Information

MF431	TO-46 Package
MF431 ST	ST Housing
MF431 SC	SC Housing
MF431 SMA	SMA Housing
MF431 FC	FC 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.

Description

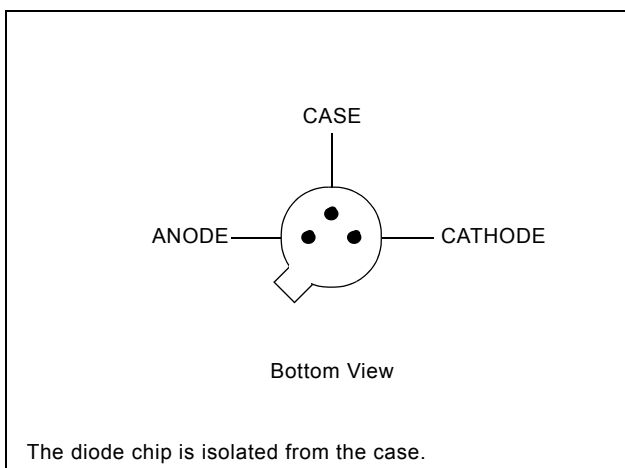
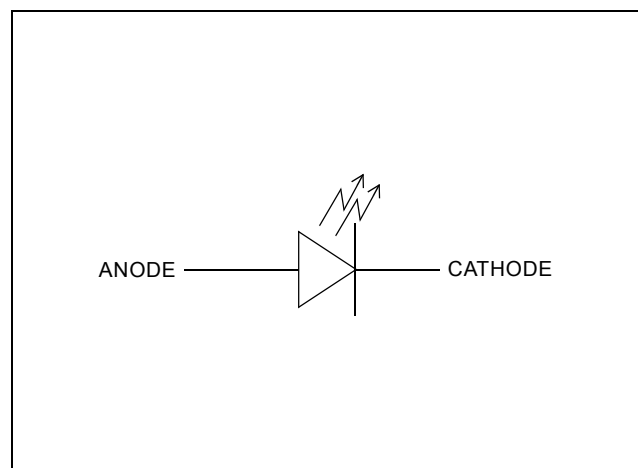
This LED is designed for Datacom, Telecom and General Purpose Applications. It has a long wavelength LED for links up to 10 km at 125 Mbps. It meets standards for FDDI (ANSI X3T9.5) and ATM 155 Mbps. The device is optimized for 62.5/125 μm fiber and actively aligned in an ST receptacle. The MF432 PIN Photodiode is recommended as Receiver for this LED.

Features

- 1320 nm Surface-Emitting LED
- 125 MHz Bandwidth
- Designed for 62.5/125 μm Fiber
- Aligned in Multiple Receptacle
- MTTF >1,000,000 hours

Applications

- Sonet OC-3
- FDDI
- ATM 155 Mbps
- General Purpose


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}	43			μW	$I_F=60\text{ mA}$ (Note 1)	Fiber: 62.5/125 μm Graded Index
Rise and Fall Time (10-90%)	t_r, t_f		2.5		ns	$I_F=60\text{ mA}$ (no bias)	
Bandwidth (3dB _{e1})	f_c		125		MHz	$I_F=60\text{ mA}$	
Peak Center Wavelength	λ_p		1320		nm	$I_F=60\text{ mA}$	
Spectral Width (FWHM)	$\Delta\lambda$		135		nm	$I_F=60\text{ mA}$	
Forward Voltage (Figure 7)	V_F		1.3	1.65	V	$I_F=60\text{ mA}$	
Reverse Current	I_R			100	μA	$V_R=1\text{ V}$	
Capacitance	C		200		pF	$V_R=0\text{ V}, f=1\text{ MHz}$	

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 (derating: Figure 6)	T_{op}	-40 to +85 °C
Electrical Power Dissipation (derating: Figure 6)	P_{tot}	160 mW
Continuous Forward Current (f<10 kHz)	I_F	80 mA
Peak Forward Current (duty cycle<50%, f>1 MHz)	I_{FRM}	130 mA
Reverse Voltage	V_R	0.5 V
Soldering Temperature (2 mm 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}			150	°C/W
Thermal Resistance - No Heat Sink	R_{thja}			400	°C/W
Temperature Coefficient - Optical Power	dP/dT_j		-0.75		%/°C
Temperature Coefficient - Wavelength	$\Delta\lambda/dT_j$		0.45		nm/°C



Figure 3 - Relative Fiber-coupled Power vs. z - Axial Displacement of Fiber



Figure 4 - Relative Fiber-coupled Power vs. r - Radial Displacement of Fiber

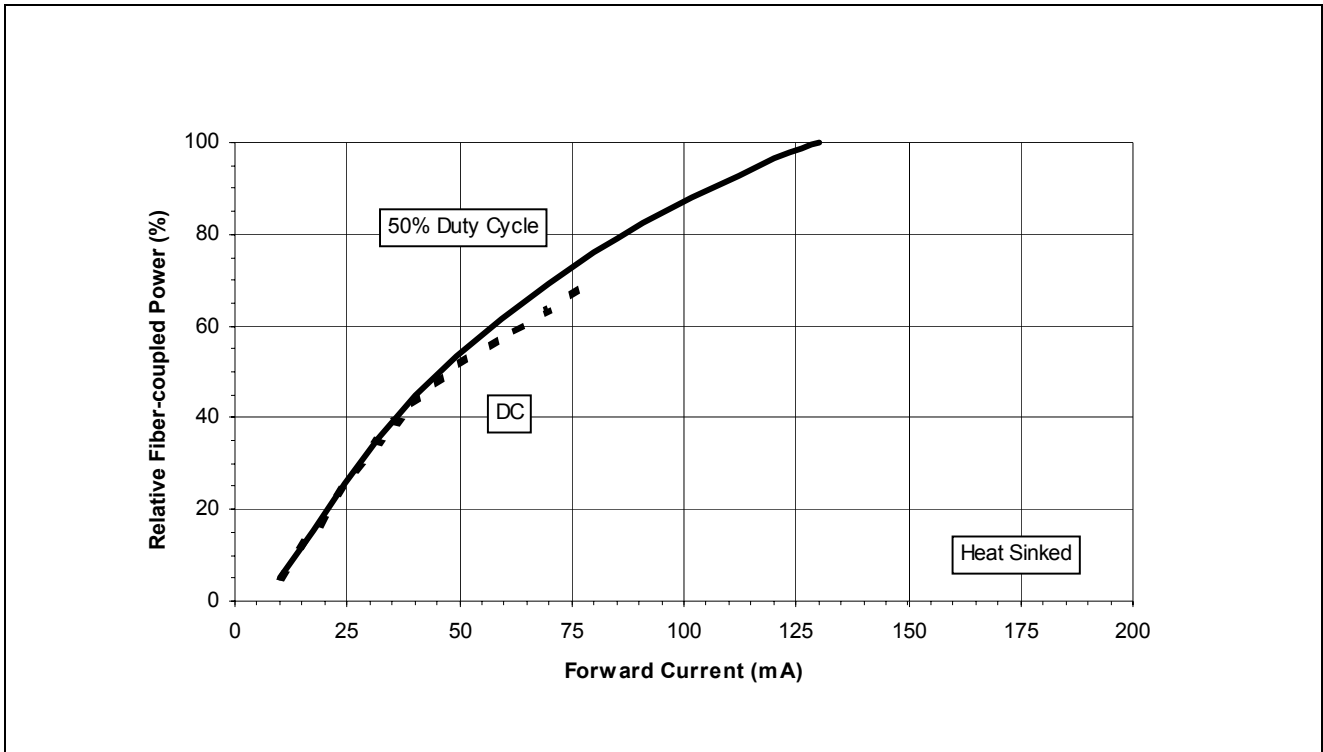


Figure 5 - Relative Fiber-coupled Power vs. Forward Current

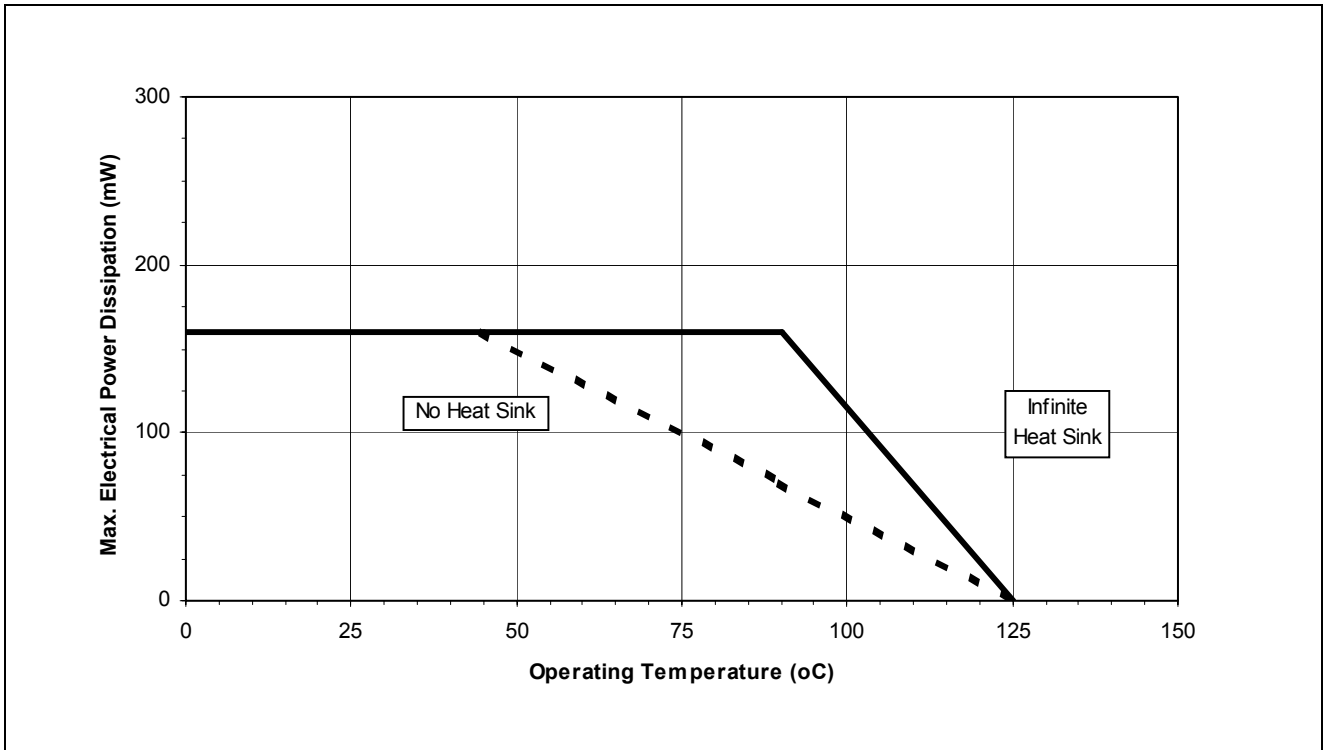


Figure 6 - Max. Electrical Power Dissipation vs. Operating Temperature

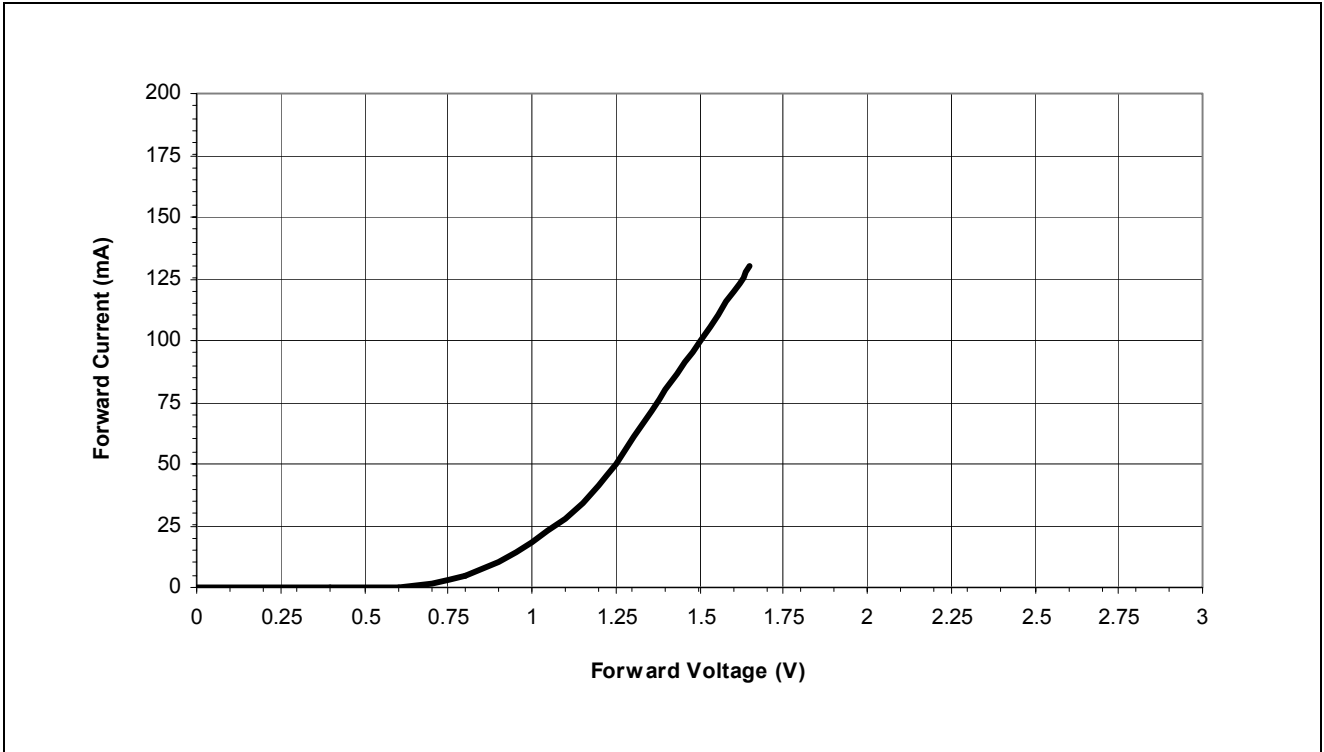
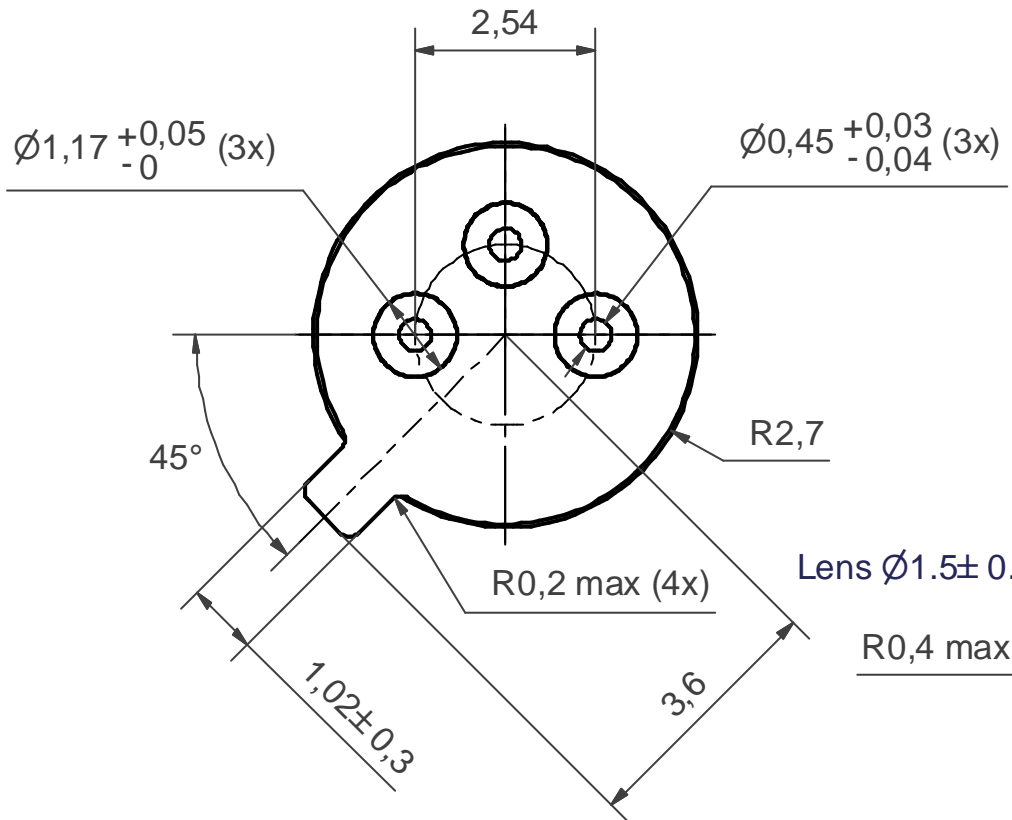
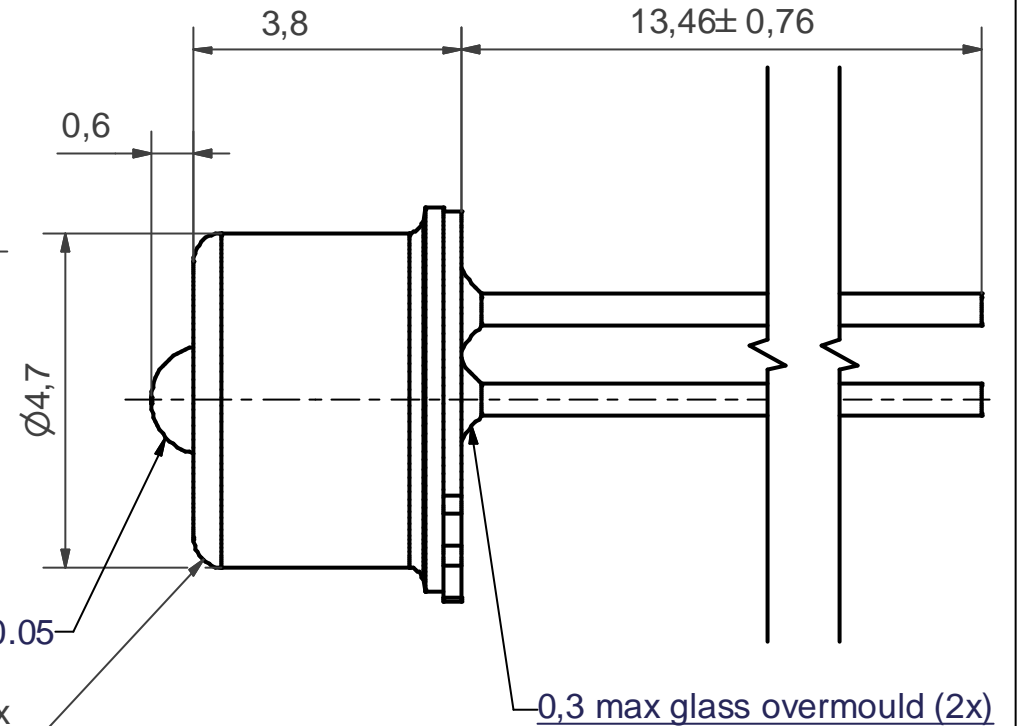


Figure 7 - Forward Current vs. Forward Voltage

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 μ m.
Header: Ni 2-3 μ m / Au min 1,32 μ m.

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	Title JS004076



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