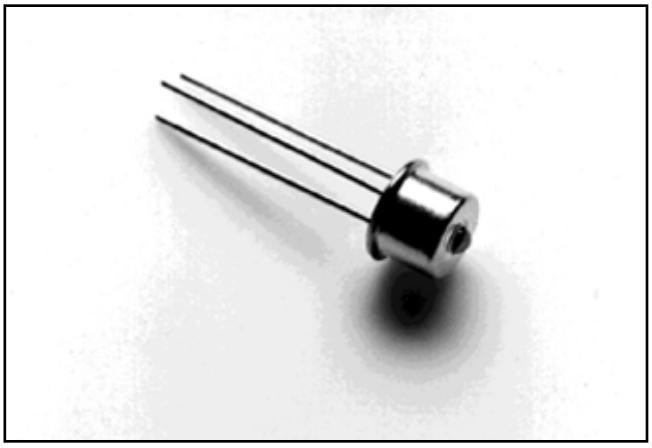
MF388
High Performance LED



TO-46 Package with Lens

DS5468 ISSUE 1 May 2001

Ordering Information

MF388	12940.11 TO-46 Package
MF388 ST	13208.11 ST Housing

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

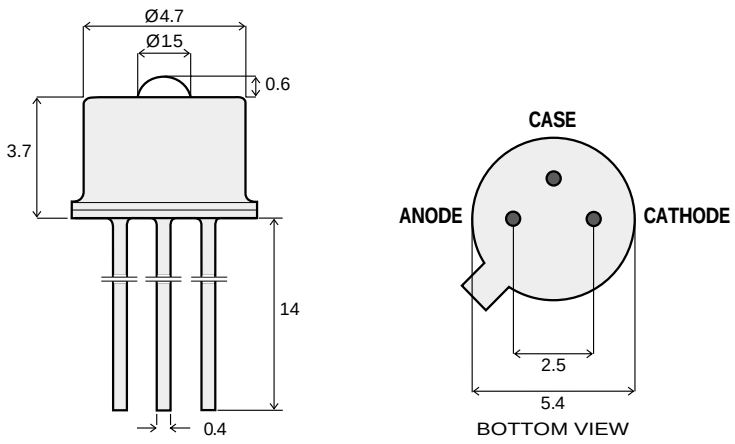
Description

This device is designed for Ethernet 100 Mbps and Intra-Office Telecom applications and offers an excellent price/performance ratio for cost effective solutions. Its double-lens optical system results in optimum coupling of power into the fiber.

Optical and Electrical Characteristics - Case Temperature 25˚C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition	
Fiber-Coupled Power (Fig. 1,2 & 3) (Table 1)	P_{fiber}	40	50		µW	I_F=50mA (Note 1)	Fiber: 62.5/ 125µm Graded Index NA=0.275
Rise and Fall Time (10-90%)	t_r,t_f			2	ns	I_F=50mA (no bias)	
Bandwidth ($3dB_{el}$)	f_c	200	250		MHz	I_F=50mA	
Peak Wavelength	λ_p	800	820	840	nm	I_F=50mA	
Spectral Width (FWHM)	$\Delta\lambda$			60	nm	I_F=50mA	
Forward Voltage (Fig. 5)	V_F			1.85	V	I_F=50mA	
Reverse Current	I_R			20	µA	V_R=1V	
Capacitance	C		20		pF	V_R=0V, f=1MHz	

Note 1: Measured at the exit of 100 meters of fiber



The diode chip is isolated from the case

All dimensions in mm

Absolute Maximum Ratings

Parameter	Symbol	Limit
Storage Temperature	T_{stg}	-55 to +125˚C
Operating Temperature see (derating: Fig. 4)	T_{op}	-40 to +85˚C
Electrical Power Dissipation (derating: Fig. 4)	P_{tot}	250 mW
Continuous Forward Current (f<10kHz)	I_F	110 mA
Peak Forward Current (duty cycle<50%, f>1MHz)	I_{FRM}	180 mA
Reverse Voltage	V_R	1.5V
Soldering Temperature (2mm from the case for 10sec)	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

Typical Fiber-Coupled Power

Core Diameter/Cladding Diameter Numberical Aperture			
50/125 µm 0.20	62.5/125 µm 0.275	100/140 µm 0.29	200/230 µm 0.37
20µW	50µW	100µW	140µW

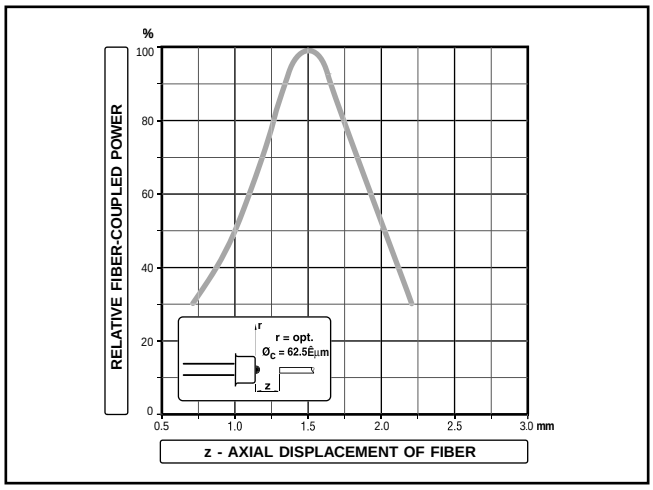


Figure 1

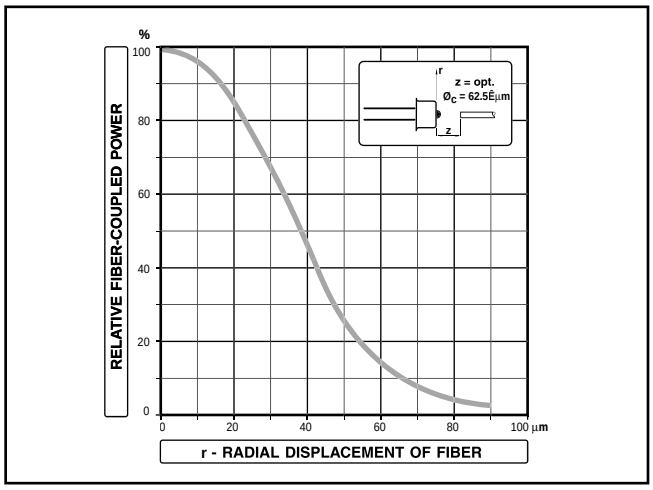


Figure 2

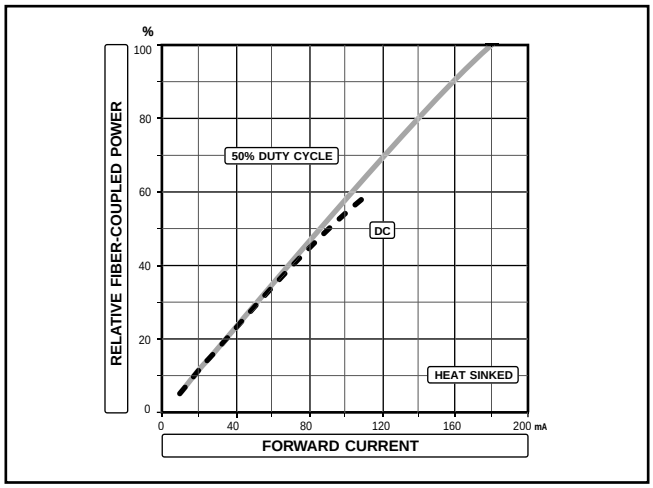


Figure 3

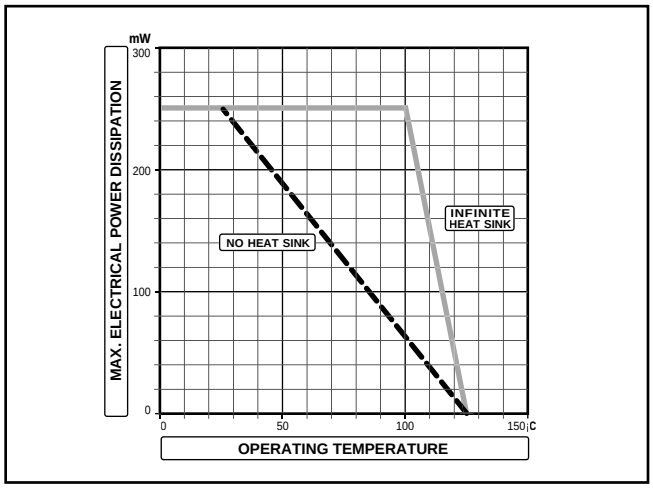


Figure 4

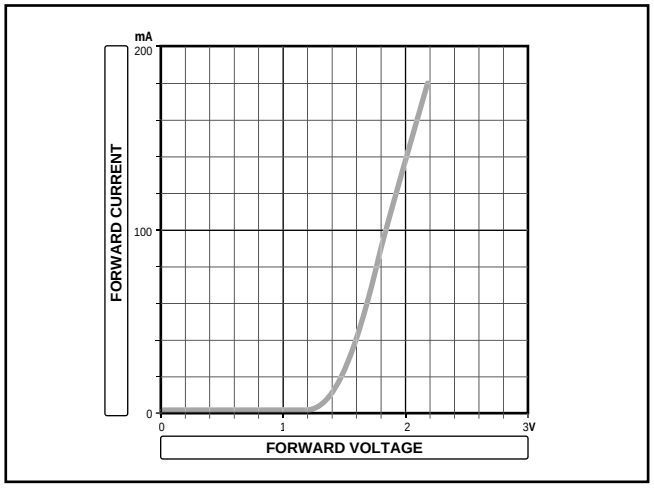
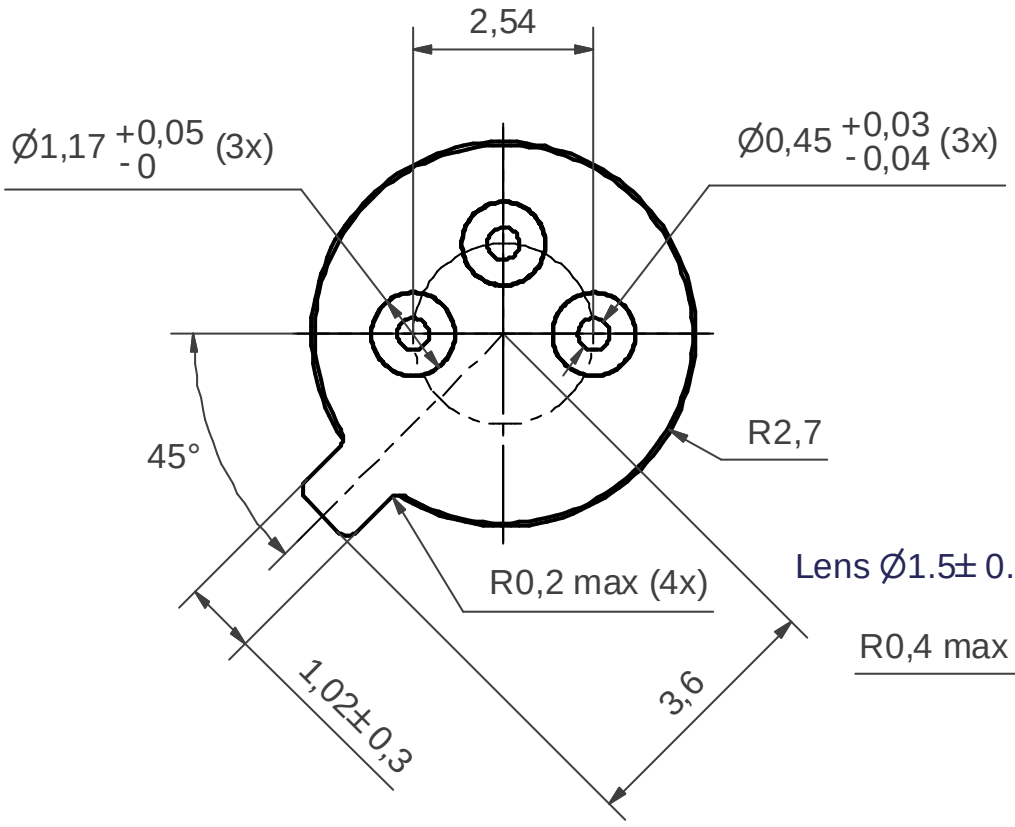
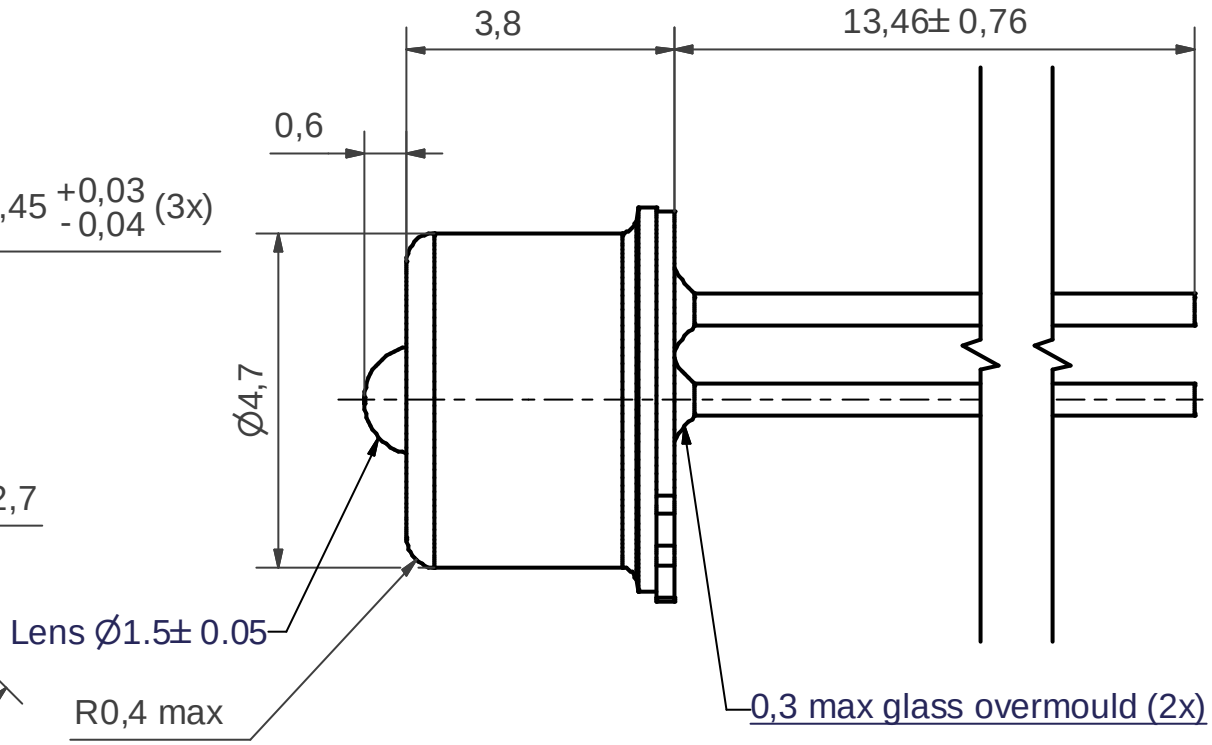


Figure 5

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.

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

ZARLINK SEMICONDUCTOR

Previous package codes

Package code TB

Drawing type
Package drawing, TO-46 with lens

Title JS004076

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