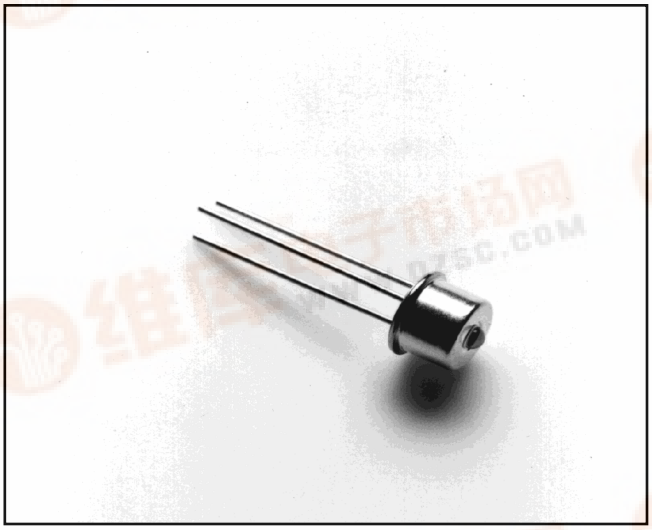
ZARLINK SEMICONDUCTOR™

MF446

High-Performance PIN

DS5461 ISSUE 1 May 2001



TO-46 Package with Lens

Ordering Information

MF446	13514.11 TO-46 Package
MF446 ST	15062.11 ST Housing
MF446 SMA	13743.11 SMA Housing
MF446 FC	13741.11 FC Housing
MF446 SC	15268.11 SC Housing
MF446 PT	15050.11 Pig-Tail including 1m of 62.5/125 µm multi-mode fibre

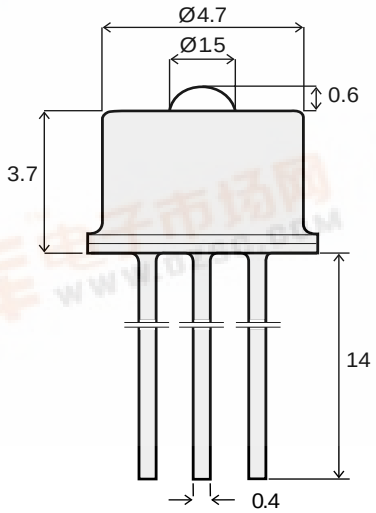
Note: The rated Responsivity applies to all options.

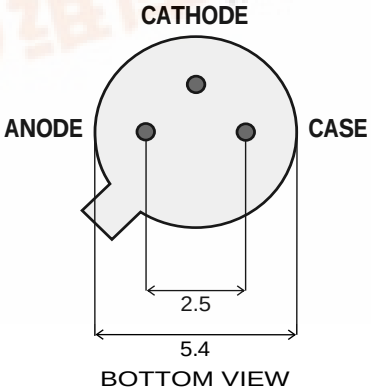
Description

The very high speed and low capacitance of this GaAs PIN Photodiode makes it ideal for datacom and general purpose applications. Its double-lens optical system collects power from fibers with up to 100mm without loss in responsivity and a reverse voltage of only 3.3 Volts makes interfacing to a preamplifier easy.

Optical and Electrical Characteristics - Case Temperature -40 to +85°C

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition	
Responsivity (Fig. 1 & 2) (Table 1)	R	0.35	0.45		A/W	V_R=3.3V, 5V λ=850nm	Fiber: 62.5/ 125µm Graded Index NA=0.275
Bandwidth	f_c		1.5		GHz	V_R=3.3V, 5V R_L=50Ω	
Capacitance (Fig. 4)	C		0.8		pF	V_R=3.3V, 5V, f=1MHz	
Dark Current	I_d			0.4	nA	V_R=3.3V, 5V	





The diode chip is isolated from the case

All dimensions in mm

MF446

Absolute Maximum Ratings

Parameter	Symbol	Limit
Storage Temperature	T_{stg}	-55 to +125˚C
Operating Temperature	T_{op}	-40 to +85˚C
Reverse Voltage	V_R	30V
Soldering Temperature (2mm from the case for 10 sec)	T_{sld}	260˚C

Thermal Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit
Temp. Coefficient - Dark Current	$d1/dT_j$		5		%/˚C

Typical Responsivity

Core Diameter/Cladding Diameter Numberical Aperture		
10/125 µm 0.11	50/125 µm 0.20	62.5/125 µm 0.275
0.45 A/W	0.45 A/W	0.45 A/W

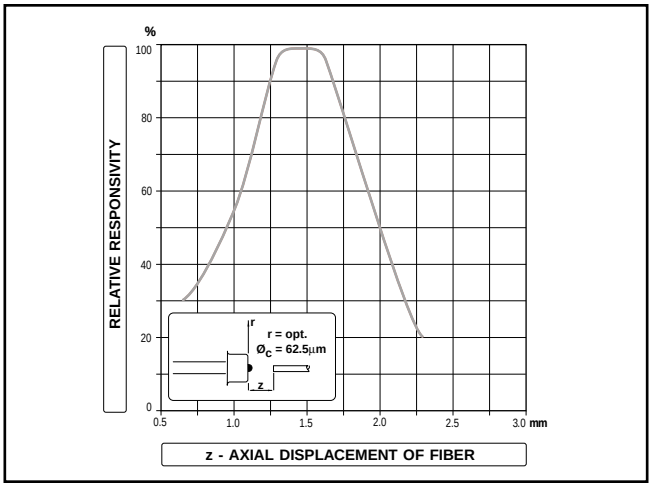


Figure 1

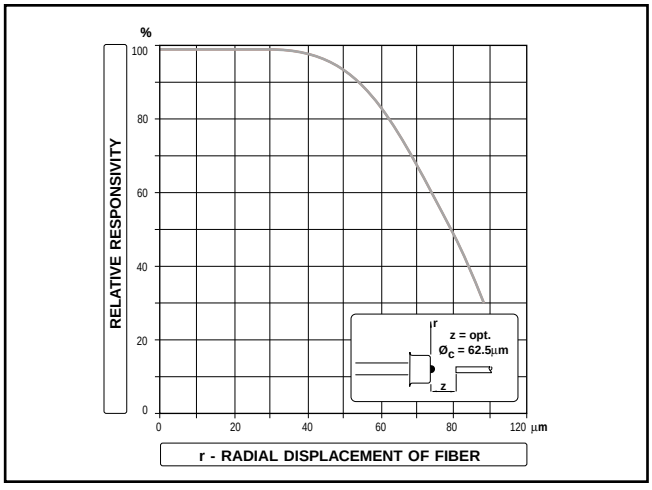


Figure 2

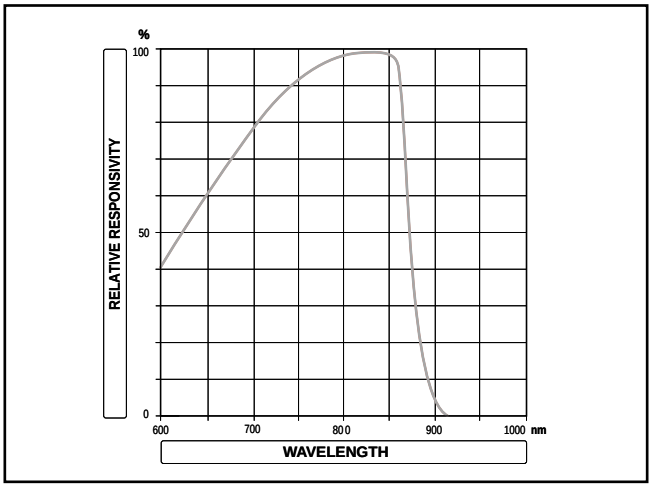


Figure 3

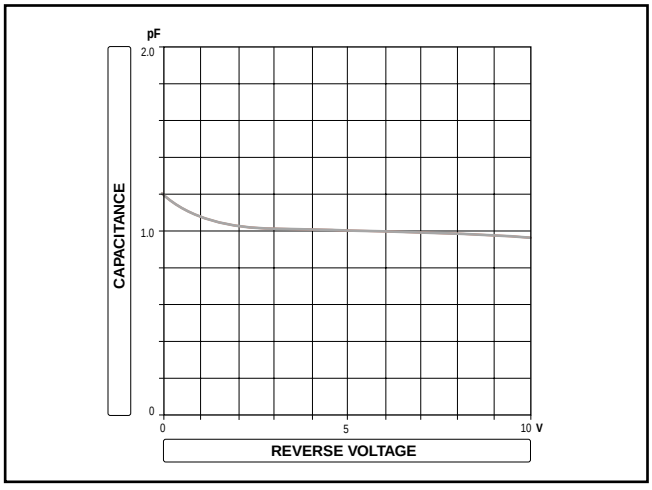


Figure 4

For more information about all Zarlink products visit our Web Site at

www.zarlink.com