

TO-46 Package with Lens

DS5461

ISSUE 1

May 2001

### 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 $\mu\text{m}$ multi-mode fibre

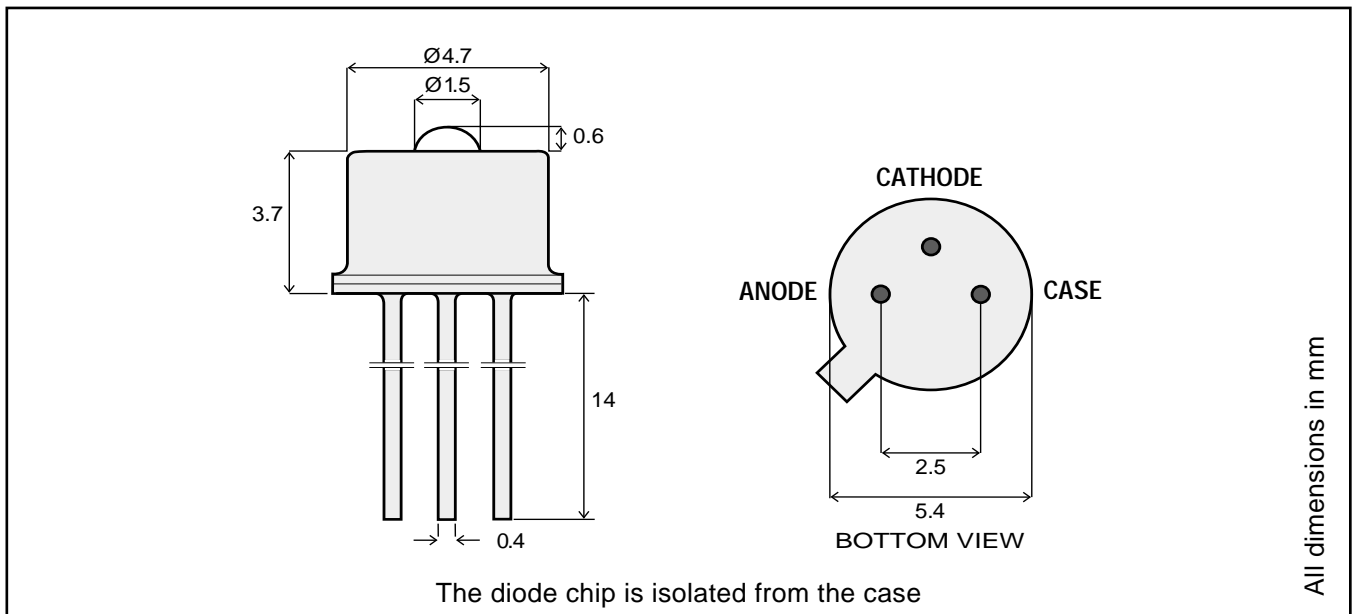
Note: The rated Responsivity applies to all options.

### 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	$V_R=3.3\text{V}$ , 5V $\lambda=850\text{nm}$	Fiber: 62.5/ 125 $\mu\text{m}$
Bandwidth	$f_c$		1.5		GHz	$V_R=3.3\text{V}$ , 5V $R_L=50\Omega$	Graded Index NA=0.275
Capacitance (Fig. 4)	C		0.8		pF	$V_R=3.3\text{V}$ , 5V, $f=1\text{MHz}$	
Dark Current	$I_d$			0.4	nA	$V_R=3.3\text{V}$ , 5V	



## 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	$dI/dT_j$		5		%/°C

## Typical Responsivity

Core Diameter/Cladding Diameter Numerical Aperture		
10/125 $\mu\text{m}$ 0.11	50/125 $\mu\text{m}$ 0.20	62.5/125 $\mu\text{m}$ 0.275
0.45 A/W	0.45 A/W	0.45 A/W

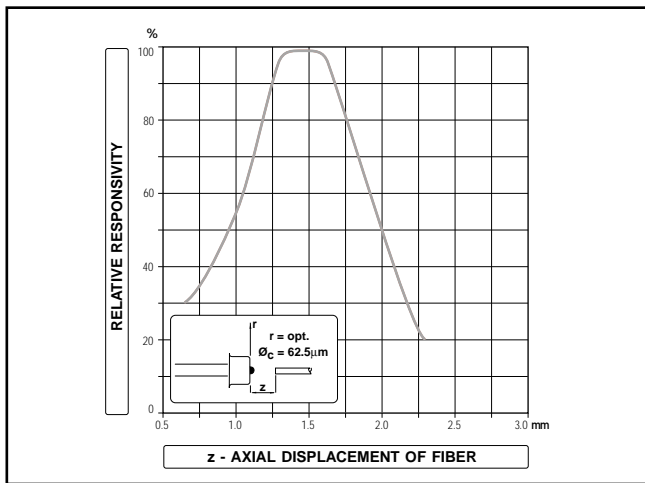


Figure 1

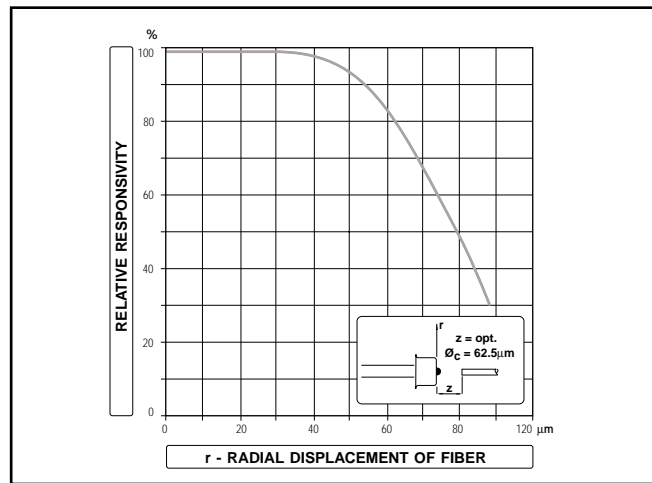


Figure 2

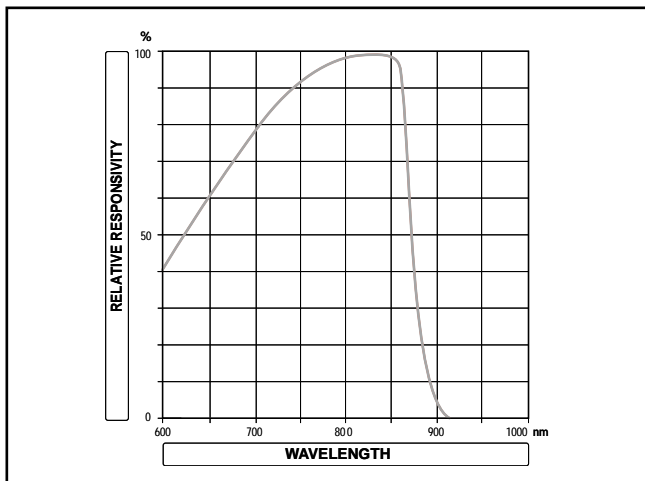


Figure 3

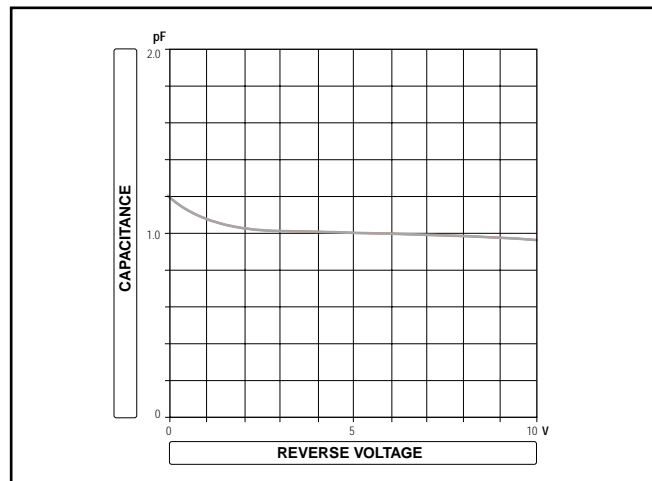
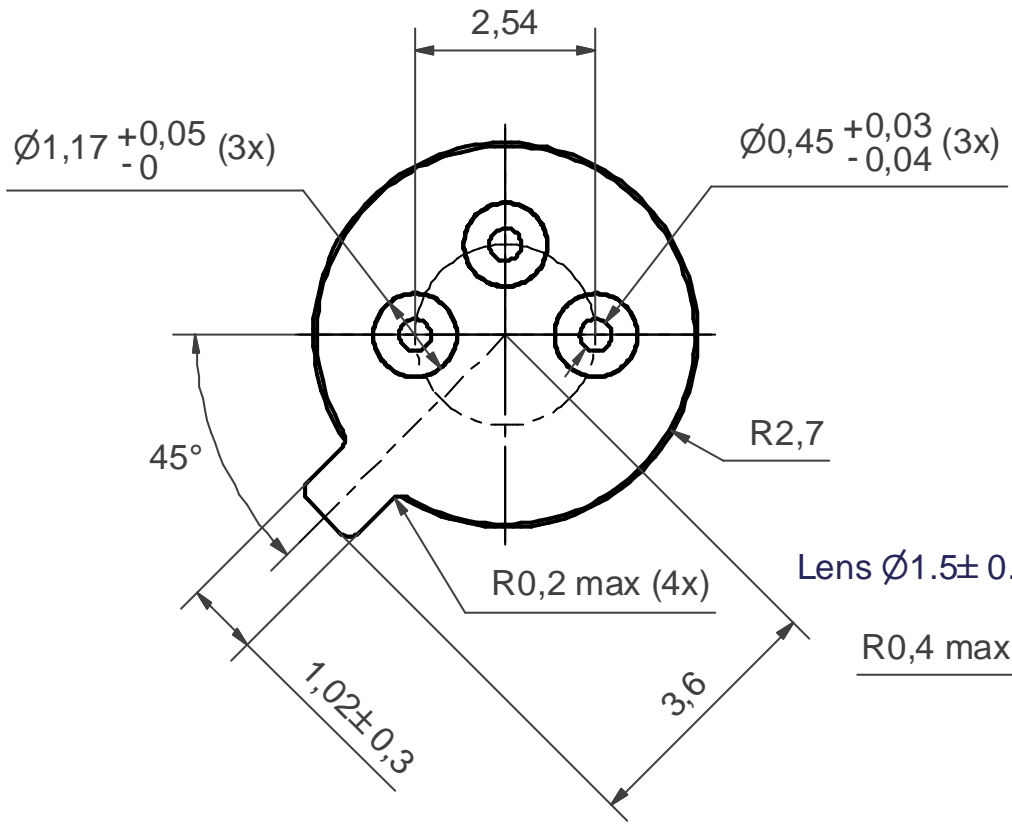
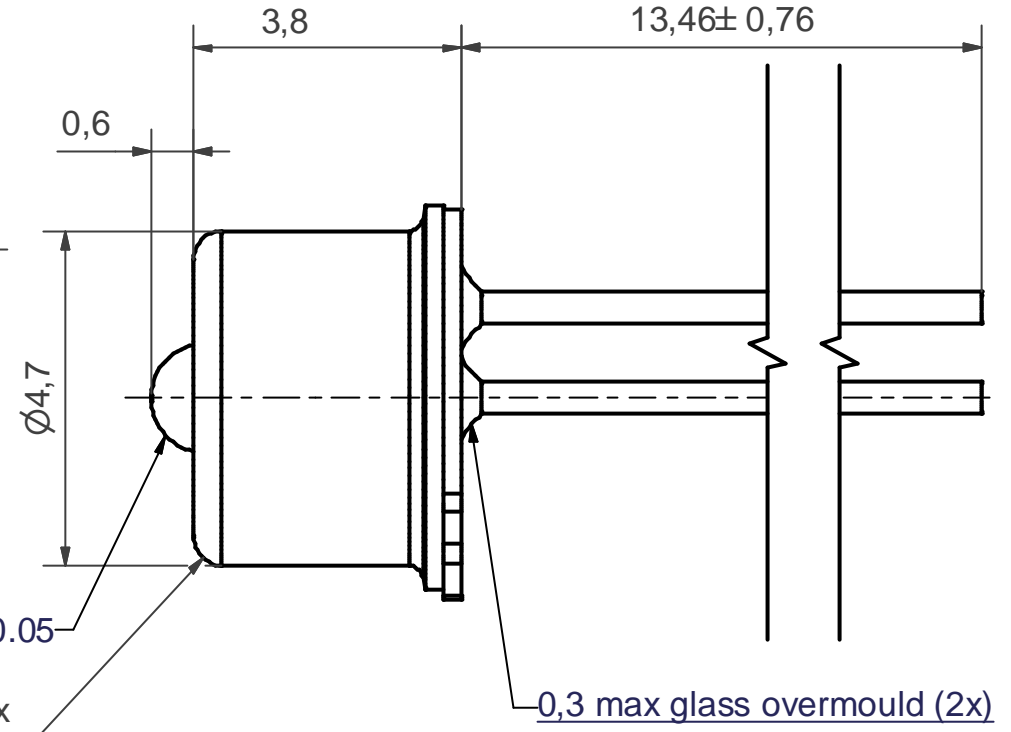


Figure 4

# 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  $\mu\text{m}$ .  
Header: Ni 2-3  $\mu\text{m}$  / Au min 1,32  $\mu\text{m}$ .

© Zarlink Semiconductor 2002. All rights reserved.

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**



**For more information about all Zarlink products  
visit our Web Site at  
[www.zarlink.com](http://www.zarlink.com)**

Information relating to products and services furnished herein by Zarlink Semiconductor Inc. or its subsidiaries (collectively "Zarlink") is believed to be reliable. However, Zarlink assumes no liability for errors that may appear in this publication, or for liability otherwise arising from the application or use of any such information, product or service or for any infringement of patents or other intellectual property rights owned by third parties which may result from such application or use. Neither the supply of such information or purchase of product or service conveys any license, either express or implied, under patents or other intellectual property rights owned by Zarlink or licensed from third parties by Zarlink, whatsoever. Purchasers of products are also hereby notified that the use of product in certain ways or in combination with Zarlink, or non-Zarlink furnished goods or services may infringe patents or other intellectual property rights owned by Zarlink.

This publication is issued to provide information only and (unless agreed by Zarlink in writing) may not be used, applied or reproduced for any purpose nor form part of any order or contract nor to be regarded as a representation relating to the products or services concerned. The products, their specifications, services and other information appearing in this publication are subject to change by Zarlink without notice. No warranty or guarantee express or implied is made regarding the capability, performance or suitability of any product or service. Information concerning possible methods of use is provided as a guide only and does not constitute any guarantee that such methods of use will be satisfactory in a specific piece of equipment. It is the user's responsibility to fully determine the performance and suitability of any equipment using such information and to ensure that any publication or data used is up to date and has not been superseded. Manufacturing does not necessarily include testing of all functions or parameters. These products are not suitable for use in any medical products whose failure to perform may result in significant injury or death to the user. All products and materials are sold and services provided subject to Zarlink's conditions of sale which are available on request.

Purchase of Zarlink's I<sup>2</sup>C components conveys a licence under the Philips I<sup>2</sup>C Patent rights to use these components in and I<sup>2</sup>C System, provided that the system conforms to the I<sup>2</sup>C Standard Specification as defined by Philips.

Zarlink, ZL and the Zarlink Semiconductor logo are trademarks of Zarlink Semiconductor Inc.

Copyright Zarlink Semiconductor Inc. All Rights Reserved.

**TECHNICAL DOCUMENTATION - NOT FOR RESALE**

---