

**MF446****High-Performance PIN****TO-46 Package with Lens**

DS5461

ISSUE 1

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**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 $\mu$ m multi-mode fibre

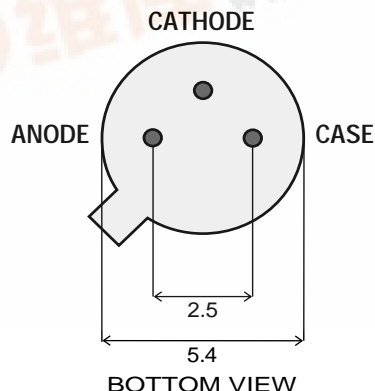
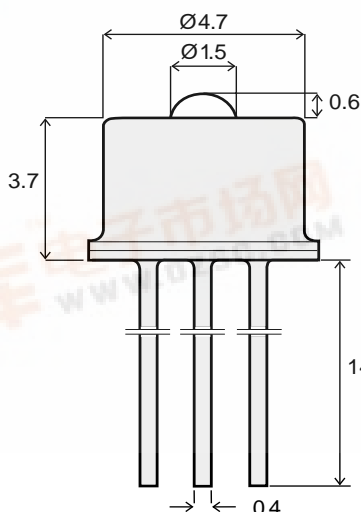
Note: The rated Responsivity applies to all options.

**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	$V_R=3.3V$ , 5V $\lambda=850nm$	Fiber: 62.5/125 $\mu$ m
Bandwidth	$f_c$		1.5		GHz	$V_R=3.3V$ , 5V $R_L=50\Omega$	Graded Index NA=0.275
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	$T_{\text{stg}}$	-55 to +125°C
Operating Temperature	$T_{\text{op}}$	-40 to +85°C
Reverse Voltage	$V_R$	30V
Soldering Temperature (2mm from the case for 10 sec)	$T_{\text{sld}}$	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

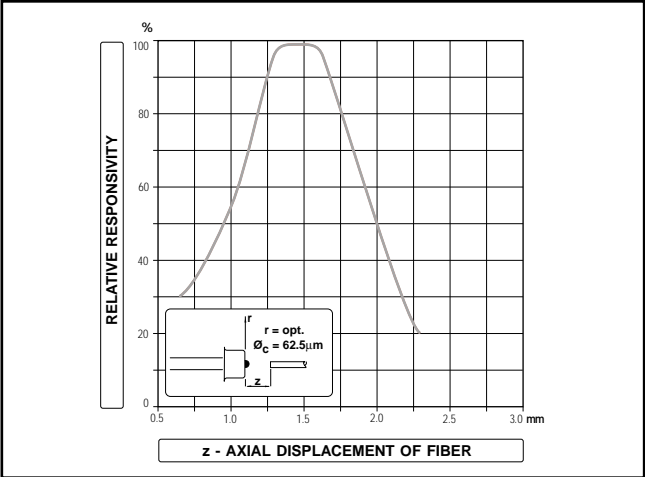


Figure 1

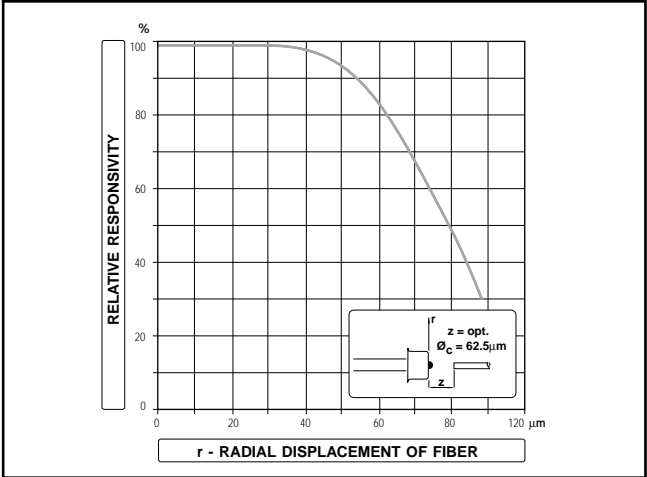


Figure 2

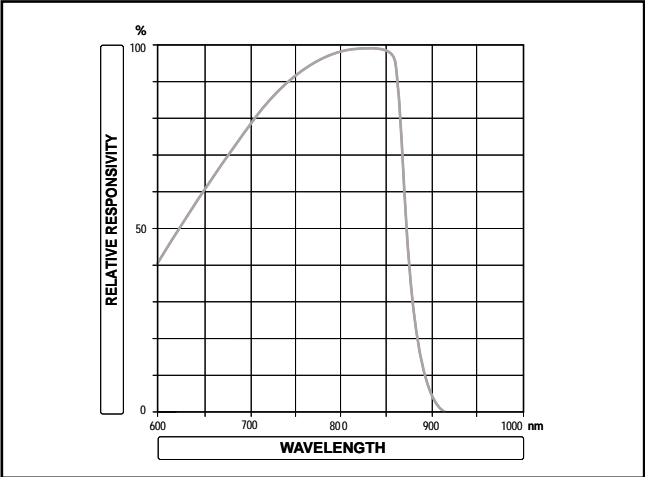


Figure 3

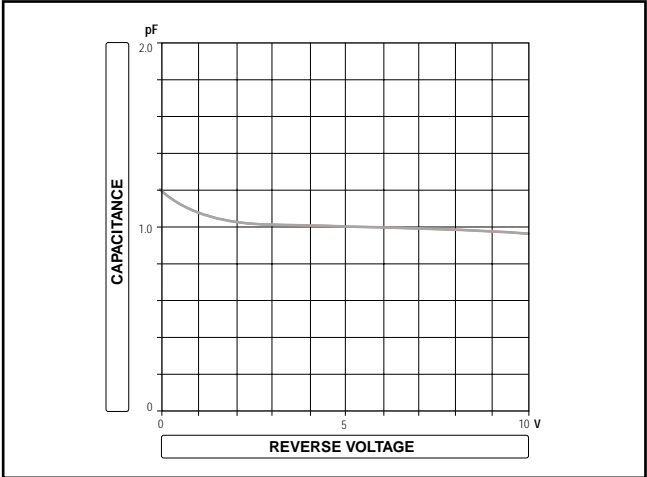


Figure 4



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