



# Obsolescence Notice

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### Ordering Information

MF443	TO-46 with lens
MF443ST	ST receptacle
MF443PT	Pigtail including 1.4 m of 50/125 mm multi-mode fiber and SC connector

**-40°C to +85°C**

Note: The rated Responsivity applies to all options.

### Features

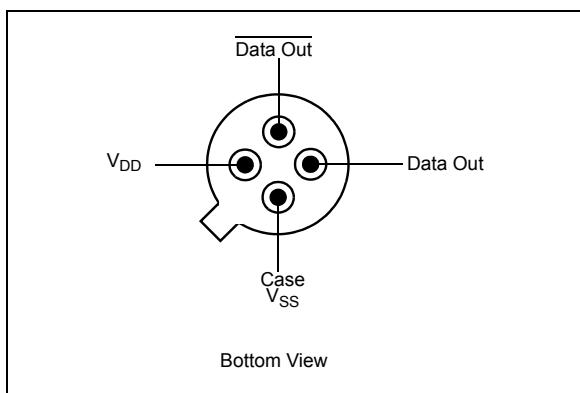
- 1310-1550 nm PIN/TIA
- Data-rate up to 200 Mbps
- TIA with AGC
- Low power consumption

### Applications

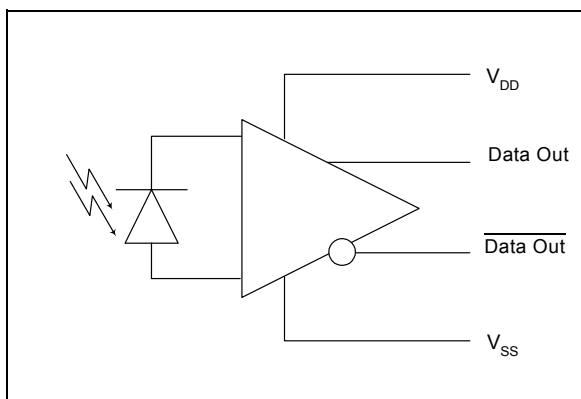
- Sonet OC-3
- FDDI
- ATM 155 Mbps
- General Purpose

### Description

This device consists of a PIN photodiode and a transimpedance amplifier assembled in a TO-46 package. It is designed for FDDI, ATM and SDH/ Sonet up to 155 Mbps. The AGC (Automatic Gain Control) ensures a wide dynamic range. Its double-lens optical system is designed for single-mode fiber as well as for multimode fiber with core diameter up to 62.5  $\mu\text{m}$ .



**Figure 1 - Pin Diagram**



**Figure 2 - Functional Schematic**

**Optical and Electrical Characteristics - Case Temperature 25°C**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Responsivity, single differential	R		100 200		kV/W	$\lambda = 1300$ nm Note 1
Output Voltage (differential, peak to peak)	$V_o$			1.2	V	
Bandwidth (3 dB <sub>el</sub> )	f <sub>c</sub>		140		MHz	P <sub>f</sub> = 1 $\mu$ W
Noise-Equivalent Power	NEP		15		nW	$\lambda = 1300$ nm
Sensitivity (BER 10 <sup>-9</sup> )	S		-39		dBm	$\lambda = 1300$ nm Extinction Ratio = 0
Dynamic Range		36	40		dB	
Output Resistance (differential)	R <sub>0</sub>		50		$\Omega$	
Power Supply Current	I <sub>DD</sub>		32	40	mA	

**Operating Conditions:** See table. Fiber: Single-mode to multimode 62.5/125  $\mu$ m.

Note 1: P<sub>f</sub> = 1  $\mu$ W average power at 10 MHz/50% duty cycle.

**Absolute Maximum Ratings**

Parameter	Symbol	Min.	Max.	Unit
Supply voltage	V <sub>DD</sub> -V <sub>SS</sub>	0	6.0	V
Operating Temperature	T <sub>op</sub>	-40	+85	°C
Storage Temperature	T <sub>stg</sub>	-55	+125	°C

**Recommended Operating Conditions**

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply Voltage	V <sub>DD</sub> -V <sub>SS</sub>	4.5	5.0	5.2	V
Output Differential Load	R <sub>L</sub>	1	3		k $\Omega$

**Typical Responsivity**

Core Diameter/Cladding Diameter Numerical Aperture			
Single Differential	10/125 $\mu$ m 0.11	50/125 $\mu$ m 0.20	62.5/125 $\mu$ m 0.275
	100 kV/W	100 kV/W	100 kV/W
	200 kV/W	200 kV/W	200 kV/W



Figure 3 - z - Axial Displacement of Fiber

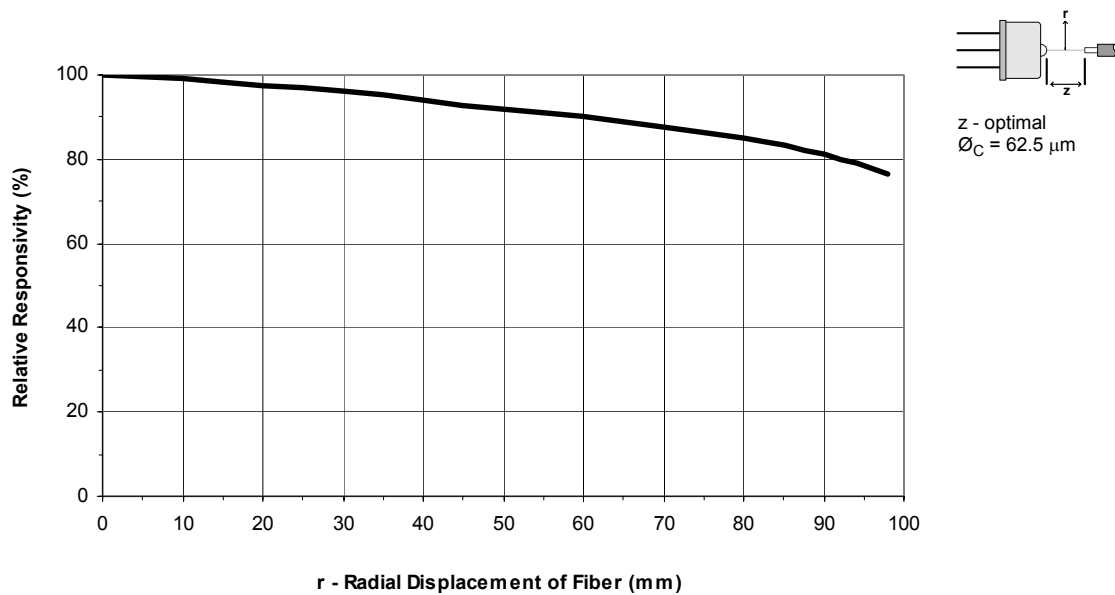


Figure 4 - r - Radial Displacement of Fiber

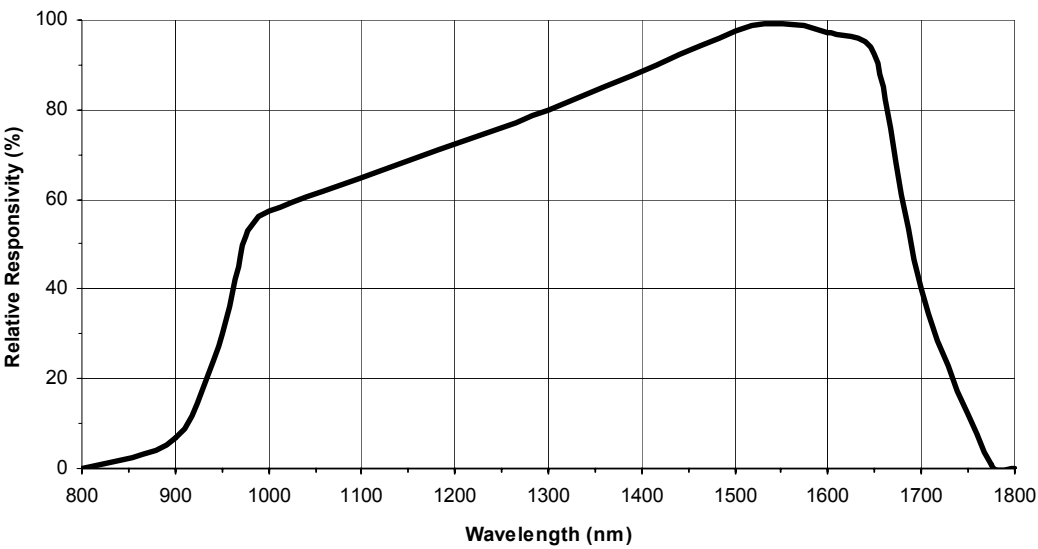
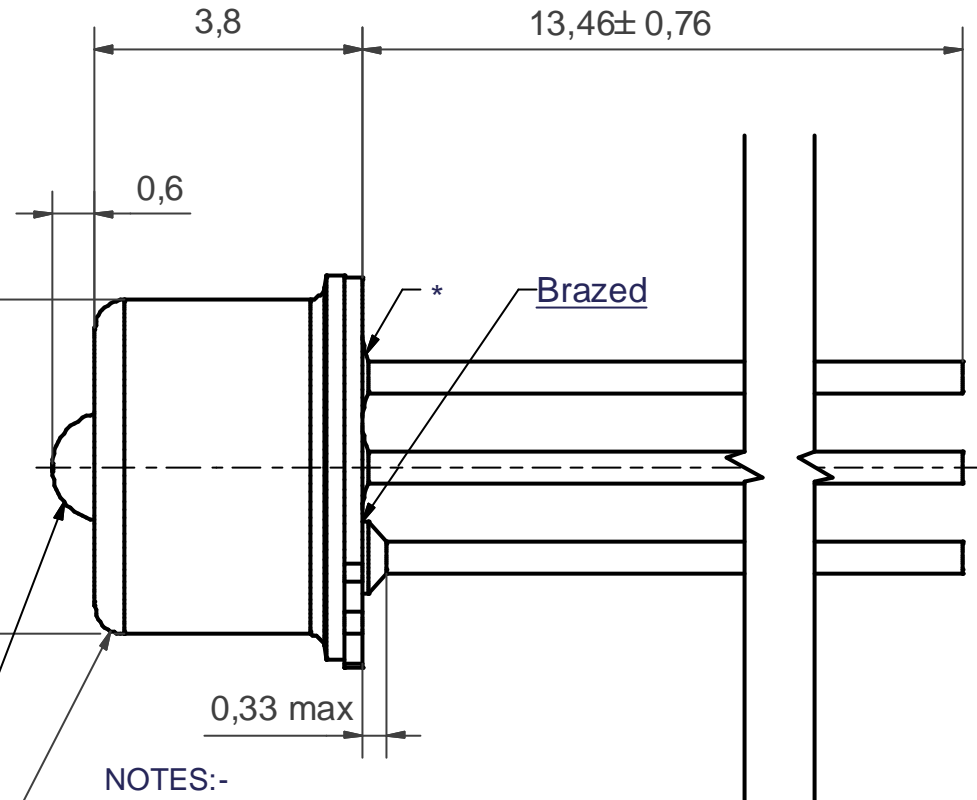


Figure 5 - Relative Responsivity vs. Wavelength

## SIDE VIEW



1. All dimensions in mm.
2. General tol. ISO-2768-mK.
3. Coating: Case: Ni 1,5-2,5 µm.  
Header: Ni min 0,5 µm / Au min 1,5 µm.

\* 0,25 max glass overmould (3x)

ISSUE	1			
ACN	JS004078R1A			
DATE	22-MAR-03			
APPRD.	TD/BE			



	Title JS004078
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Package code	TB
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Drawing type	Package drawing, TO-46 with lens
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Title	JS004078
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