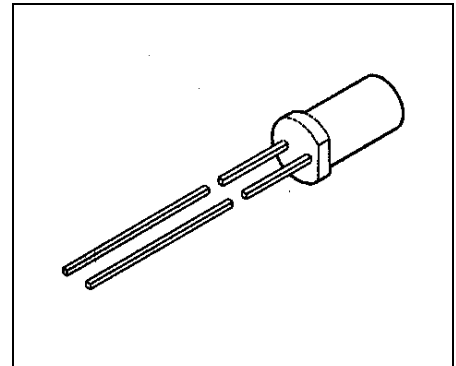


**Plastic Fiber Optic Photodiode Detector  
Plastic Connector Housing**

**SFH250  
SFH250V**

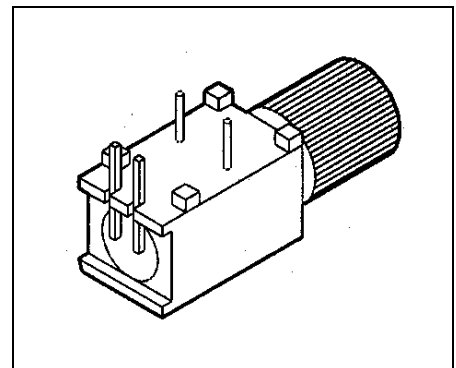
**Features**

- 2.2 mm Aperture holds Standard 1000 Micron Plastic Fiber
- No Fiber Stripping Required
- Fast Switching Time
- Good Linearity
- Sensitive in visible and near IR Range
- Molded Microlens for Efficient Coupling



**Plastic Connector Housing**

- Mounting Screw Attached to the Connector
- Interference Free Transmission from light-Tight Housing
- Transmitter and Receiver can be flexibly positioned
- No Cross Talk
- Auto insertable and Wave solderable
- Supplied in Tubes



**Applications**

- Household Electronics
- Power Electronics
- Optical Networks
- Light Barriers

Type	Ordering Code
SFH250	Q62702-P1012
SFH250V	Q62702-P0263

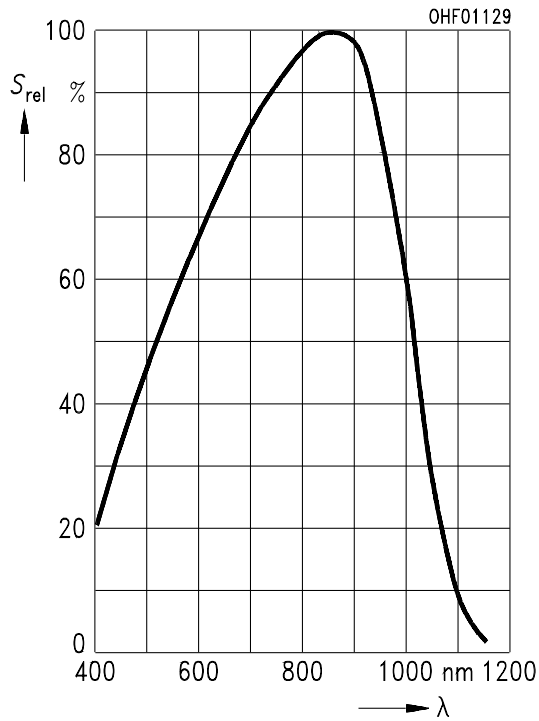
**Technical Data**
**Absolute Maximum Ratings**

Parameter	Symbol	Limit Values		Unit
		min.	max.	
Operating Temperature Range	$T_{OP}$	-40	+85	°C
Storage Temperature Range	$T_{STG}$	-40	+100	°C
Junction Temperature	$T_J$		100	°C
Soldering Temperature (2 mm from case bottom, $t \leq 5$ s)	$T_S$		260	°C
Reverse Voltage	$V_R$		30	V
Power Dissipation	$P_{TOT}$		100	mW
Thermal Resistance, Junction/Air	$R_{thJA}$		750	K/W

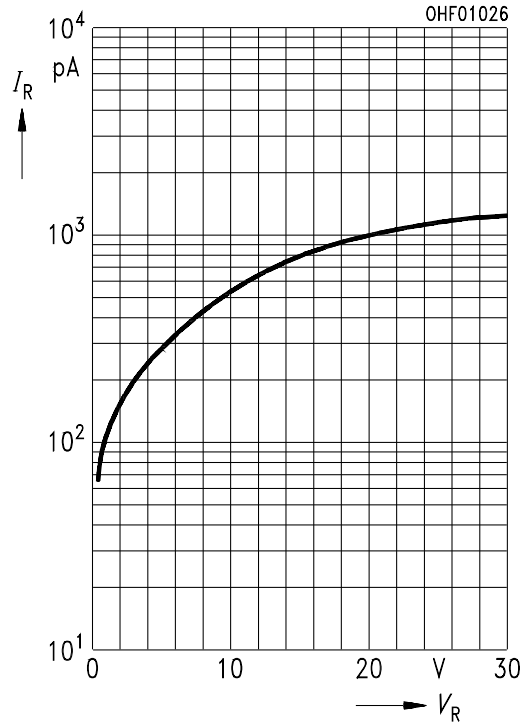
**Characteristics** ( $T_A = 25^\circ\text{C}$ )

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Maximum Photosensitivity Wavelength	$\lambda_{S_{\max}}$		850		nm
Photosensitivity Spectral Range ( $S = 10\% S_{\max}$ )	$\lambda$	400		1100	nm
Dark Current ( $V_R = 20\text{ V}$ )	$I_R$		1 ( $\leq 10$ )		nA
Capacitance ( $f = 1\text{ MHz}$ , $V_R = 0\text{ V}$ )	$C_O$		11		pF
Rise and Fall Times of Photo Current ( $R_L = 50\ \Omega$ , $V_R = 30\text{ V}$ , $\lambda = 880\text{ nm}$ ) 10% to 90% 90% to 10%	$t_R$ $t_F$		0.01 0.01		$\mu\text{s}$
Photo Current ( $\Phi_{IN} = 10\ \mu\text{W}$ coupled from the end of a plastic fiber, $V_R = 5\text{ V}$ ) $\lambda = 660\text{ nm}$ $\lambda = 950\text{ nm}$	$I_P$		3 ( $\geq 1.6$ ) 4 ( $\geq 2.5$ )		$\mu\text{A}$
Temperature Coefficient $I_P$ $\lambda = 560\text{ to }660\text{ nm}$	$TC_1$		-0.04		%K
Temperature Coefficient $I_P$ $\lambda = 830\text{ nm}$			0.04		
Temperature Coefficient $I_P$ $\lambda = 950\text{ nm}$			0.2		

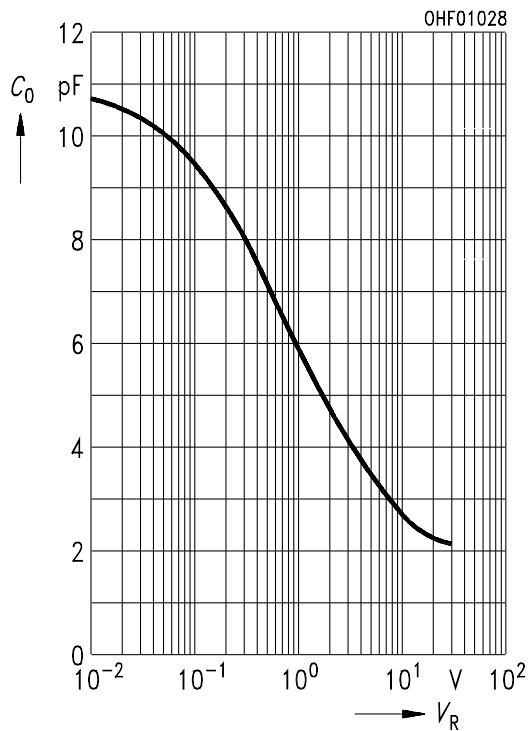
**Relative Spectral Sensitivity  $S_{rel} = f(\lambda)$**



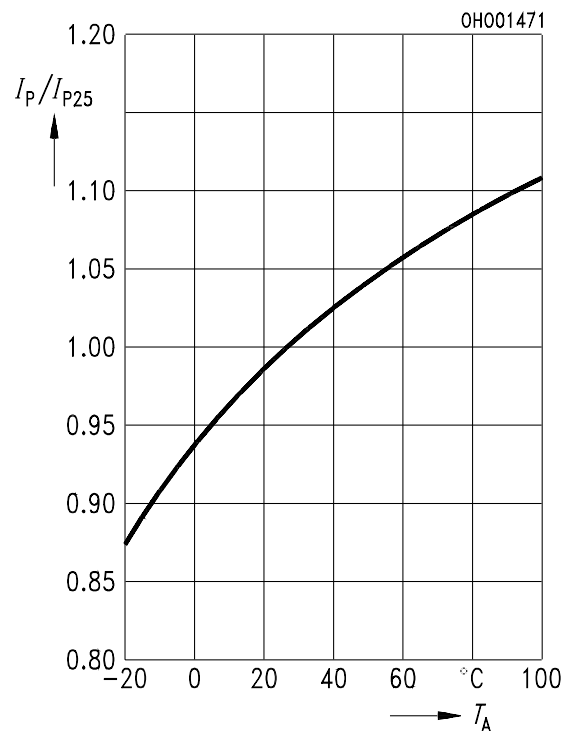
**Dark Current  $I_R = f(V_R), T_A = 25^\circ\text{C}$**



**Capacitance  $C_0 = f(V_R), f = 1 \text{ MHz}, E_V = 0$**



**Photocurrent  $I_P/I_{P25} = f(T_A), \lambda = 950 \text{ nm}$**





---

**SFH250**  
**SFH250V**

**Revision History:**           **2004-03-19**

DS1

---

Previous Version:           2002-03-14

---

**Edition 2004-03-19**

**Published by Infineon Technologies AG,  
St.-Martin-Strasse 53,  
81669 München, Germany**

**© Infineon Technologies AG 2004.  
All Rights Reserved.**

**Attention please!**

The information herein is given to describe certain components and shall not be considered as a guarantee of characteristics.

Terms of delivery and rights to technical change reserved.

We hereby disclaim any and all warranties, including but not limited to warranties of non-infringement, regarding circuits, descriptions and charts stated herein.

**Information**

For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office ([www.infineon.com](http://www.infineon.com)).

**Warnings**

Due to technical requirements components may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies Office.

Infineon Technologies Components may only be used in life-support devices or systems with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system, or to affect the safety or effectiveness of that device or system. Life support devices or systems are intended to be implanted in the human body, or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.