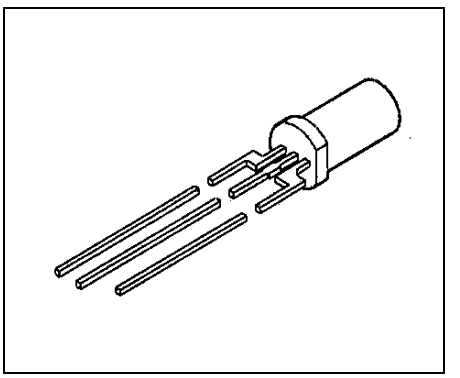
Plastic Fiber Optic Phototransistor Detector SFH350
Plastic Connector Housing SFH350V

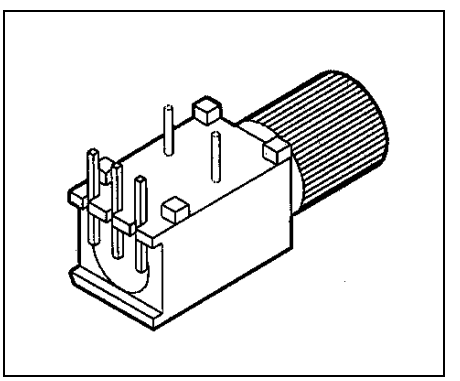
Features

- 2.2 mm Aperture holds Standard 1000 Micron Plastic Fiber
- No Fiber Stripping Required
- 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
SFH350	Q62702-P1033
SFH350V	Q62702-P0264

Technical Data

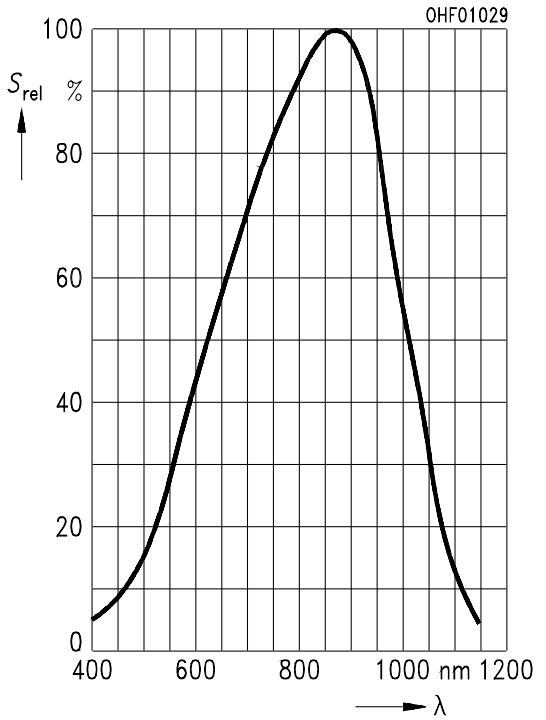
Absolute Maximum Ratings

Parameter	Symbol	Limit Values		Unit
		min.	max.	
Operating Temperature Range	T_{OP}	–40	+85	°C
Storage Temperature Range	T_{STG}	–40	+100	°C
Soldering Temperature (2 mm from case bottom, $t \leq 5$ s)	T_S		260	°C
Collector-Emitter Voltage	V_{CE}		50	V
Collector Current	I_C		50	mA
Collector Peak Current ($t \leq 10$ s)	I_{CP}		100	mA
Emitter-Bias Voltage	V_{EB}		7	V
Reverse Voltage	V_R		30	V
Power Dissipation T_A = 25°C	P_{TOT}		200	mW
Thermal Resistance, Junction/Air	R_{thJA}		375	K/W

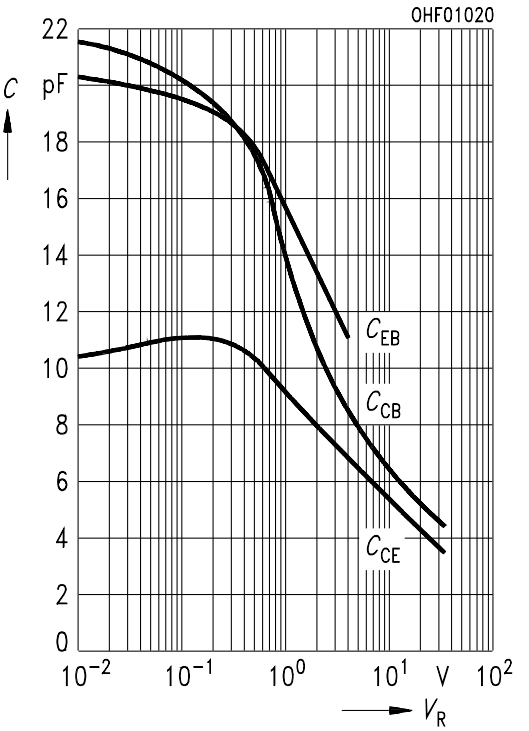
Characteristics (T_A = 25°C)

Parameter	Symbol	Values			Unit
		min.	typ.	max.	
Maximum Photosensitivity Wavelength	λ_{Smax}		850		nm
Photosensitivity Spectral Range (S = 10% S_{max})	λ	400		1100	nm
Dark Current (V_R = 20 V)	I_R		1 (≤ 10)		nA
Capacitance (f = 1 MHz, without light) (V_{CE} = 0 V) (V_{CB} = 0 V) (V_{EB} = 0 V)	 C_{CE} C_{CB} C_{EB}		 10.5 21.5 20.5		pF
Rise and Fall Times of Photo Current (R_L = 1 kΩ, V_{CE} = 5 V, I_C = 1.0 mA, λ = 959 nm) 10% to 90% 90% to 10%	 t_R t_F		 20 20		µs
Current Gain	HFE		500		
Collector Dark Current (V_{CE} = 5 V)	I_{CE0}		2 (≤ 50)		nA
Photo Current (V_{CE} = 5 V, Φ_{IN} = 10 µW coupled from the end of a plastic fiber, λ = 660 nm)	I_{CE}		0.8 (≥ 0.16)		mA
Temperature Coefficient HFE	TC_{HFE}		0.55		%/K
Temperature Coefficient I_{CE} λ = 560 to 660 nm	TC_I		0.34		%/K
Temperature Coefficient I_{CE} λ = 830 nm			0.49		
Temperature Coefficient I_{CE} λ = 950 nm			0.66		

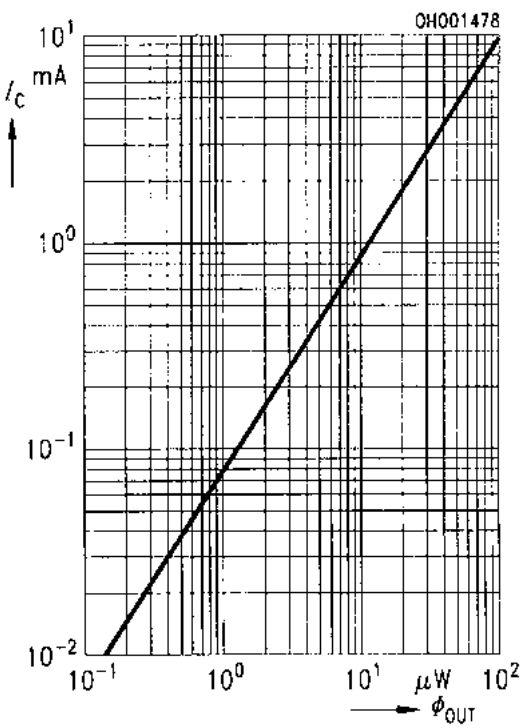
Relative Spectral Sensitivity $S_{rel} = f(\lambda)$



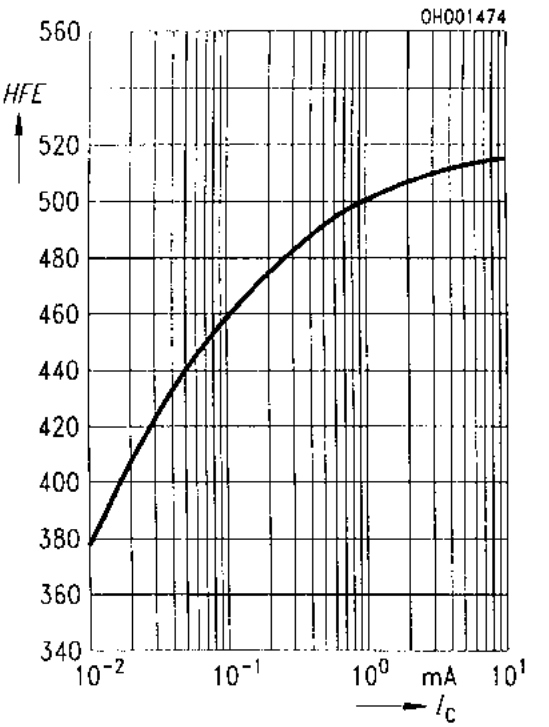
Capacitance $C = f(V_R)$, f = 1 MHz, E_V = 0



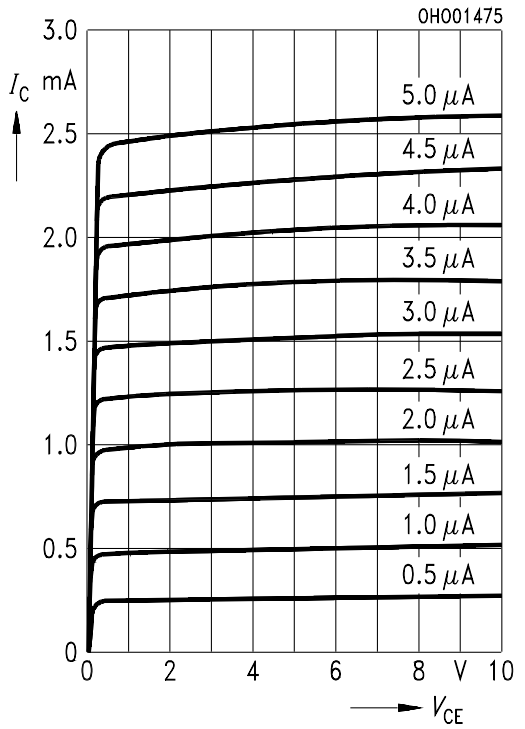
Photocurrent $I_C = f(\Phi_{OUT})$, V_{CE} = 5 V, λ = 560...950 nm



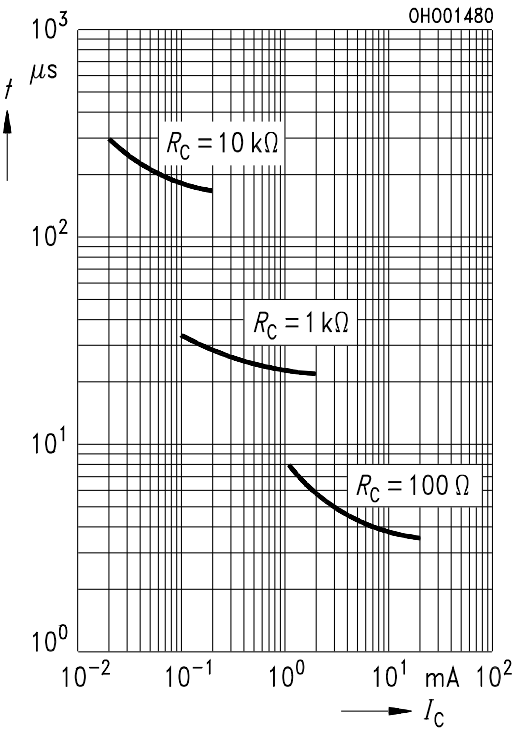
Current Gain $HFE = f(I_C)$, V_{CE} = 5 V, T_A = 25°C



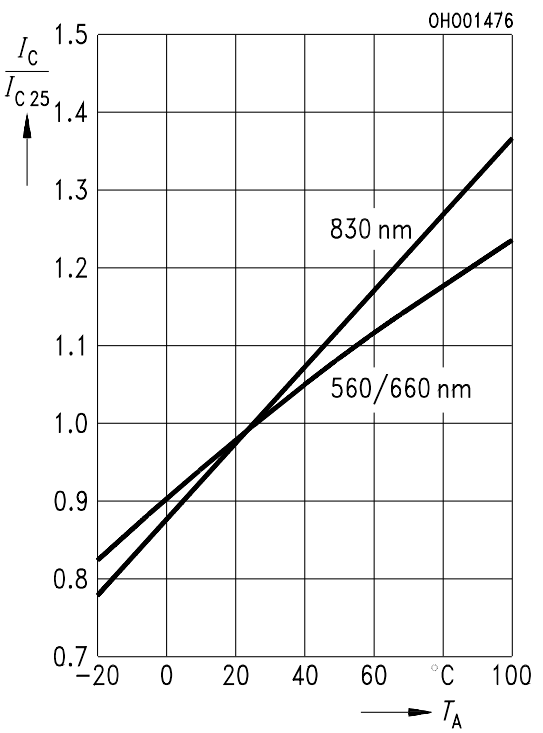
Output Characteristics $I_C = f(V_{CE})$, I_B = parameter



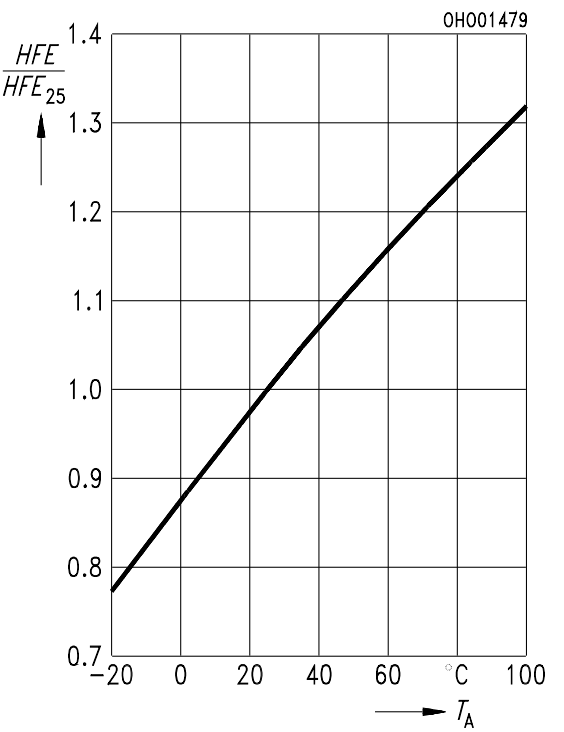
Response Time $t = f(I_C)$, V_{CC} = 5 V, λ = 950 nm



Photocurrent $I_C/I_{C25} = f(T_A)$, V_{CE} = 5 V, λ = parameter

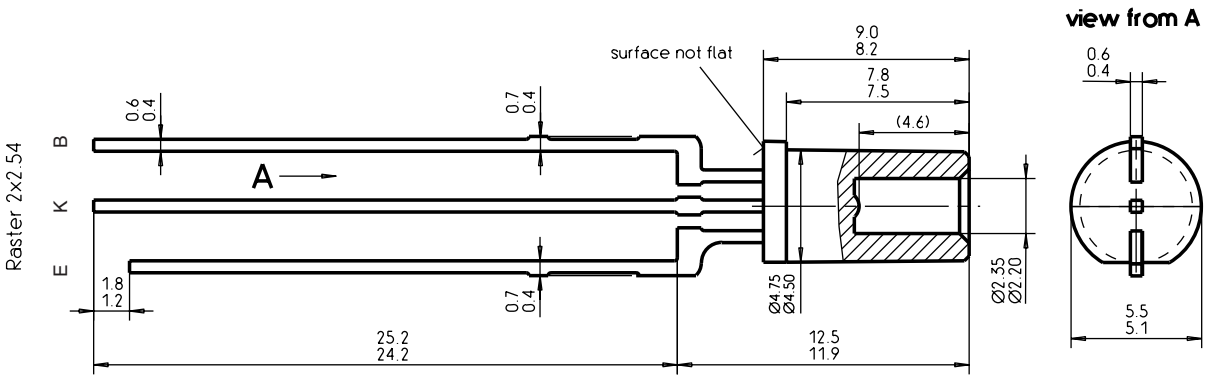


Current Gain $HFE/HFE_{25} = f(T_A)$, V_{CE} = 5 V, I_C = 1 mA



Package Outlines

SFH350

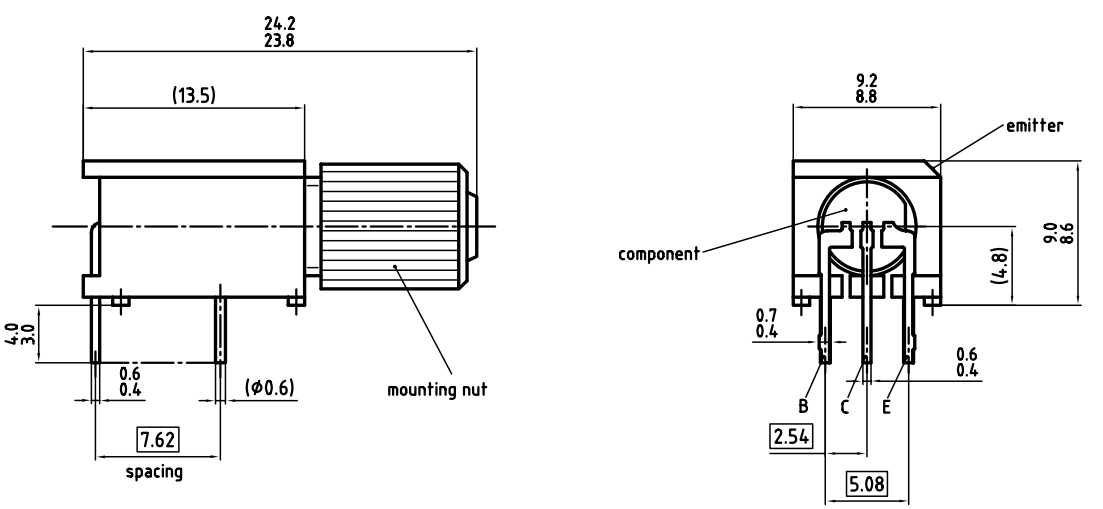


Dimensions in mm

File: 4203

Figure 1

SFH350V



Dimensions in mm

File: 4204

Figure 2

SFH350
SFH350V

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

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**).

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.