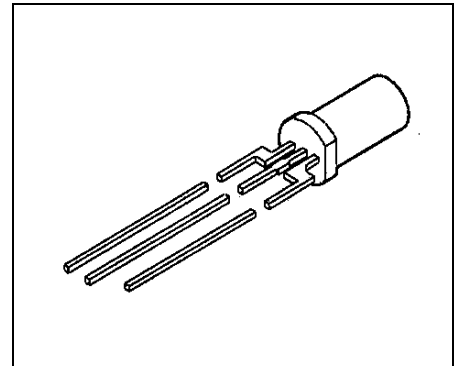


**Plastic Fiber Optic Phototransistor Detector
Plastic Connector Housing**

**SFH350
SFH350V**

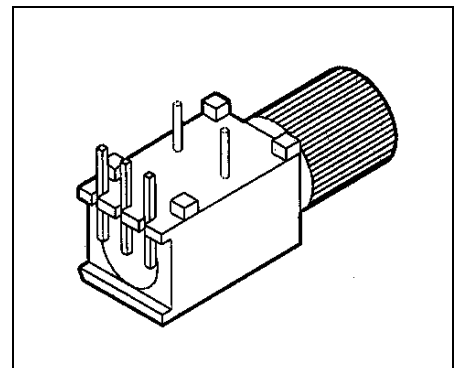
Features

- 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

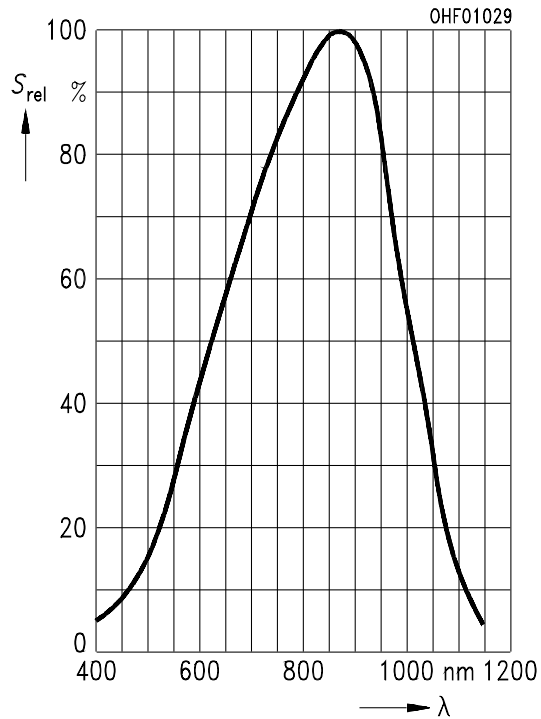
Technical Data
Absolute Maximum Ratings

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 $T_A = 25^\circ\text{C}$	P_{TOT}		200	mW
Thermal Resistance, Junction/Air	R_{thJA}		375	K/W

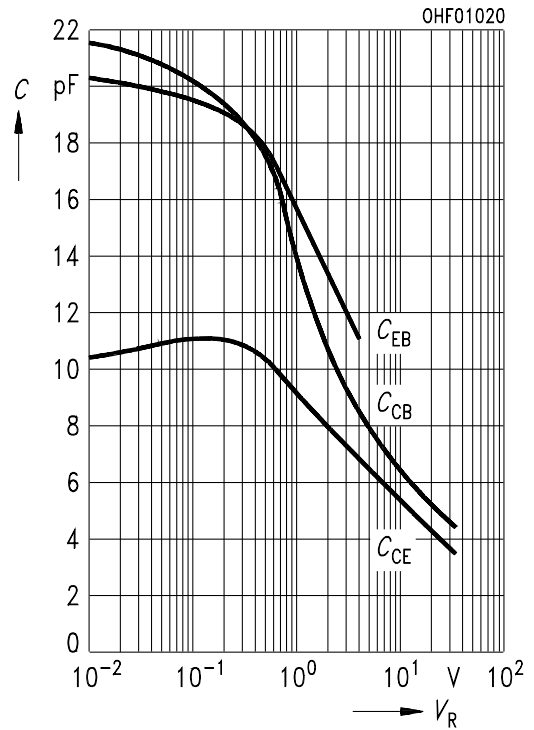
Characteristics ($T_A = 25^\circ\text{C}$)

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 ($V_R = 20\text{ V}$)	I_R		1 (≤ 10)		nA
Capacitance ($f = 1\text{ MHz}$, without light) ($V_{CE} = 0\text{ V}$) ($V_{CB} = 0\text{ V}$) ($V_{EB} = 0\text{ V}$)	C_{CE} C_{CB} C_{EB}		10.5 21.5 20.5		pF
Rise and Fall Times of Photo Current ($R_L = 1\text{ k}\Omega$, $V_{CE} = 5\text{ V}$, $I_C = 1.0\text{ mA}$, $\lambda = 959\text{ nm}$) 10% to 90% 90% to 10%	t_R t_F		20 20		μs
Current Gain	HFE		500		
Collector Dark Current ($V_{CE} = 5\text{ V}$)	I_{CE0}		2 (≤ 50)		nA
Photo Current ($V_{CE} = 5\text{ V}$, $\Phi_{IN} = 10\text{ }\mu\text{W}$ coupled from the end of a plastic fiber, $\lambda = 660\text{ nm}$)	I_{CE}		0.8 (≥ 0.16)		mA
Temperature Coefficient HFE	TC_{HFE}		0.55		%/K
Temperature Coefficient I_{CE} $\lambda = 560\text{ to }660\text{ nm}$	TC_1		0.34		%K
Temperature Coefficient I_{CE} $\lambda = 830\text{ nm}$			0.49		
Temperature Coefficient I_{CE} $\lambda = 950\text{ nm}$			0.66		

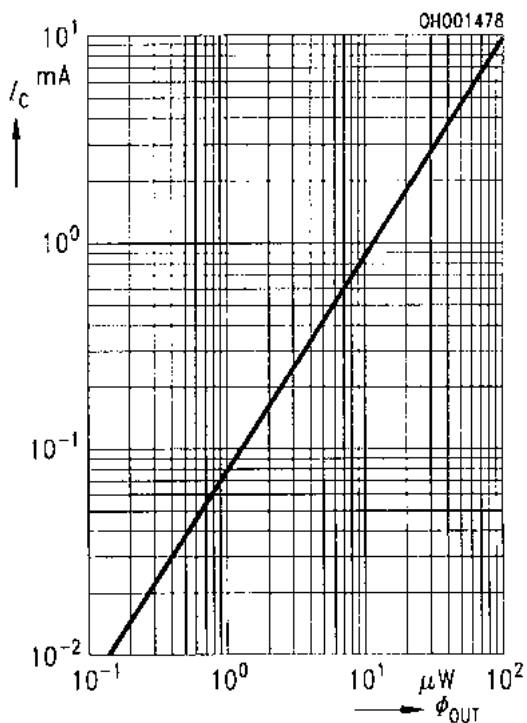
Relative Spectral Sensitivity $S_{rel} = f(\lambda)$



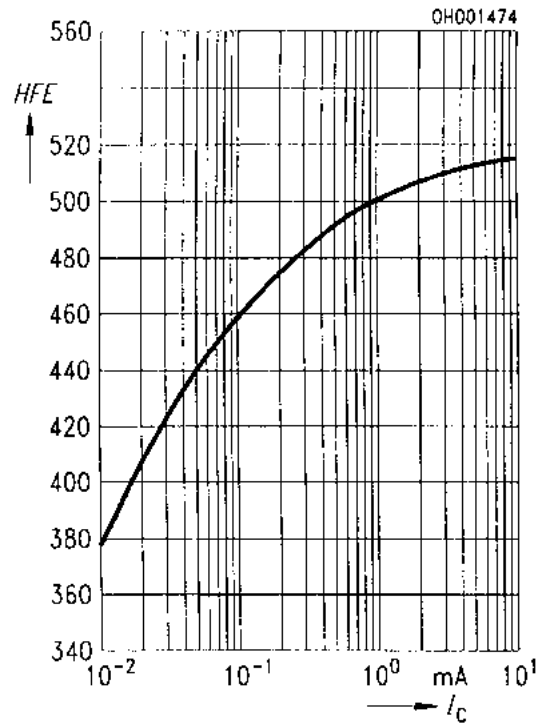
Capacitance $C = f(V_R), f = 1 \text{ MHz}, E_V = 0$



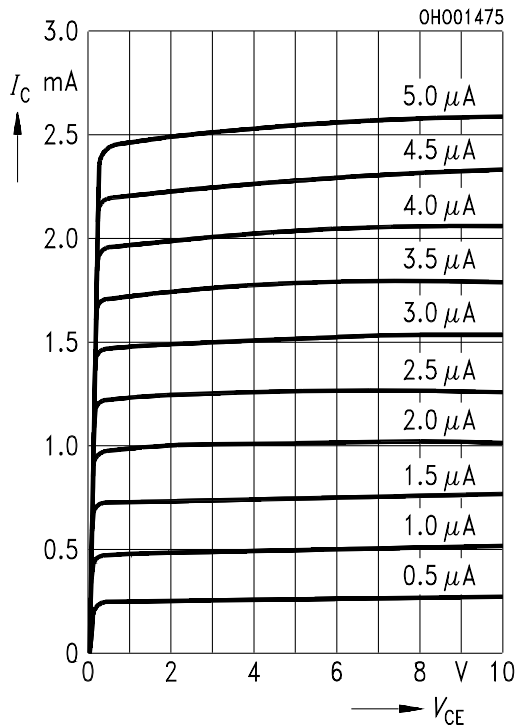
Photocurrent $I_C = f(\Phi_{OUT}), V_{CE} = 5 \text{ V}, \lambda = 560 \dots 950 \text{ nm}$



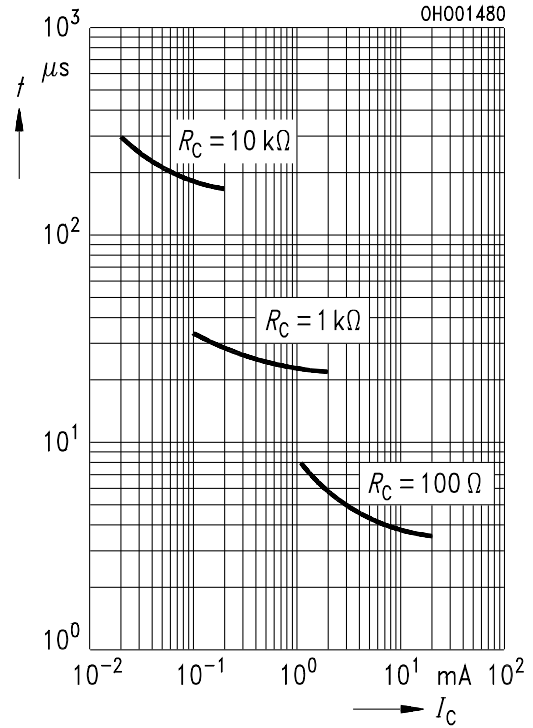
Current Gain $HFE = f(I_C), V_{CE} = 5 \text{ V}, T_A = 25^\circ\text{C}$



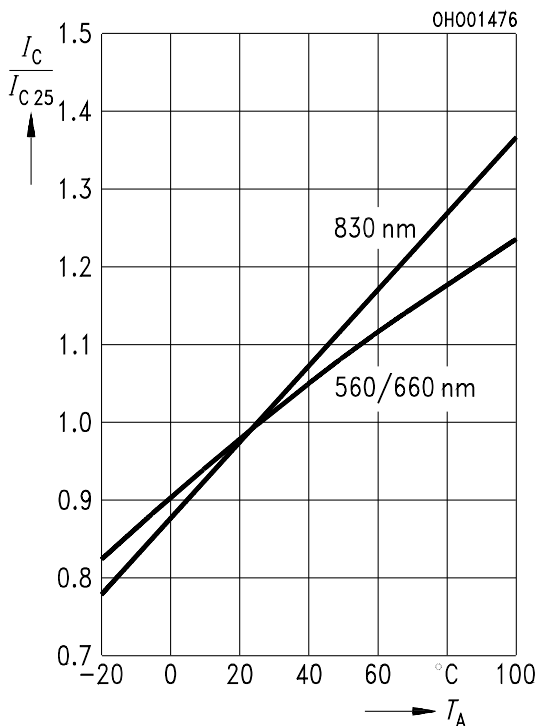
Output Characteristics $I_C = f(V_{CE})$,
 $I_B = \text{parameter}$



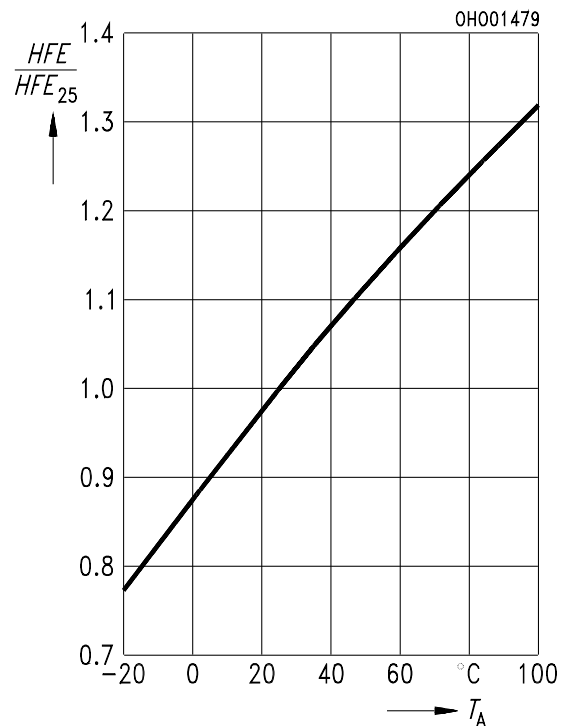
Response Time $t = f(I_C)$, $V_{CC} = 5 \text{ V}$,
 $\lambda = 950 \text{ nm}$



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



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



Package Outlines

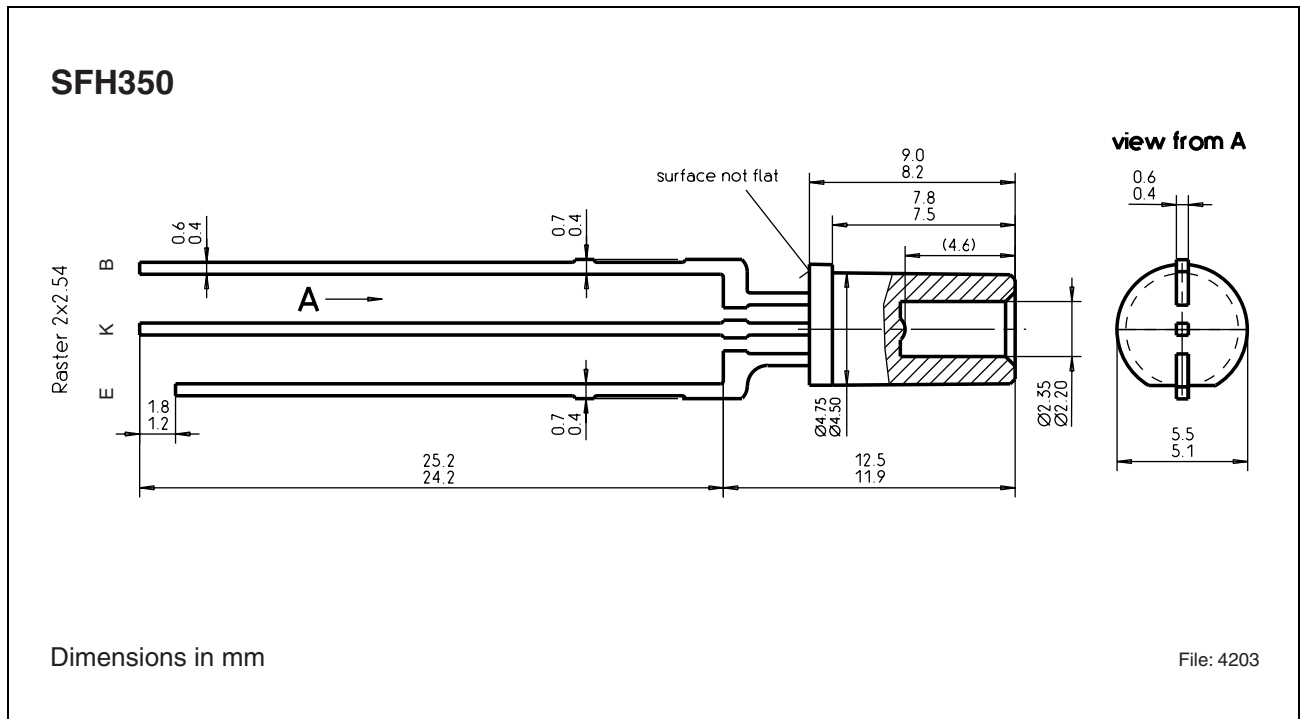


Figure 1

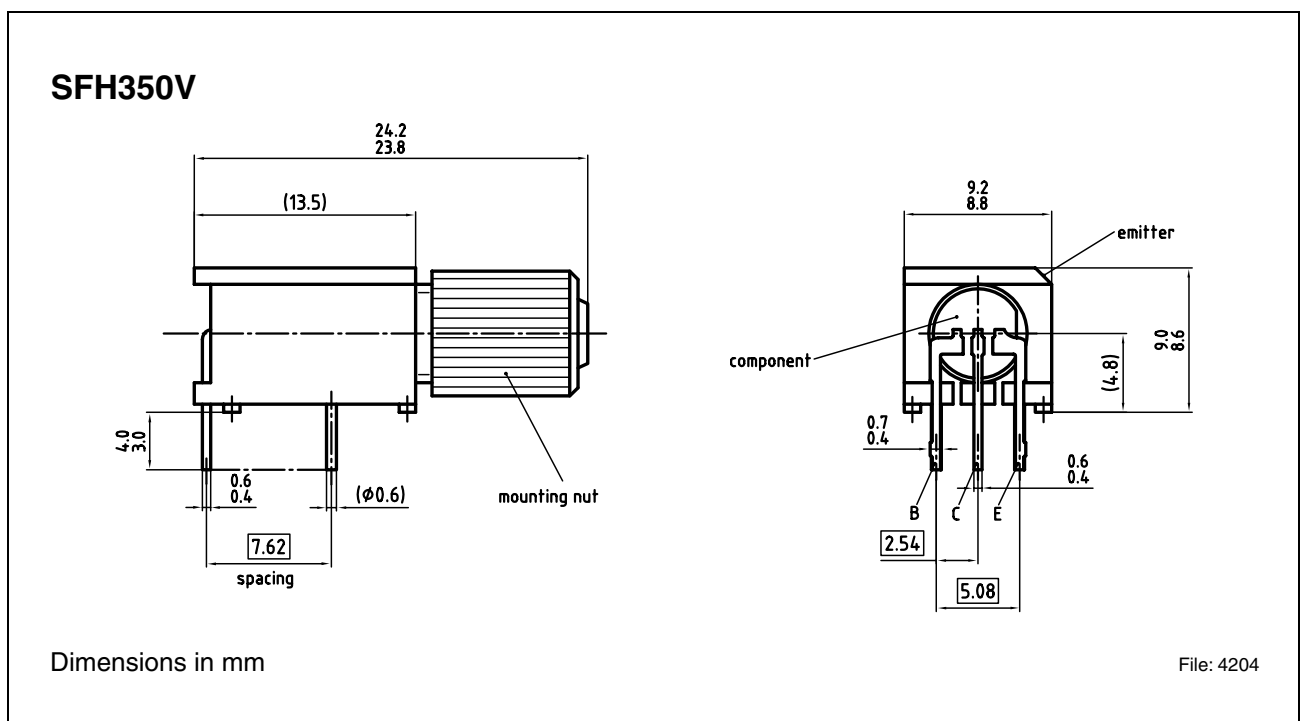


Figure 2

SFH350
SFH350V

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

DS1

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Edition 2004-03-19

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