

**Plastic Fiber Optic Transmitter Diode
Plastic Connector Housing**

**SFH450
SFH450V**

Features

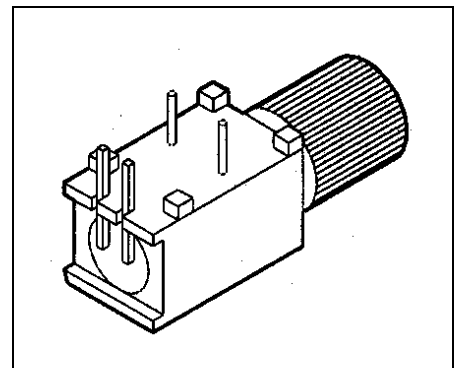
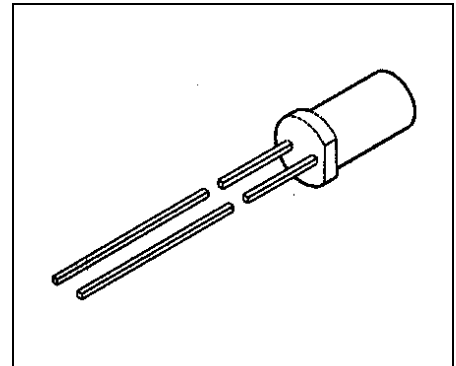
- 2.2 mm Aperture holds Standard 1000 Micron Plastic Fiber
- No Fiber Stripping Required
- Good Linearity (Forward current > 2 mA)
- Molded Microlens for Efficient Coupling

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
SFH450	Q62702-P1034
SFH450V	Q62702-P0265

Technical Data
Absolute Maximum Ratings

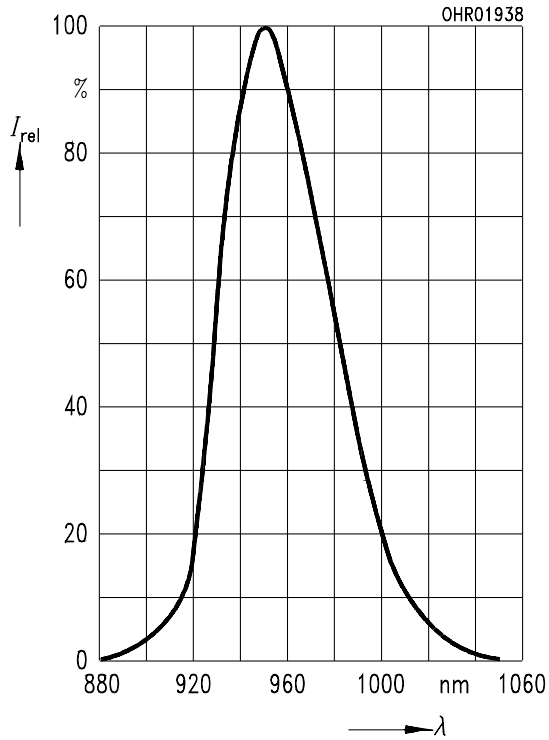
Parameter	Symbol	Limit Values		Unit
		min.	max.	
Operating Temperature Range	T_{OP}	-40	+85	°C
Storage Temperature Range	T_{STG}	-40	+100	°C
Junction Temperature	T_J		100	°C
Soldering Temperature (2 mm from case bottom, $t \leq 5$ s)	T_S		260	°C
Reverse Voltage	V_R		5	V
Forward Current	I_F		130	mA
Surge Current ($t \leq 10 \mu\text{s}$, $D = 0$)	I_{FSM}		3.5	A
Power Dissipation	P_{TOT}		200	mW
Thermal Resistance, Junction/Air	R_{thJA}		375	K/W

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

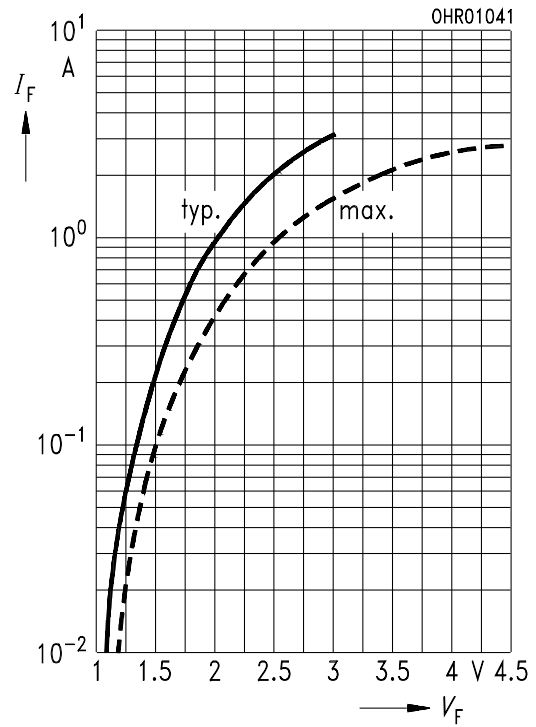
Parameter	Symbol	Value	Unit
Peak Wavelength	λ_{Peak}	950	nm
Spectral Bandwidth	$\Delta\lambda$	55	nm
Switching Times ($R_G = 50 \Omega$, $I_{F(\text{LOW})} = 0.1 \text{ mA}$, $I_{F(\text{HIGH})} = 50 \text{ mA}$) 10% to 90% 90% to 10%	t_R t_F	1 1	μs
Capacitance ($f = 1 \text{ MHz}$, $V_R = 0 \text{ V}$)	C_O	40	pF
Forward Voltage ($I_F = 10 \text{ mA}$)	V_F	1.3 (≤ 1.5)	V
Output Power Coupled into Plastic Fiber ($I_F = 10 \text{ mA}$) ¹⁾	Φ_{IN}	90 (≥ 40)	μW
Temperature Coefficient Φ_{IN}	TC_Φ	-0.5	%/K
Temperature Coefficient V_F	TC_V	-1.5	mV/K
Temperature Coefficient λ_{Peak}	TC_λ	0.3	nm/K

¹⁾ The output power coupled into plastic fiber is measured with a large area detector after a short fiber (about 30 cm). This value must not be used for calculating the power budget for a fiber optic system with a long fiber because the numerical aperture of plastic fibers is decreasing on the first meters. Therefore the fiber seems to have compared with the specified value a higher attenuation on the first meters.

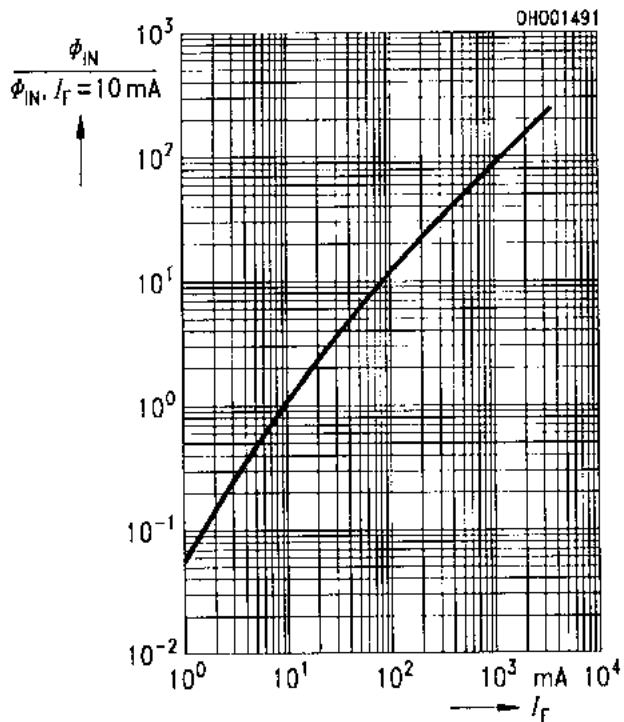
Relative Spectral Emission $I_{rel} = f(\lambda)$



Forward Current $I_F = f(V_F)$
single pulse, duration = 20 μ s

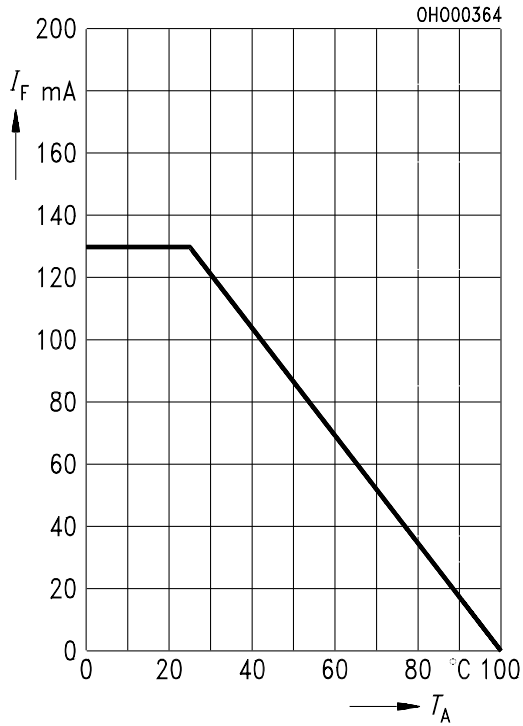


Relative Output Power $\Phi_{IN}/\Phi_{IN(10\text{ mA})} = f(I_F)$

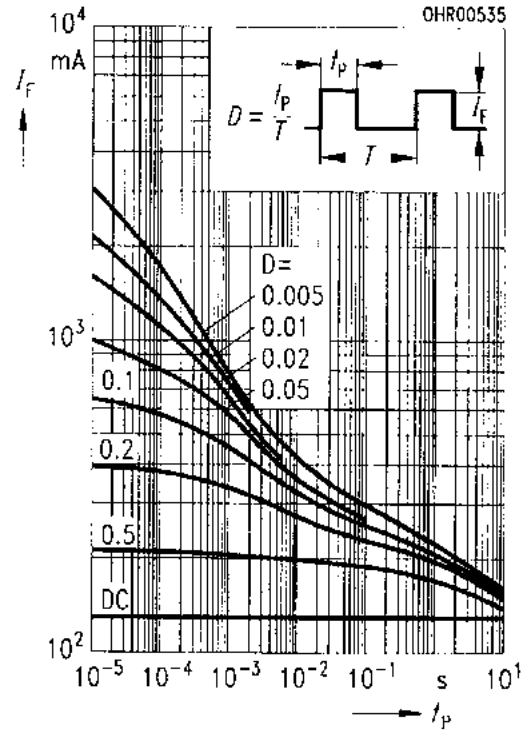


Maximum Permissible Forward Current

$I_F = f(T_A)$



**Permissible Pulse Load $I_F = f(t_P)$,
duty cycle $D =$ parameter, $T_A = 25^\circ\text{C}$**



Package Outlines

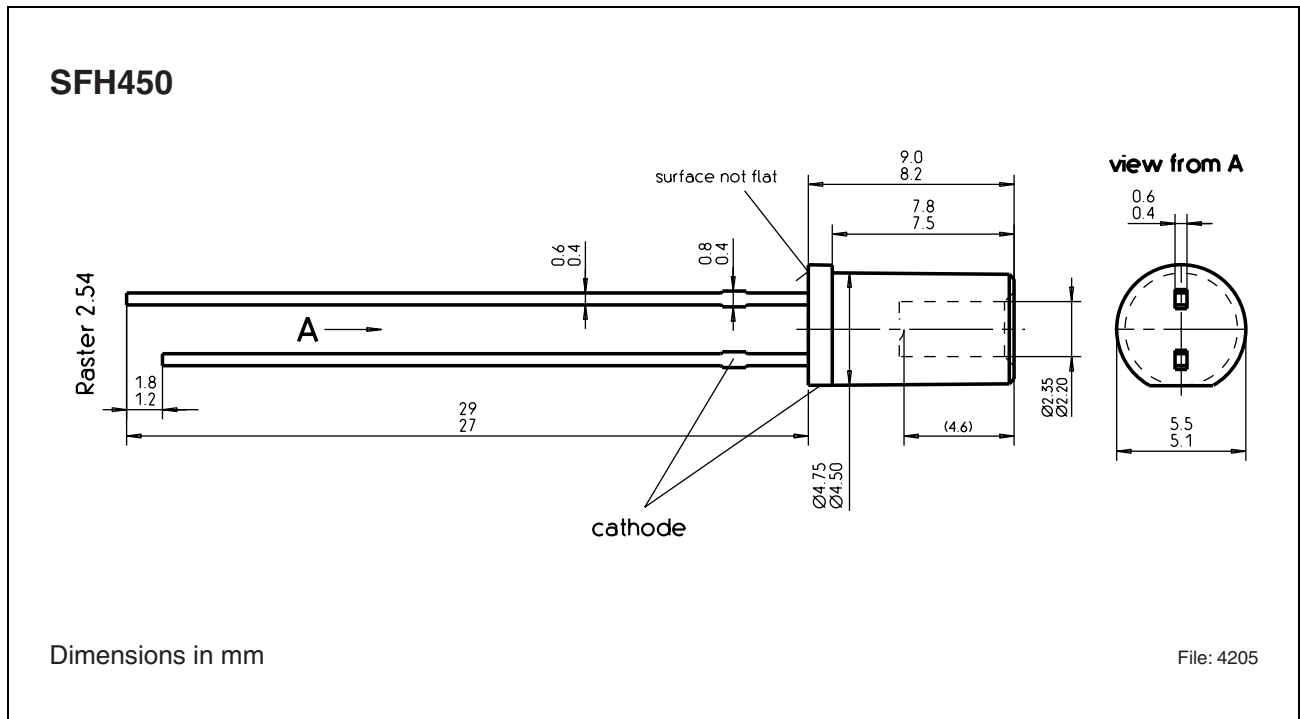


Figure 1

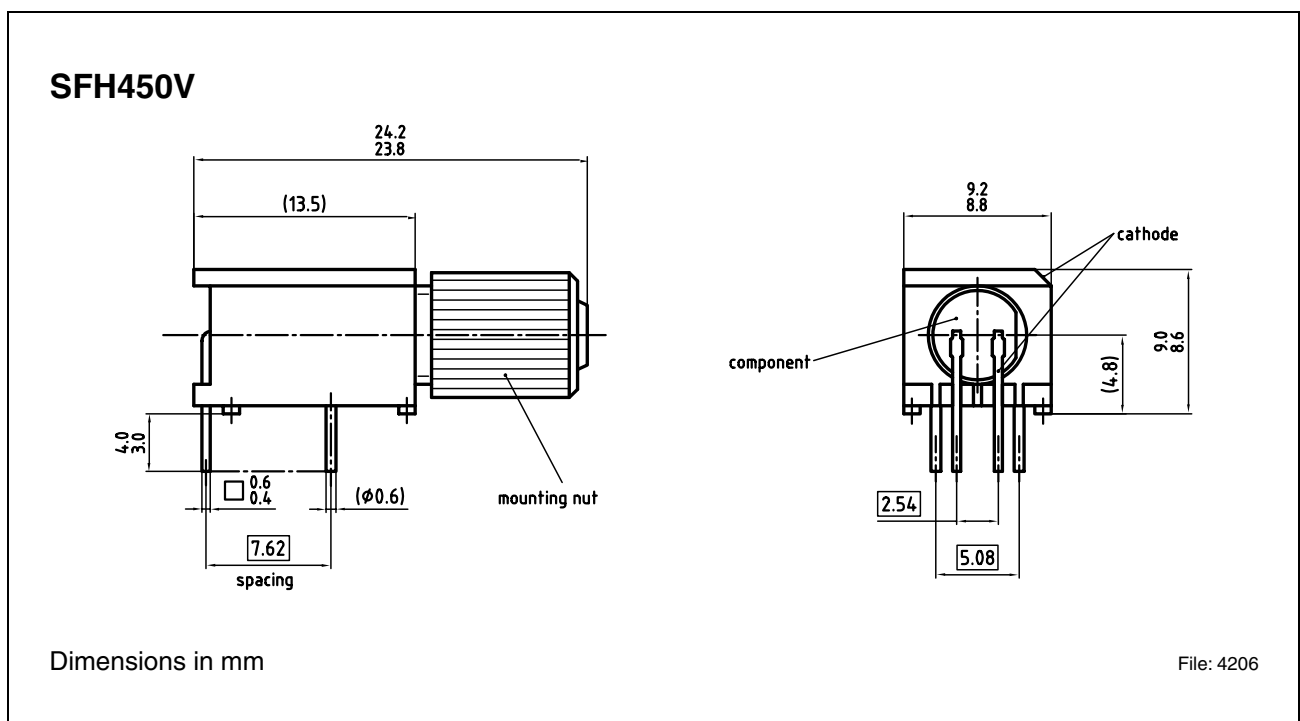


Figure 2

SFH450
SFH450V

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

DS1

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81669 München, Germany**

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