

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

**SFH756  
SFH756V**

**Features**

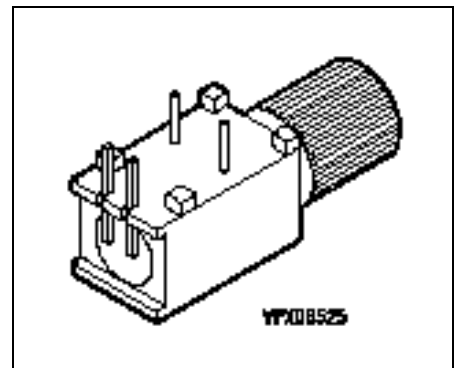
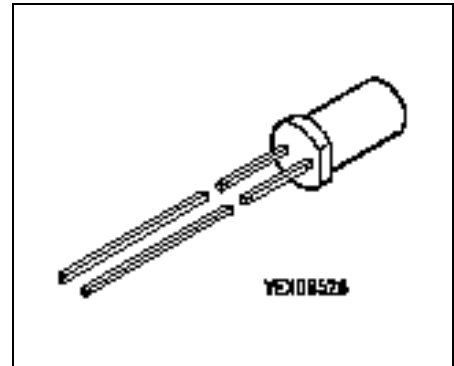
- 2.2 mm Aperture holds Standard 1000 Micron Plastic Fiber
- No Fiber Stripping Required
- Good Linearity (Forward current > 2 mA)
- Molded Microlens for Efficient Coupling

**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
SFH756	Q62702-P1716
SFH756V	Q62702-P1715

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

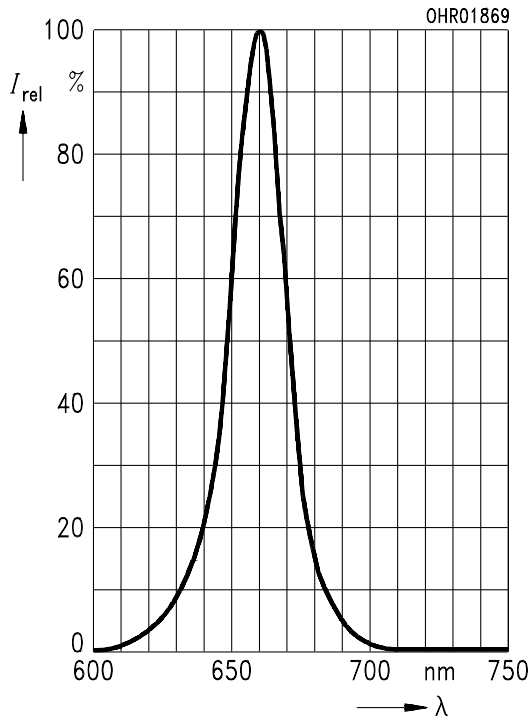
Parameter	Symbol	Limit Values		Unit
		min.	max.	
Operating Temperature Range	$T_{OP}$	-40	+85	°C
Storage Temperature Range	$T_{STG}$	-40	+100	°C
Junction Temperature	$T_J$		100	°C
Soldering Temperature (2 mm from case bottom, $t \leq 5$ s)	$T_S$		260	°C
Reverse Voltage	$V_R$		3	V
Forward Current	$I_F$		50	mA
Surge Current ( $t \leq 10 \mu\text{s}$ , $D = 0$ )	$I_{FSM}$		1	A
Power Dissipation	$P_{TOT}$		120	mW
Thermal Resistance, Junction/Air	$R_{thJA}$		450	K/W

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

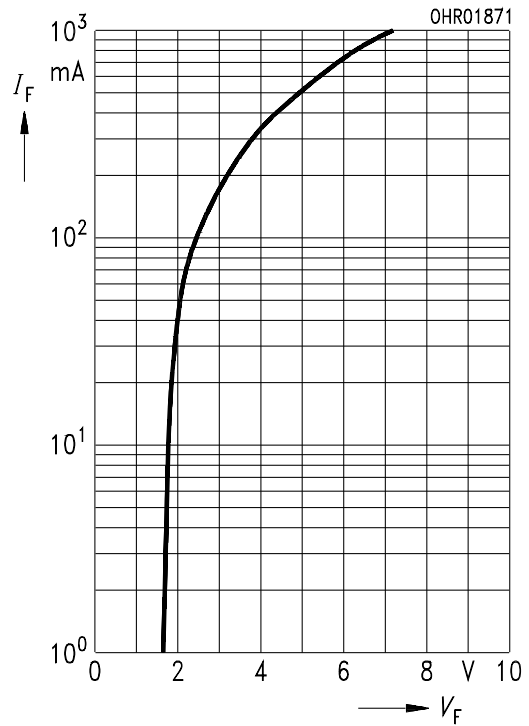
Parameter	Symbol	Value	Unit
Peak Wavelength	$\lambda_{\text{Peak}}$	660	nm
Spectral Bandwidth	$\Delta\lambda$	25	nm
Switching Times ( $R_G = 50 \Omega$ ), $I_{F(\text{LOW})} = 0.1 \text{ mA}$ , $I_{F(\text{HIGH})} = 50 \text{ mA}$ ) 10% to 90% 90% to 10%	$t_R$ $t_F$	0.1 0.1	$\mu\text{s}$
Capacitance ( $f = 1 \text{ MHz}$ , $V_R = 0 \text{ V}$ )	$C_O$	30	pF
Forward Voltage ( $I_F = 50 \text{ mA}$ )	$V_F$	2.1 ( $\leq 2.8$ )	V
Output Power Coupled Into Plastic Fiber ( $I_F = 10 \text{ mA}$ ) <sup>1)</sup>	$\Phi_{\text{IN}}$	200 ( $\geq 100$ )	$\mu\text{W}$
Temperature Coefficient $\Phi_{\text{IN}}$	$TC_\Phi$	-0.4	%/K
Temperature Coefficient $V_F$	$TC_V$	-3	mV/K
Temperature Coefficient $\lambda_{\text{Peak}}$	$TC_\lambda$	0.16	nm/K

<sup>1)</sup> 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.

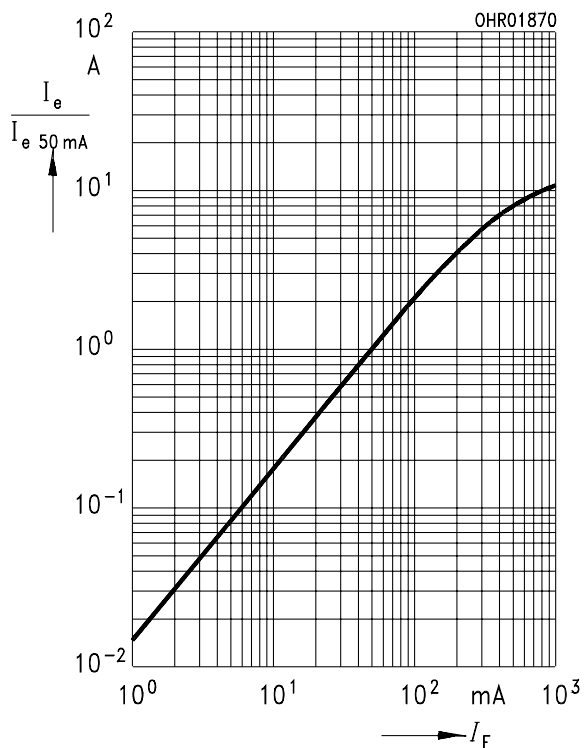
**Relative Spectral Emission**  $I_{rel} = f(\lambda)$



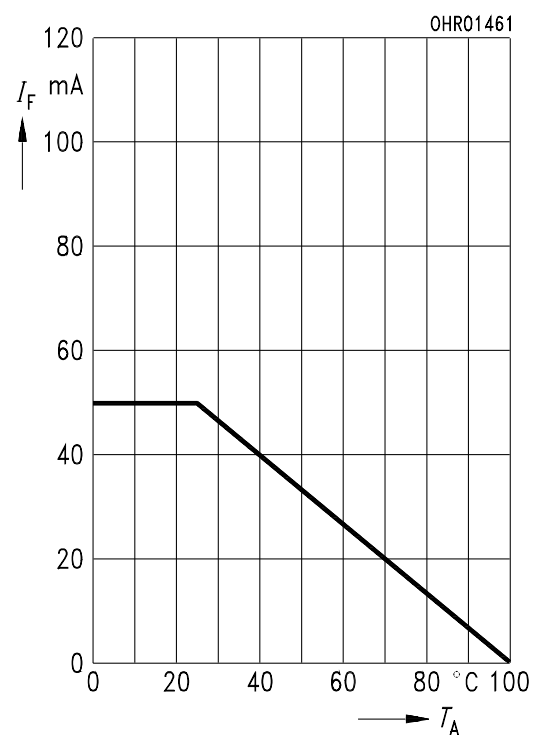
**Forward Current**  $I_F = f(V_F)$   
single pulse, duration = 20  $\mu$ s



**Relative Output Power**  $I_e/I_{e(50\text{ mA})} = f(I_F)$   
single pulse, duration = 20  $\mu$ s

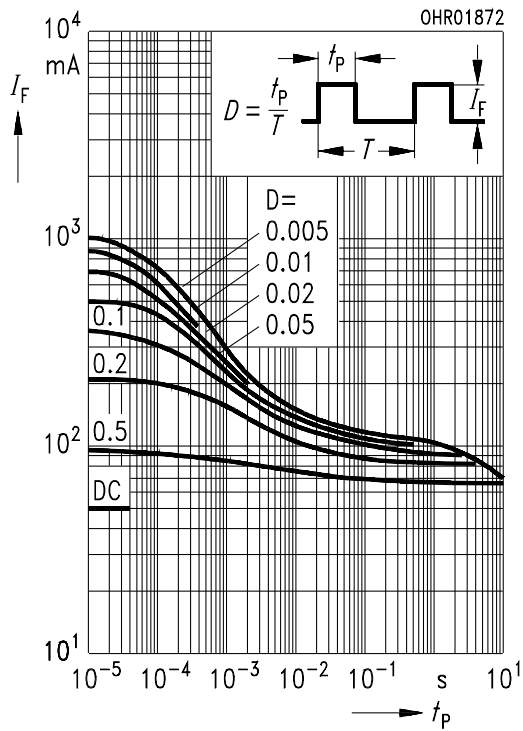


**Maximum Permissible Forward Current**  
 $I_F = f(T_A)$ ,  $R_{thJA} = 450$  K/W



**Permissible Pulse Handling Capability**

$I_F = f(t_p)$ , duty cycle  $D =$  parameter,  
 $T_A = 25^\circ\text{C}$



Package Outlines

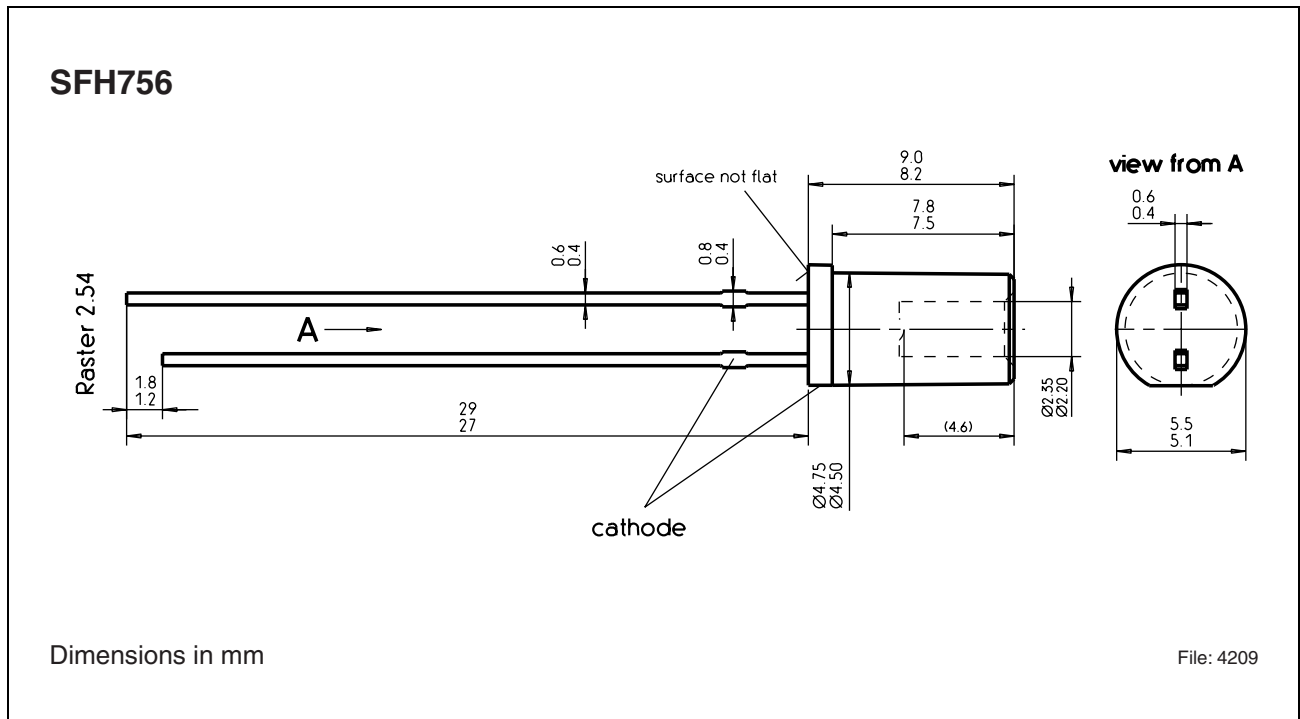


Figure 1

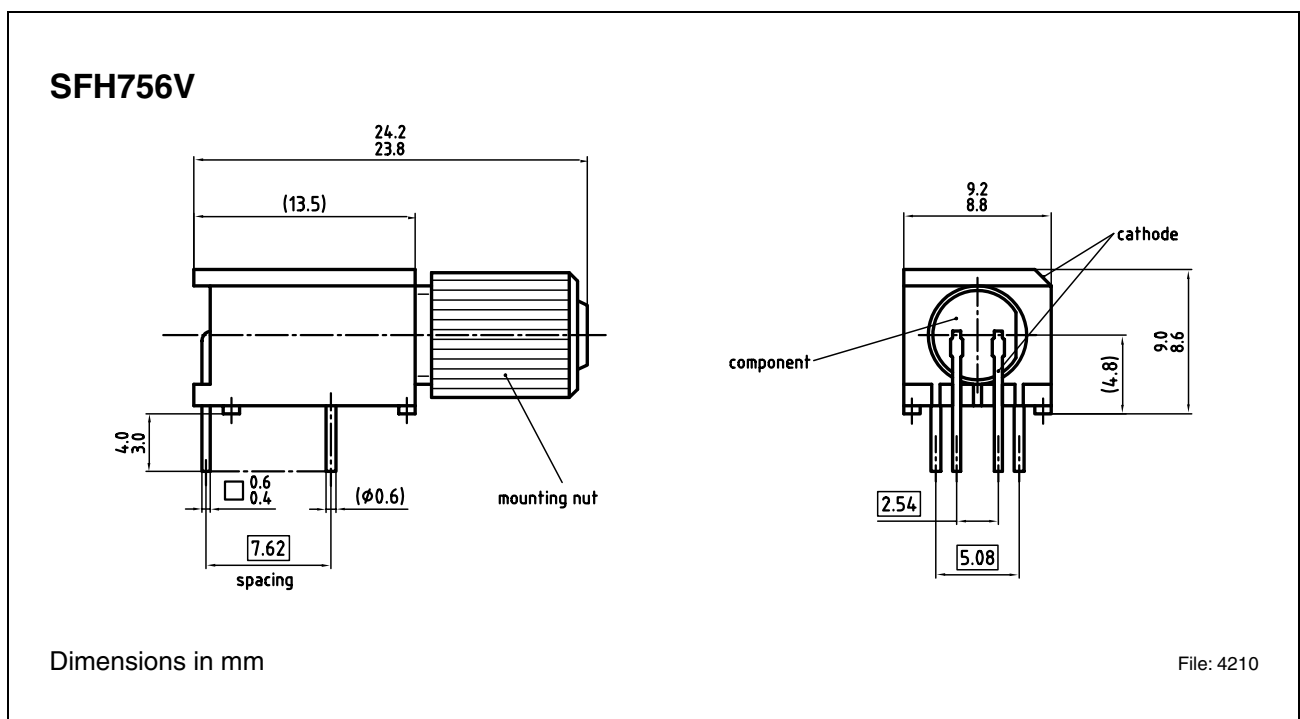


Figure 2

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**SFH756**  
**SFH756V**

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

DS1

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Previous Version:           2002-03-14

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