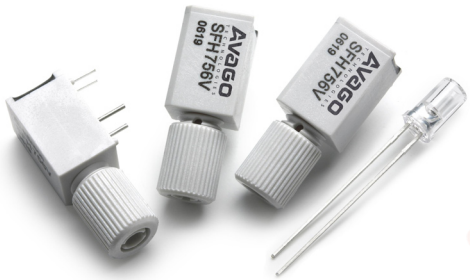
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SFH756 / SFH756V

Plastic Fiber Optic Transmitter Diode
Plastic Connector Housing

Data Sheet



Description

The SFH756 is a low-cost transmitter for simple optical data transmission with polymer optical fiber. The 650nm LED allows for speeds up to 10MBd.

The transparent plastic package has an aperture where the the 2.2mm fiber-end can be inserted and fixed with glue. This easy coupling method is extremely cost-effective.

The V-housing allows easy coupling of unconnectorized 2.2mm plastic optical fiber by means of an axial locking screw.

Ordering Information

Type	Ordering Code
SFH756	SP000063802
SFH756V	SP000063814

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

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Technical Data

Absolute Maximum Ratings

		Limit Values		
Parameter	**Symbol**	**min.**	**max.**	**Unit**
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 ≤ 5 s)	TS		260	°C
Reverse Voltage	VR		3	V
Forward Current	I_F		50	mA
Surge Current (t ≤ 10 µs, 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°C)

Parameter	**Symbol**	**Value**	**Unit**
Peak Wavelength	λ_{Peak}	660	nm
Spectral Bandwidth	Δ_λ	25	nm
Switching Times (R_G = 50 Ω, $I_{F(LOW)}$ = 0.1mA, $I_{F(HIGH)}$ = 50 mA)			µs
10% to 90%	t_R	0.1	
90% to 10%	t_F	0.1	
Capacitance (f = 1 MHz, V_R = 0 V)	C_0	30	pF
Forward Voltage (I_F = 50 mA)	V_F	2.1 (≤ 2.8)	V
Output Power Coupled Into Plastic Fiber (I_F = 10 mA) [1]	Φ_{IN}	200 (≥ 100)	µW
Temperature Coefficient Φ_{IN}	$T_{C\Phi}$	−0.4	%/K
Temperature Coefficient V_F	T_{CV}	−3	mV/K
Temperature Coefficient λ_{Peak}	TC_λ	0.16	nm/K

Notes:
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 used for calculating the power budget for a fiber optic system with a long fiber because the numerical aperture of plastics 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.

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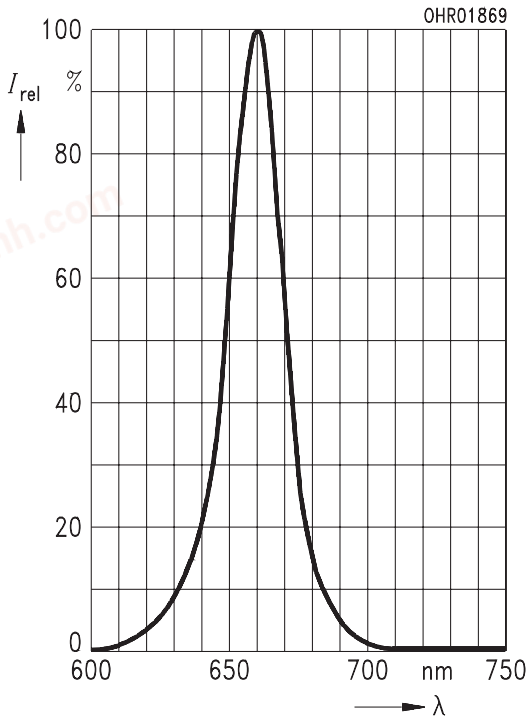


Figure 1. Relative Spectral Emission $I_{rel} = f(\lambda)$

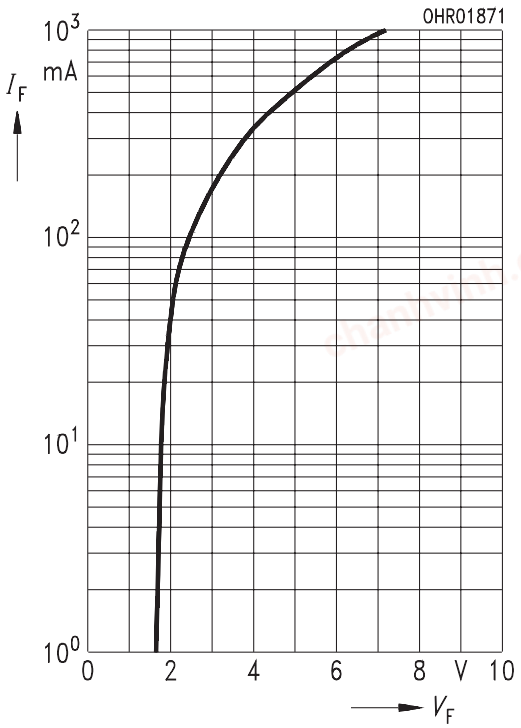


Figure 2. Forward Current $I_F = f(V_F)$ single pulse, duration = 20 µs

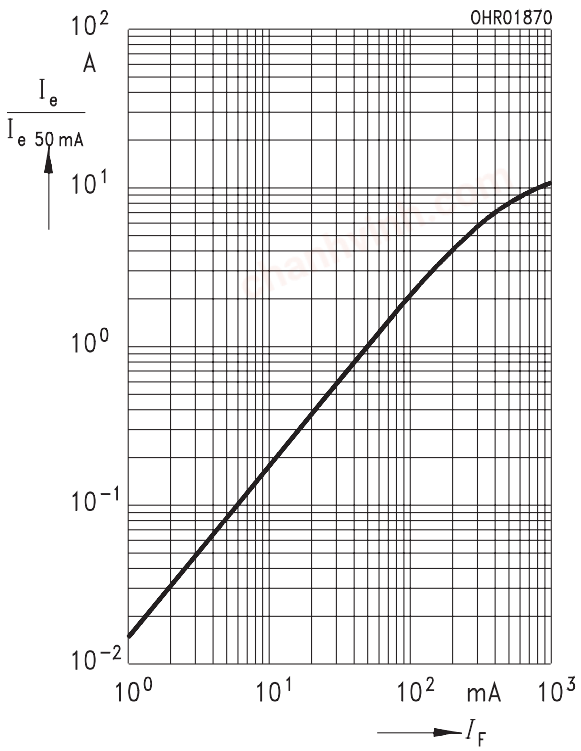


Figure 3. Relative Output Power, $I_e/I_{e(50\ mA)} = f(I_F)$ single pulse, duration = 20 µs

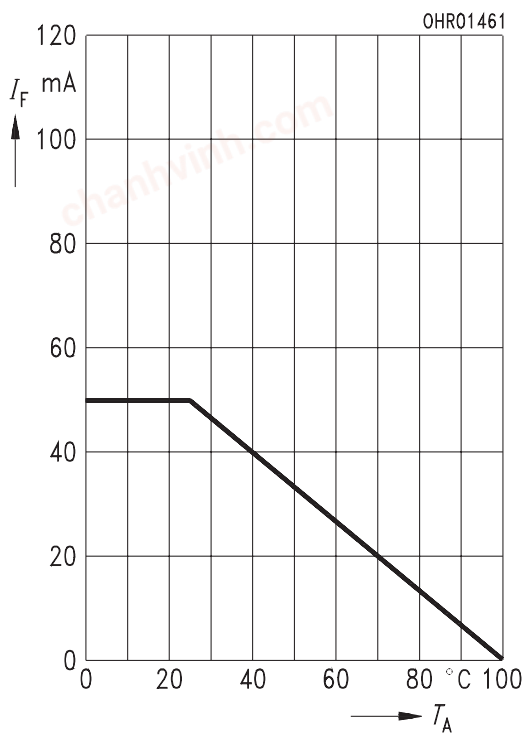


Figure 4. Maximum Permissible Forward Current, $I_F = f(T_A)$, $R_{thJA} = 450$ K/W

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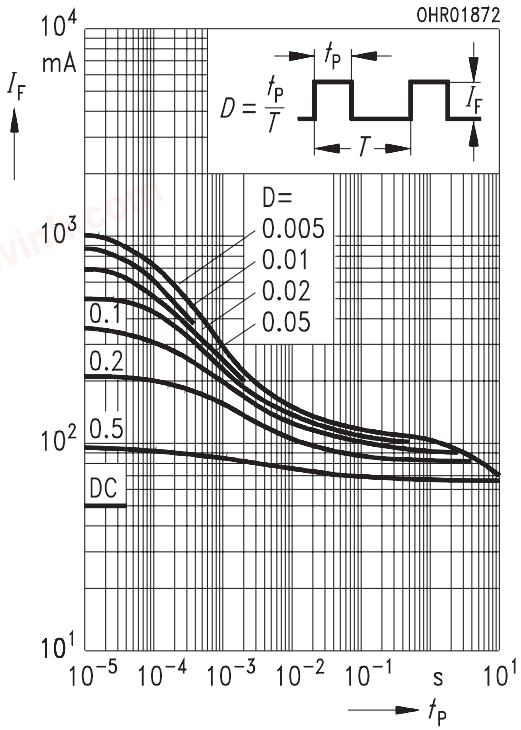
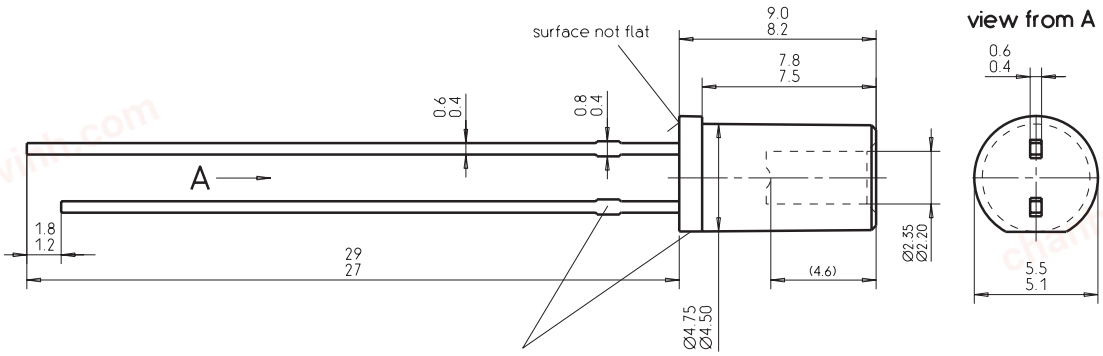


Figure 5. Permissible Pulse Handling Capability, $I_F = f(t_P)$, duty cycle D = parameter, $T_A = 25°C$

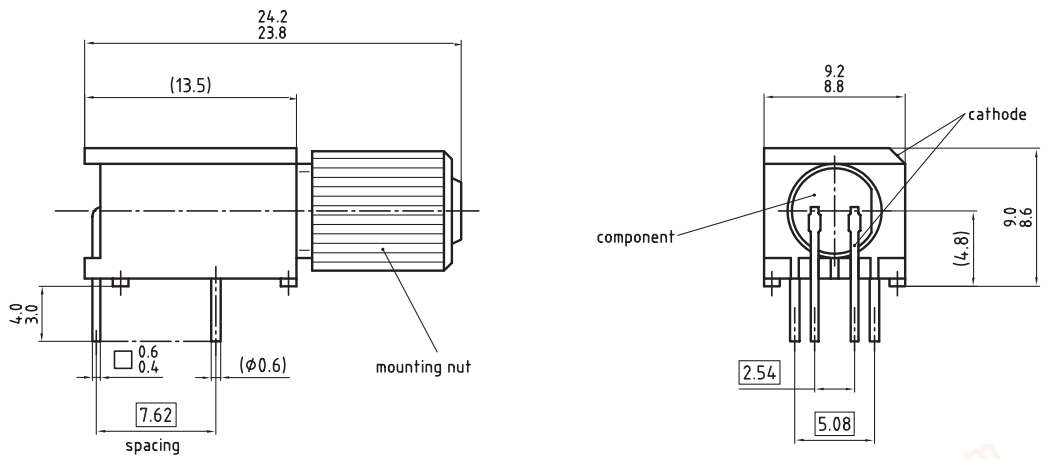
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Package Outlines



Dimensions in mm

Figure 6. SFH756



Dimensions in mm

Figure 7. SFH756V

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AV01-0715EN - June 30, 2007