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 costeffective.

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

Ordering Information

Туре	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

Technical Data

Absolute Maximum Ratings

Parameter		Limit Values		
	Symbol	min.	max.	Unit
Operating Temperature Range	T _{OP}	-40	+85	°C
Storage Temperature Range	T _{STG}	-40	+100	°C
Junction Temperature	Тј		100	°C
Soldering Temperature (2?mm from case bottom, $t \le 5$ s)	TS		260	°C
Reverse Voltage	VR		3	V
Forward Current	I _F		50	mA
Surge Current (t \leq 10 μ s, D = 0)	I _{FSM}		1	Α
Power Dissipation	P _{TOT}		120	mW
Thermal Resistance, Junction/Air	R _{thJA}		450	K/W

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

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) 10% to 90% 90% to 10%	t _R t _F	0.1 0.1	μs
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 ($I_F = 10 \text{ mA}$) [1]	Φ_{IN}	200 (≥ 100)	μW
Temperature Coefficient $\Phi_{ extsf{IN}}$	Тсф	-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.

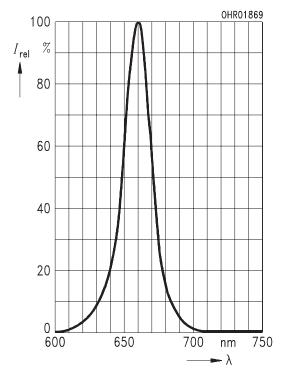


Figure 1. Relative Spectral Emission $I_{rel} = f(\lambda)$

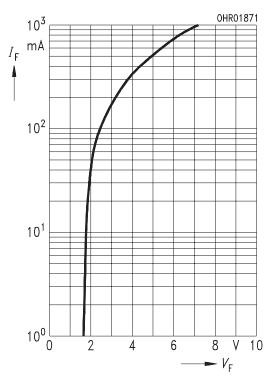


Figure 2. Forward Current $I_F = f(V_F)$ single pulse, duration = 20 μs

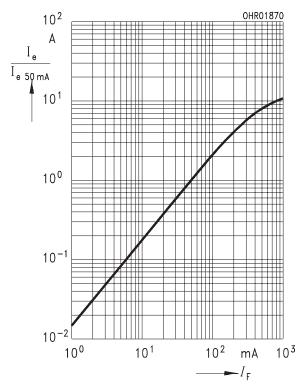


Figure 3. Relative Output Power, $l_e/l_{e(50~m\text{\AA})} = f(l_F)$ single pulse, duration = 20 μs

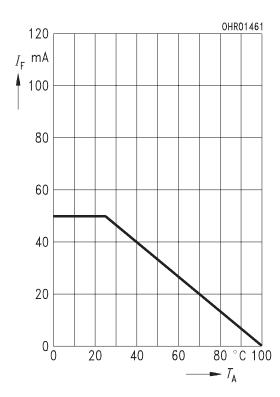


Figure 4. Maximum Permissible Forward Current, $I_F = f(T_A)$, $R_{thJA} = 450 \text{ K/W}$

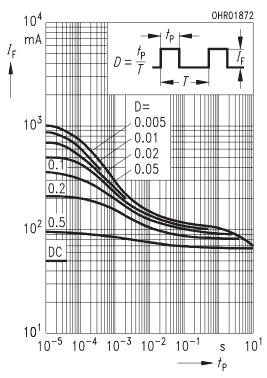


Figure 5. Permissible Pulse Handling Capability, $I_F=f(t_P), \\$ duty cycle D= parameter, $T_A=25^{\circ}C$

Package Outlines

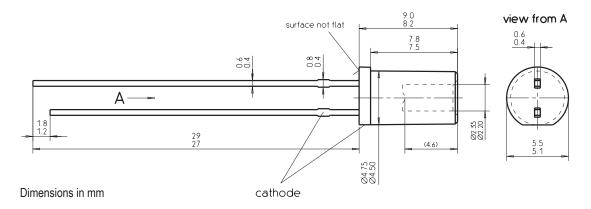
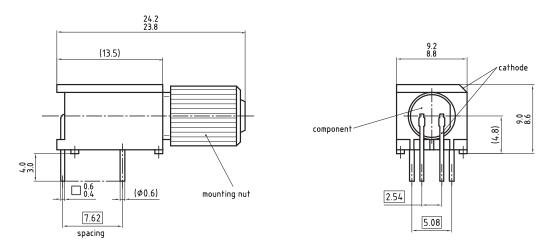


Figure 6. SFH756



Dimensions in mm

Figure 7. SFH756V

Disclaimer

The information herein is given to describe certain components and shall not be considered as a guarantee of characteristics.

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