

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

**SFH756
SFH756V**

Features

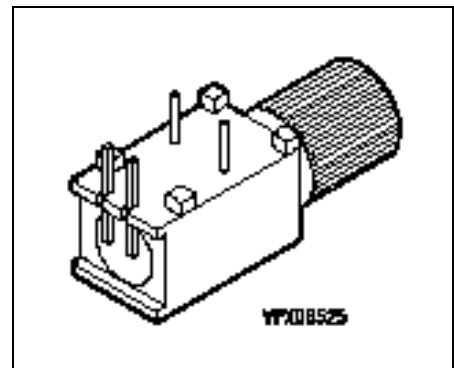
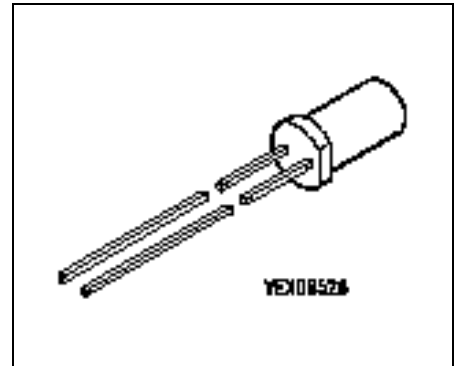
- 2.2 mm Aperture holds Standard 1000 Micron Plastic Fiber
- No Fiber Stripping Required
- Good Linearity (Forward current > 2 mA)
- Molded Microlens for Efficient Coupling

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

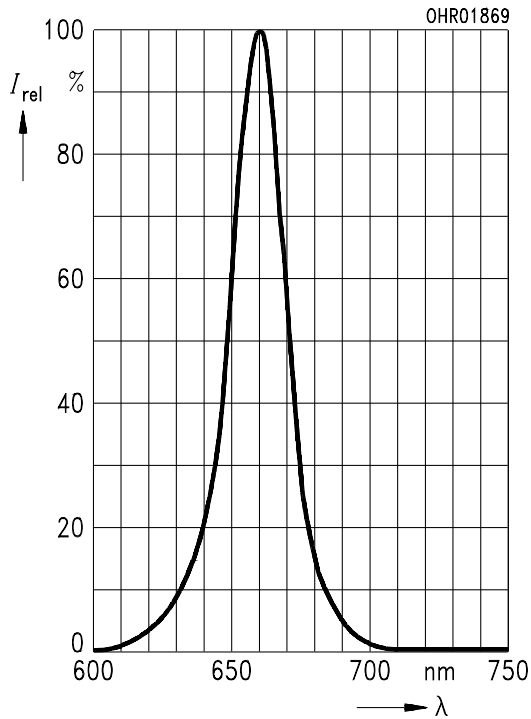
| Parameter | Symbol | Limit Values | | Unit |
|--|------------|--------------|------|------|
| | | min. | max. | |
| Operating Temperature Range | T_{OP} | -40 | +85 | °C |
| Storage Temperature Range | T_{STG} | -40 | +100 | °C |
| Junction Temperature | T_J | | 100 | °C |
| Soldering Temperature (2 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 ($T_A = 25^\circ\text{C}$)

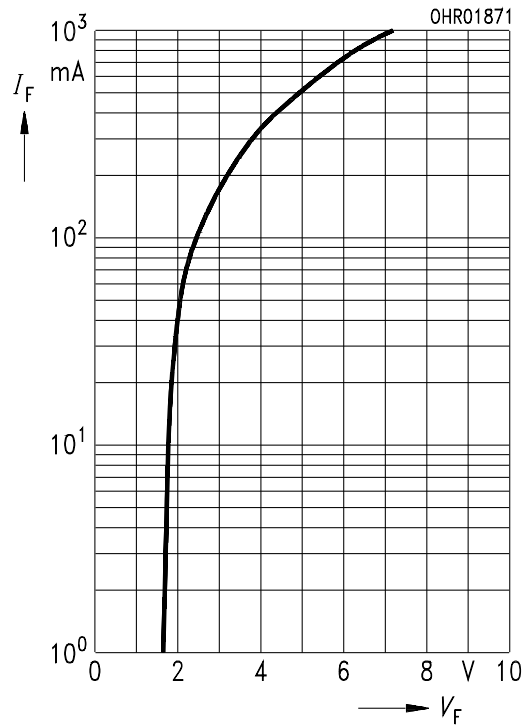
| Parameter | Symbol | Value | Unit |
|---|-------------------------|-----------------------|---------------|
| Peak Wavelength | λ_{Peak} | 660 | nm |
| Spectral Bandwidth | $\Delta\lambda$ | 25 | nm |
| Switching Times ($R_G = 50 \Omega$), $I_{F(\text{LOW})} = 0.1 \text{ mA}$, $I_{F(\text{HIGH})} = 50 \text{ mA}$) 10% to 90% 90% to 10% | t_R t_F | 0.1 0.1 | μs |
| 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 (≤ 2.8) | V |
| Output Power Coupled Into Plastic Fiber ($I_F = 10 \text{ mA}$) ¹⁾ | Φ_{IN} | 200 (≥ 100) | μW |
| Temperature Coefficient Φ_{IN} | TC_Φ | -0.4 | %/K |
| Temperature Coefficient V_F | TC_V | -3 | mV/K |
| Temperature Coefficient λ_{Peak} | TC_λ | 0.16 | 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.

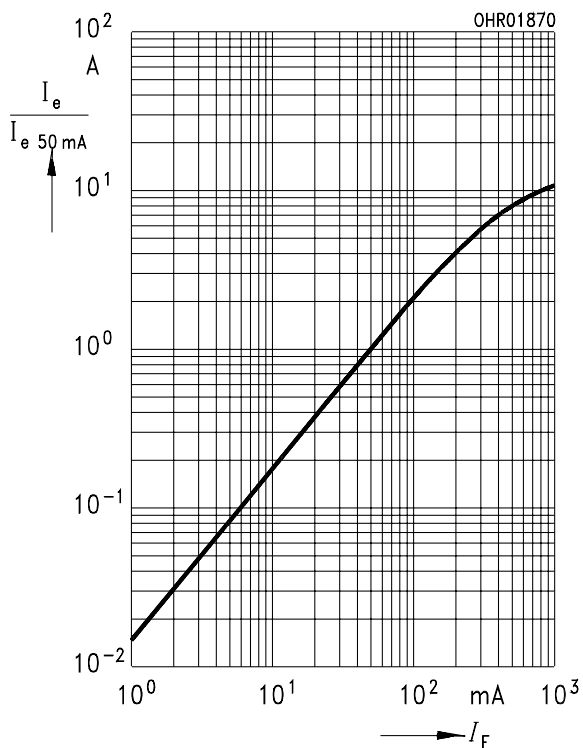
Relative Spectral Emission $I_{rel} = f(\lambda)$



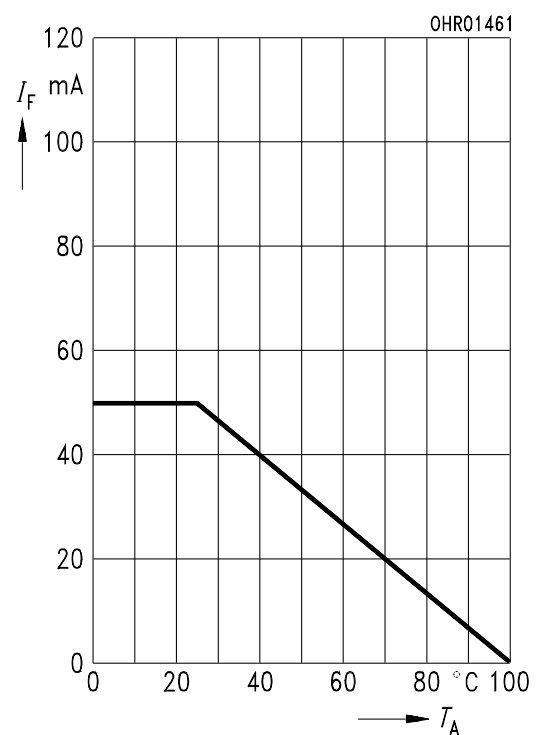
Forward Current $I_F = f(V_F)$
single pulse, duration = 20 μ s



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

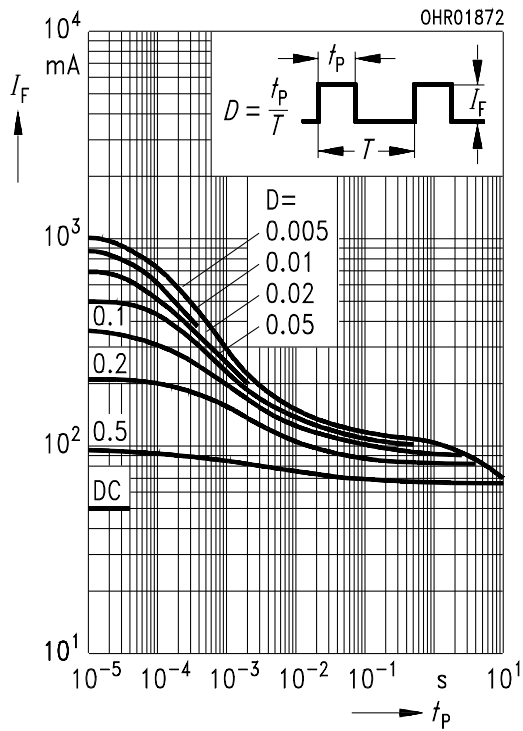


Maximum Permissible Forward Current $I_F = f(T_A), R_{thJA} = 450\text{ K/W}$



Permissible Pulse Handling Capability

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



Package Outlines

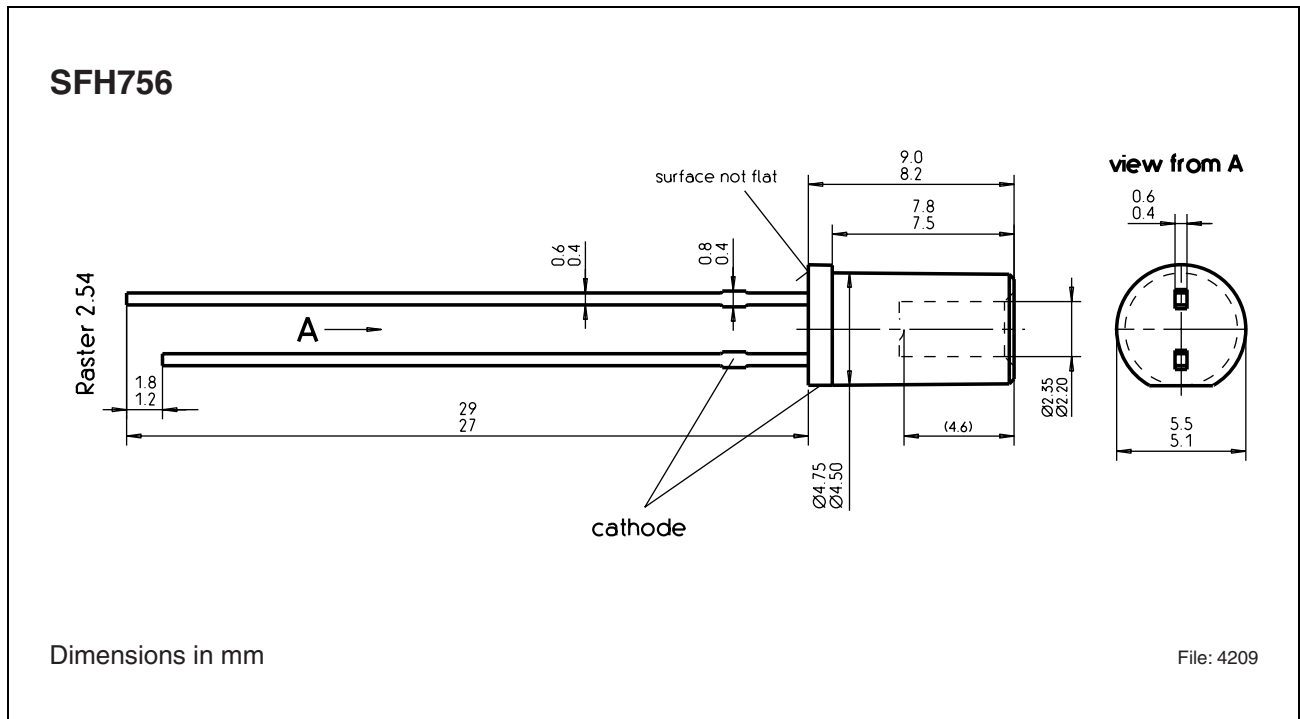


Figure 1

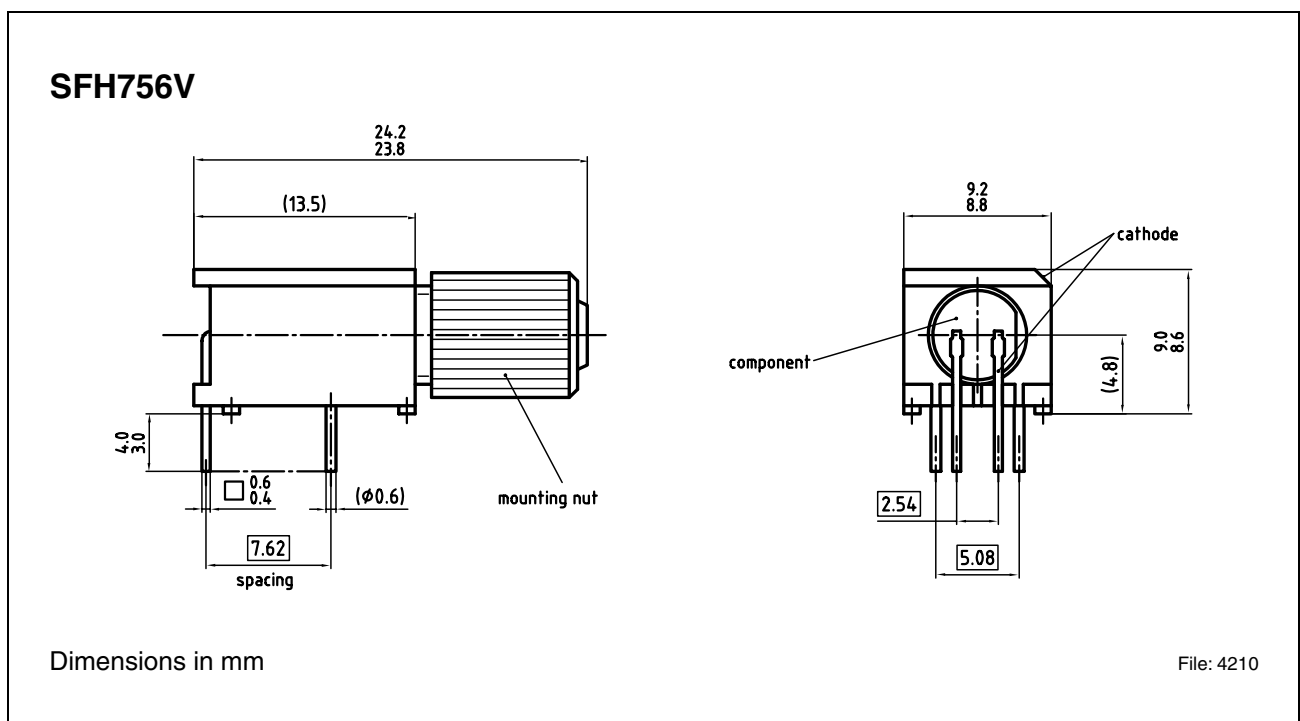


Figure 2

SFH756
SFH756V

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

DS1

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