

## Plastic Fiber Optic Transmitter Diode Plastic Connector Housing

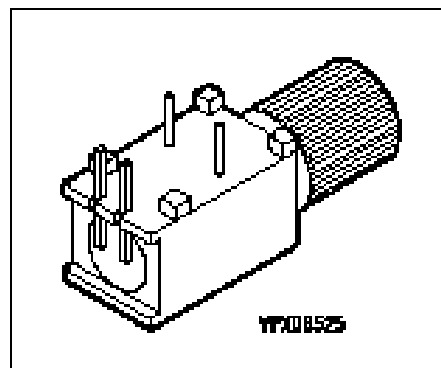
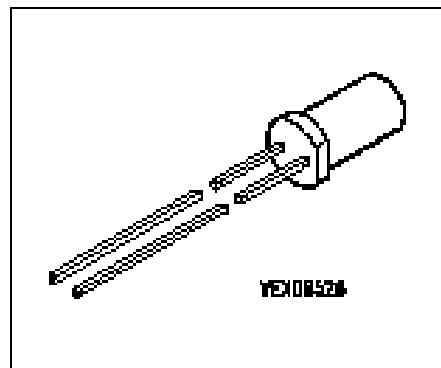
**SFH757**  
**SFH757V**

### Features

- High speed transmitter for about 50 Mbit/s up to 100 Mbit/s (with peaking circuit)
- 2.2 mm aperture holds standard 1000 micron plastic fiber
- No fiber stripping required
- 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 |
|---------|---------------|
| SFH757  | Q62702-P3526  |
| SFH757V | Q62702-P3527  |

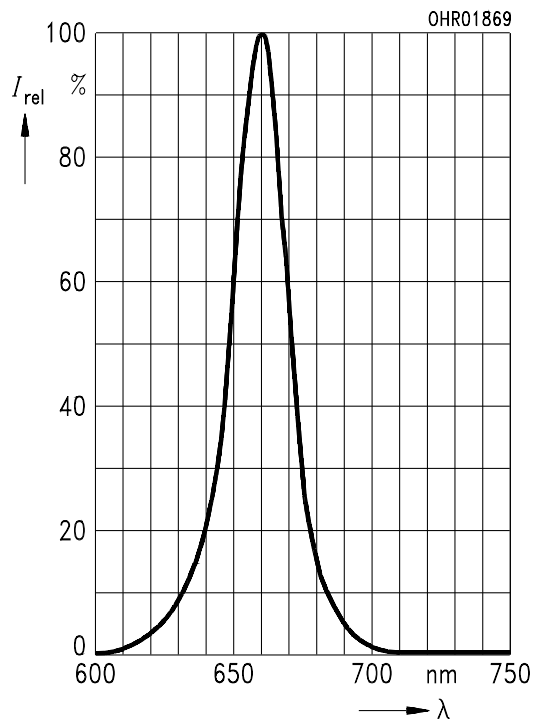
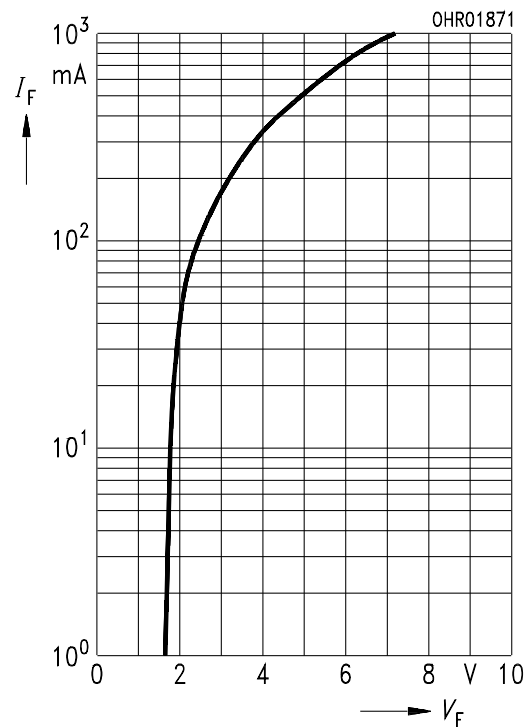
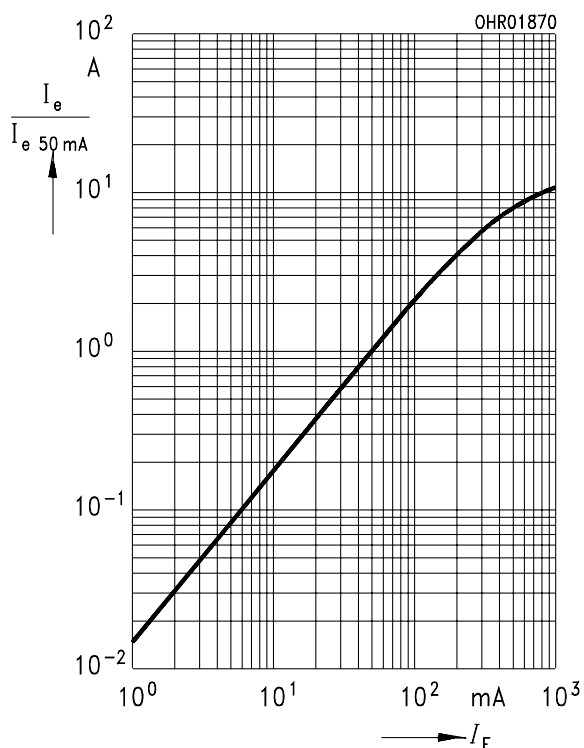
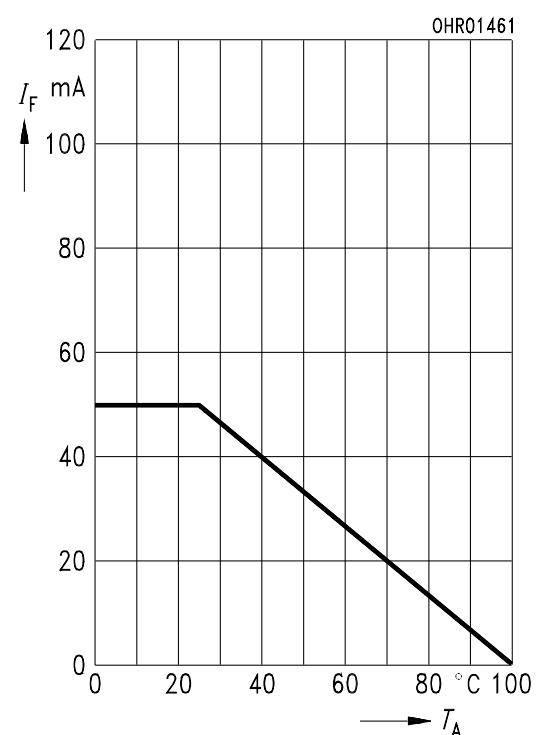
**Technical Data**
**Absolute Maximum Ratings**

| Parameter                                                      | Symbol     | Limit Values |      | Unit |
|----------------------------------------------------------------|------------|--------------|------|------|
|                                                                |            | min.         | max. |      |
| Operating Temperature Range                                    | $T_{OP}$   | −40          | +80  | °C   |
| Storage Temperature Range                                      | $T_{STG}$  | −40          | +100 | °C   |
| Junction Temperature                                           | $T_J$      |              | 100  | °C   |
| Soldering Temperature<br>(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** ( $T_A = 25^\circ\text{C}$ )

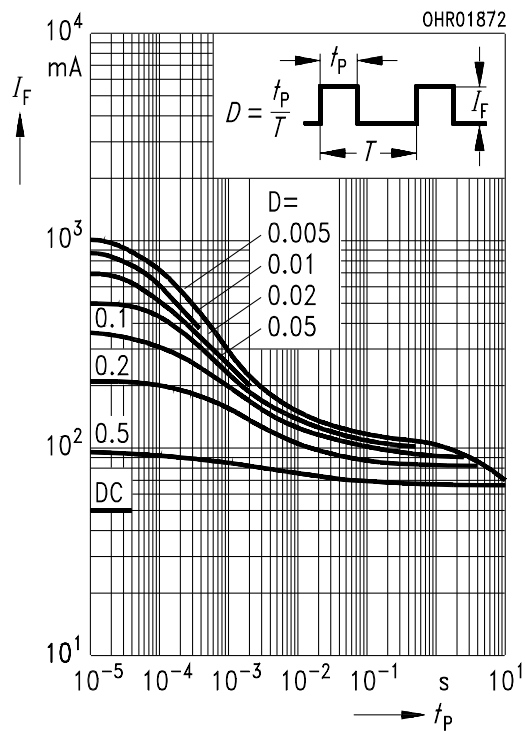
| Parameter                                                                          | Symbol                  | Value                 | Unit          |
|------------------------------------------------------------------------------------|-------------------------|-----------------------|---------------|
| Peak Wavelength                                                                    | $\lambda_{\text{Peak}}$ | 650                   | nm            |
| Spectral Bandwidth                                                                 | $\Delta\lambda$         | 25                    | nm            |
| Switching Times ( $R_L = 50\ \Omega$ , $I_F = 50\ \text{mA}$ )                     |                         |                       |               |
| 10% ...90%                                                                         | $t_R$                   | 15 (< 17)             | ns            |
| 90% ... 10%                                                                        | $t_F$                   | 18 (< 20)             |               |
| 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<br>( $I_F = 10\ \text{mA}$ ) <sup>1)</sup> | $\Phi_{\text{IN}}$      | 150<br>( $\geq 100$ ) | $\mu\text{W}$ |
| 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 at the end of a short length of 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 decreases on the first meters. Therefore the fiber seems to have a higher attenuation over the first few meters compared with the specified value.

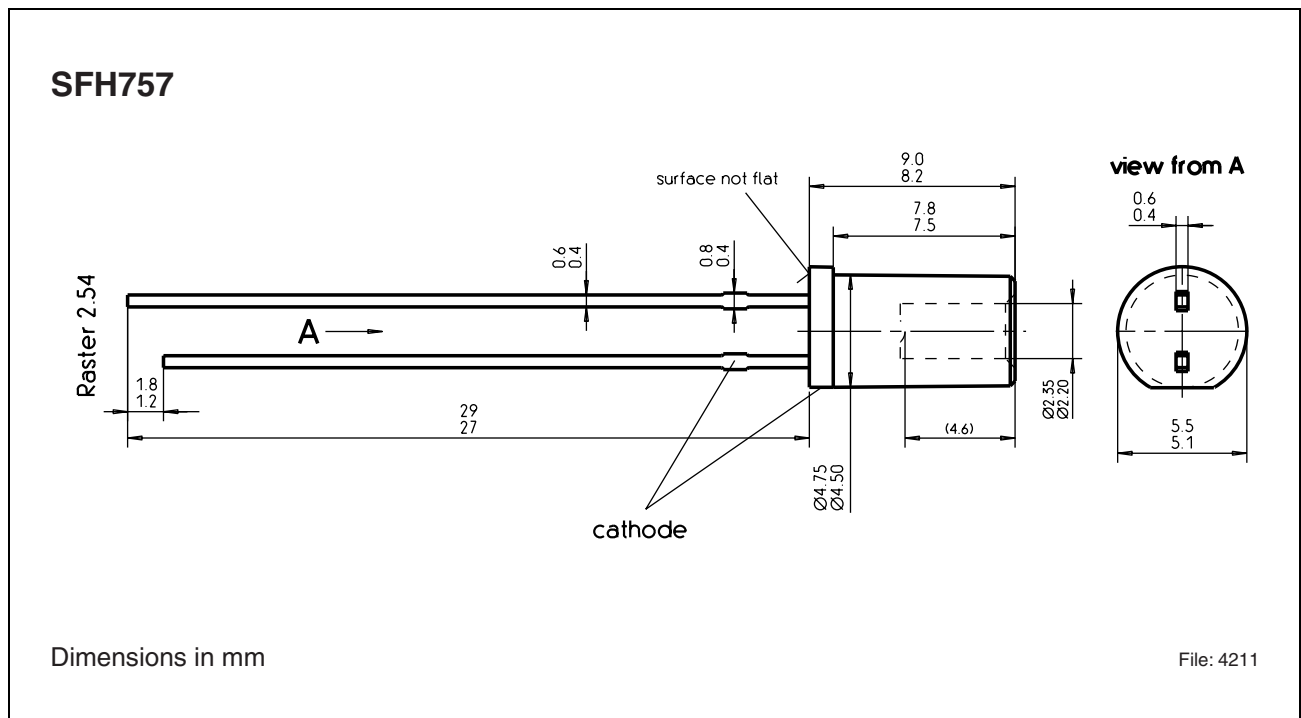
**Relative Spectral Emission  $I_{\text{rel}} = f(\lambda)$** 

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

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

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


### Permissible Pulse Handling Capability

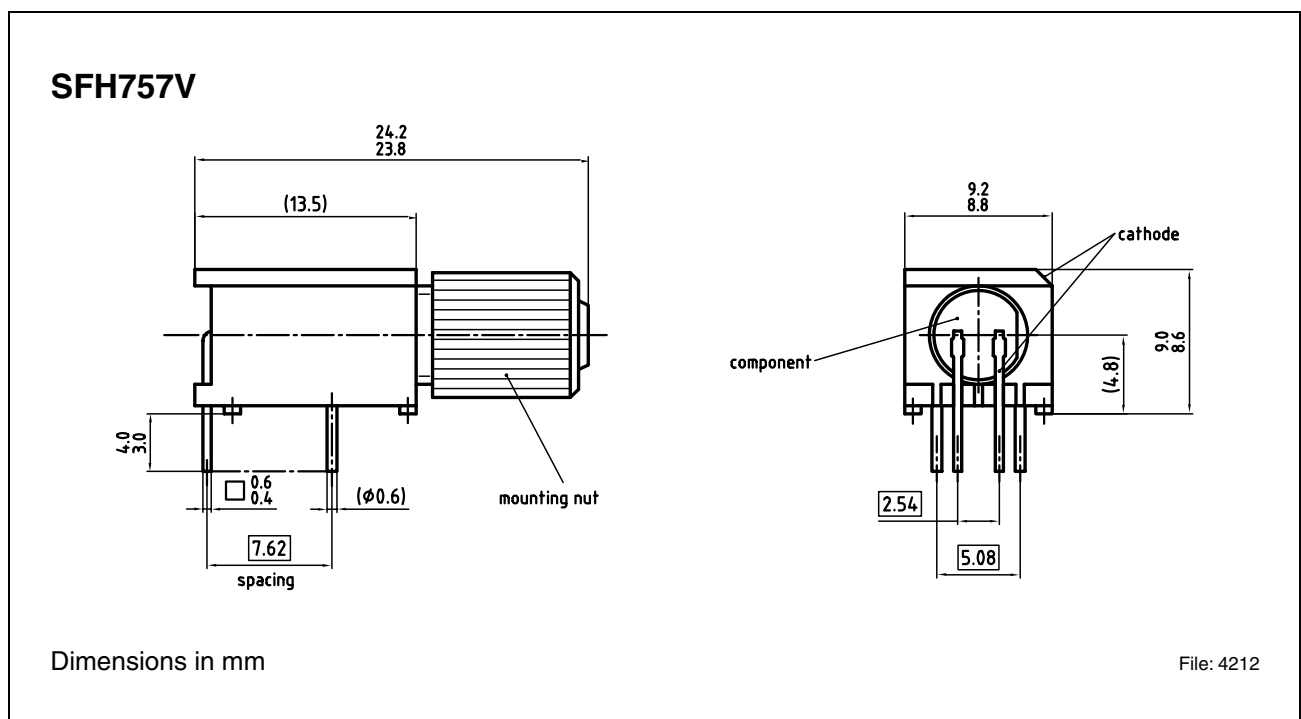
$I_F = f(t_p)$ , duty cycle  $D = \text{parameter}$ ,  
 $T_A = 25^\circ\text{C}$



**Package Outlines**



**Figure 1**



**Figure 2**

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**SFH757**  
**SFH757V**

|                          |                   |     |
|--------------------------|-------------------|-----|
| <b>Revision History:</b> | <b>2004-03-19</b> | DS1 |
| Previous Version:        | 2002-03-14        |     |

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