

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

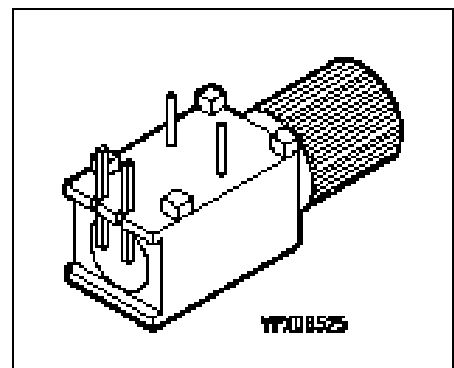
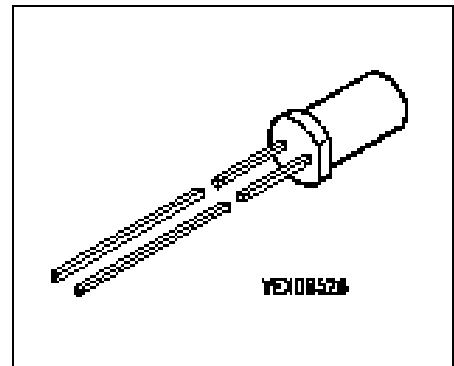
**SFH757  
SFH757V**

**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**

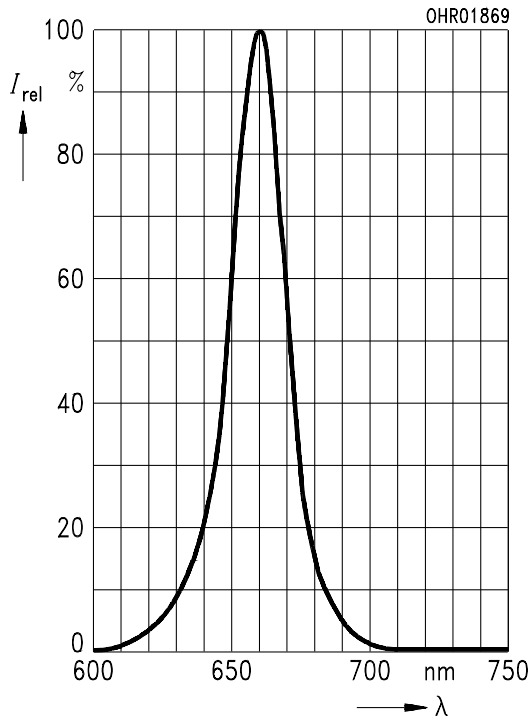
Parameter	Symbol	Limit Values		Unit
		min.	max.	
Operating Temperature Range	$T_{OP}$	-40	+80	°C
Storage Temperature Range	$T_{STG}$	-40	+100	°C
Junction Temperature	$T_J$		100	°C
Soldering Temperature (2 mm from case bottom, $t \leq 5$ s)	$T_S$		260	°C
Reverse Voltage	$V_R$		3	V
Forward Current	$I_F$		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 ( $T_A = 25^\circ\text{C}$ )**

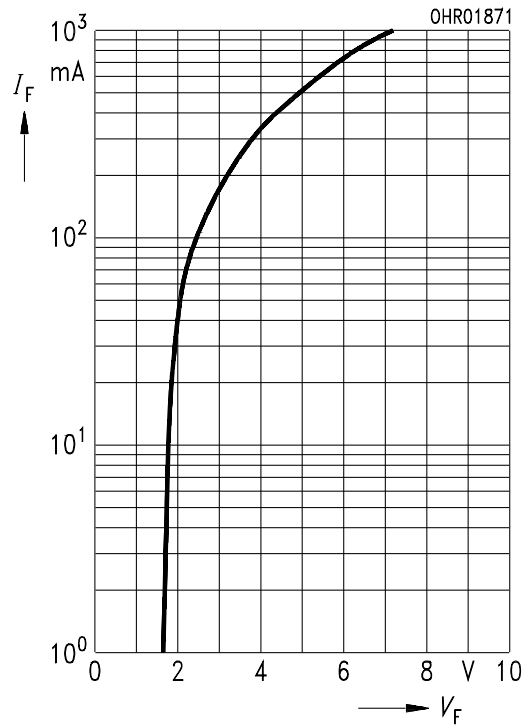
Parameter	Symbol	Value	Unit
Peak Wavelength	$\lambda_{\text{Peak}}$	650	nm
Spectral Bandwidth	$\Delta\lambda$	25	nm
Switching Times ( $R_L = 50 \Omega$ , $I_F = 50 \text{ mA}$ ) 10% ...90% 90% ... 10%	$t_R$ $t_F$	15 (< 17) 18 (< 20)	ns
Capacitance ( $f = 1 \text{ MHz}$ , $V_R = 0 \text{ V}$ )	$C_O$	30	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>	$\Phi_{\text{IN}}$	150 ( $\geq 100$ )	$\mu\text{W}$
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.

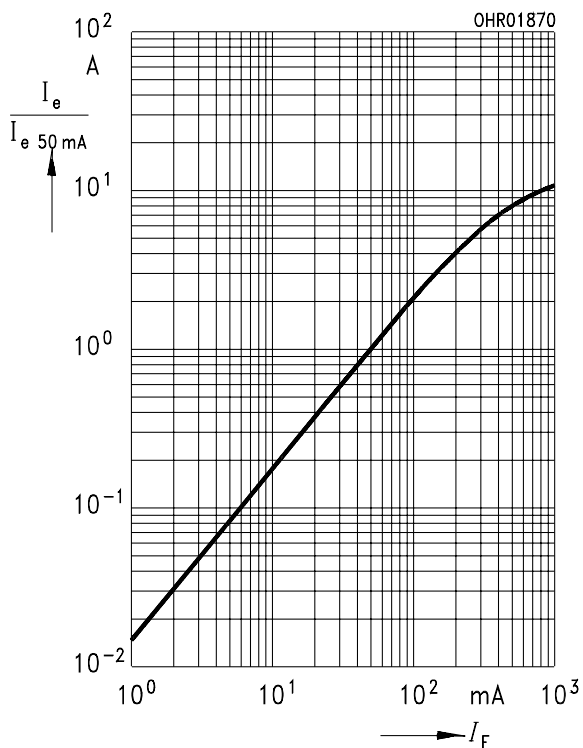
**Relative Spectral Emission**  $I_{rel} = f(\lambda)$



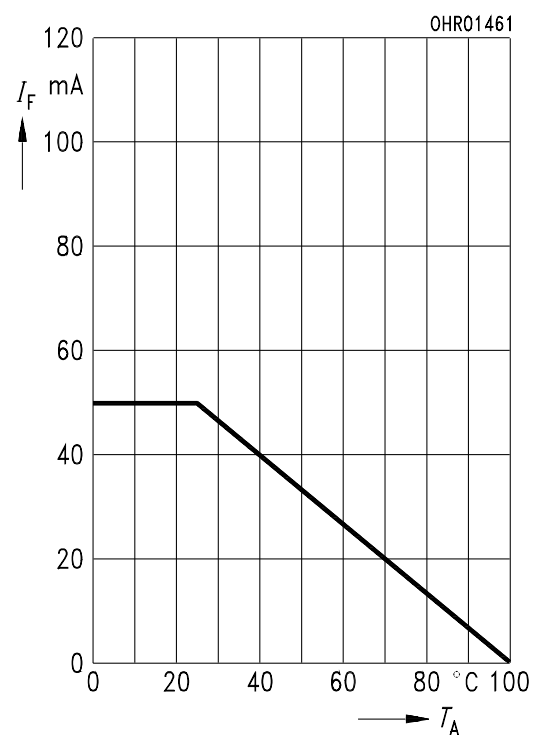
**Forward Current**  $I_F = f(V_F)$   
single pulse, duration = 20  $\mu$ s



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

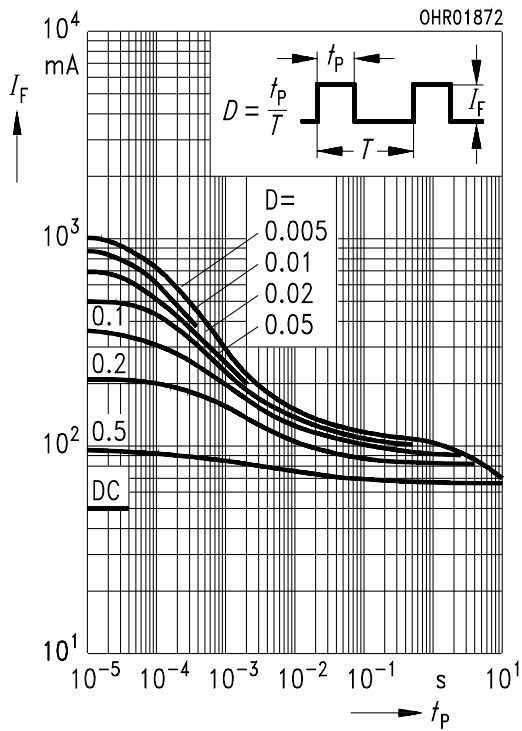


**Maximum Permissible Forward Current**  
 $I_F = f(T_A)$ ,  $R_{thJA} = 450\text{ K/W}$



**Permissible Pulse Handling Capability**

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



Package Outlines

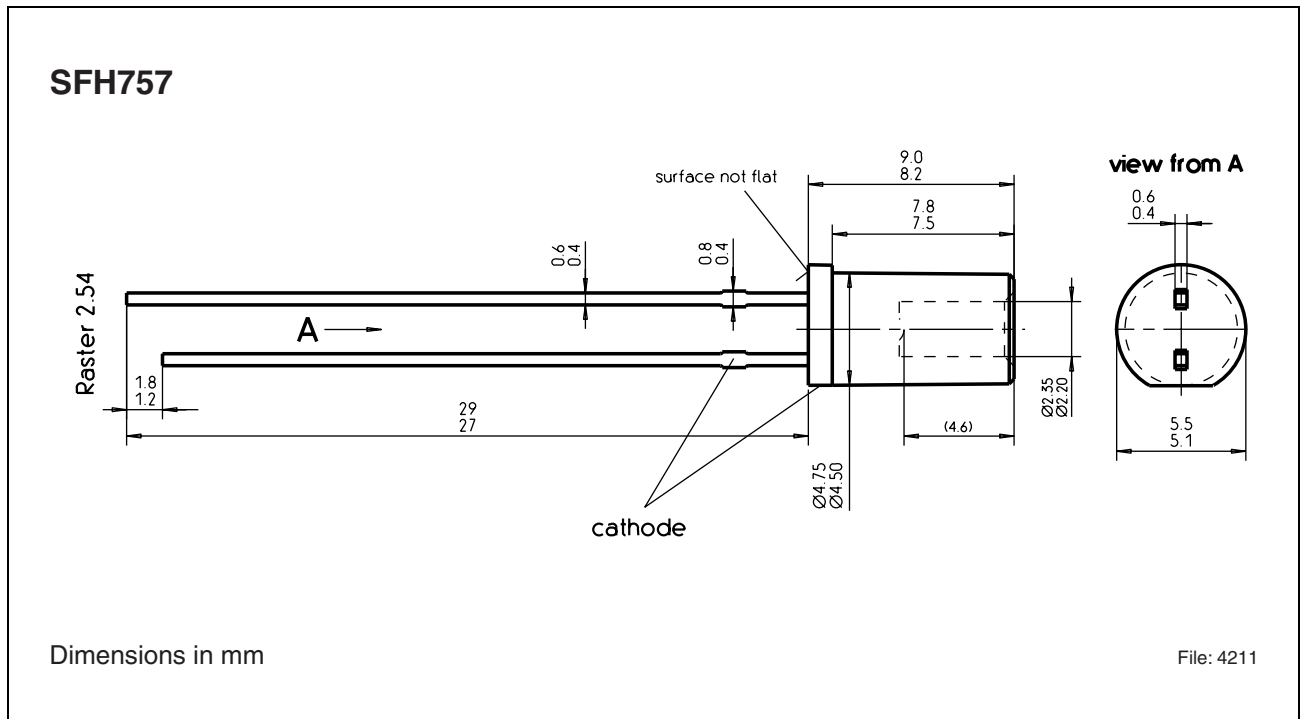


Figure 1

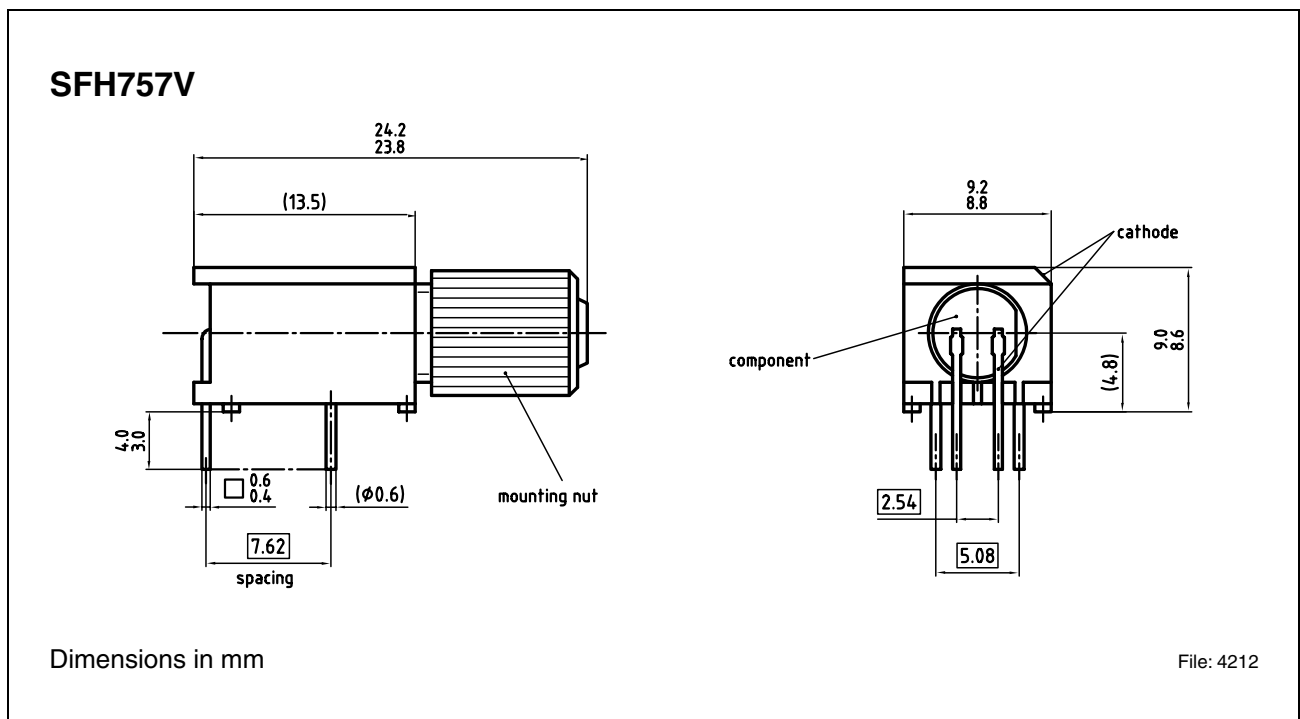


Figure 2

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**SFH757**  
**SFH757V**

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

DS1

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Previous Version:           2002-03-14

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