

## Plastic Fiber Optic Transmitter Diode Plastic Connector Housing

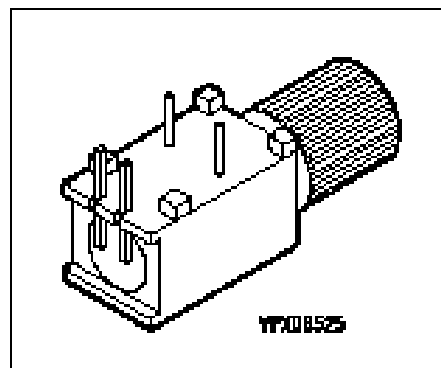
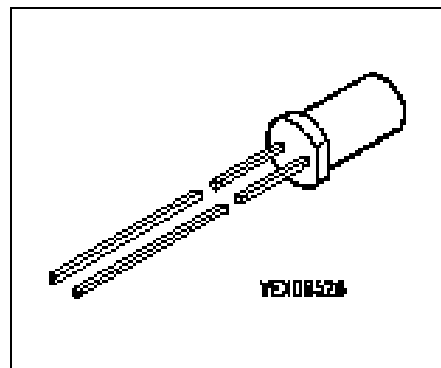
**SFH757**  
**SFH757V**

### 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**

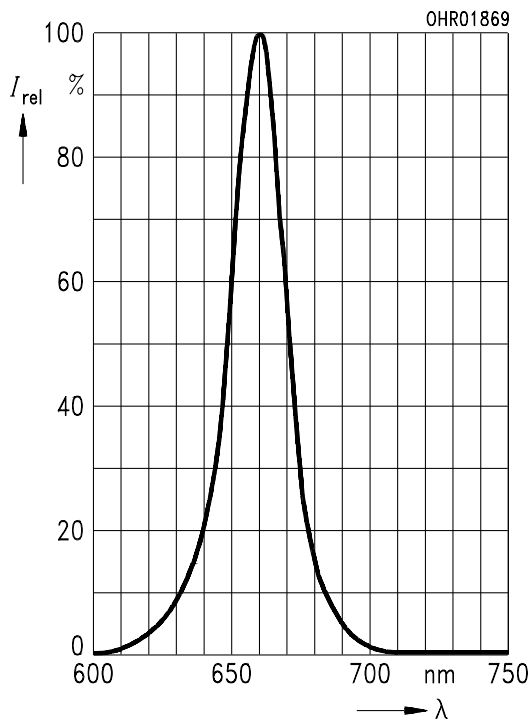
Parameter	Symbol	Limit Values		Unit
		min.	max.	
Operating Temperature Range	$T_{OP}$	-40	+80	°C
Storage Temperature Range	$T_{STG}$	-40	+100	°C
Junction Temperature	$T_J$		100	°C
Soldering Temperature (2 mm from case bottom, $t \leq 5$ s)	$T_S$		260	°C
Reverse Voltage	$V_R$		3	V
Forward Current	$I_F$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

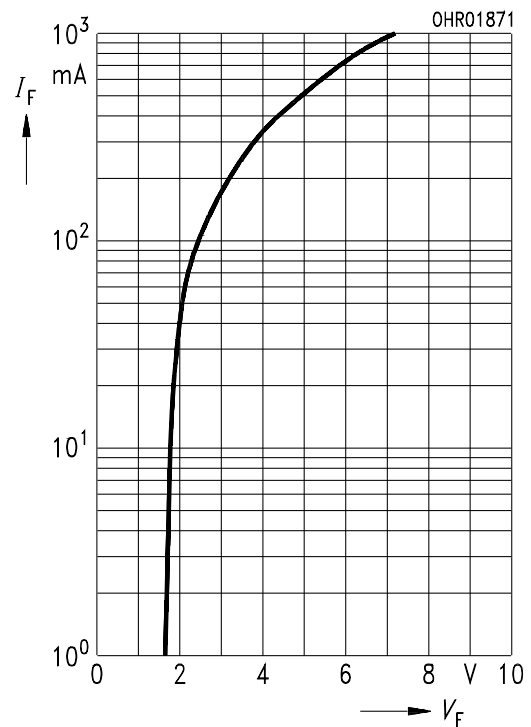
Parameter	Symbol	Value	Unit
Peak Wavelength	$\lambda_{\text{Peak}}$	650	nm
Spectral Bandwidth	$\Delta\lambda$	25	nm
Switching Times ( $R_L = 50\ \Omega$ , $I_F = 50\ \text{mA}$ )			
10% ...90%	$t_R$	15 (< 17)	ns
90% ... 10%	$t_F$	18 (< 20)	
Capacitance ( $f = 1\ \text{MHz}$ , $V_R = 0\ \text{V}$ )	$C_O$	30	pF
Forward Voltage ( $I_F = 50\ \text{mA}$ )	$V_F$	2.1 ( $\leq 2.8$ )	V
Output Power Coupled into Plastic Fiber ( $I_F = 10\ \text{mA}$ ) <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.

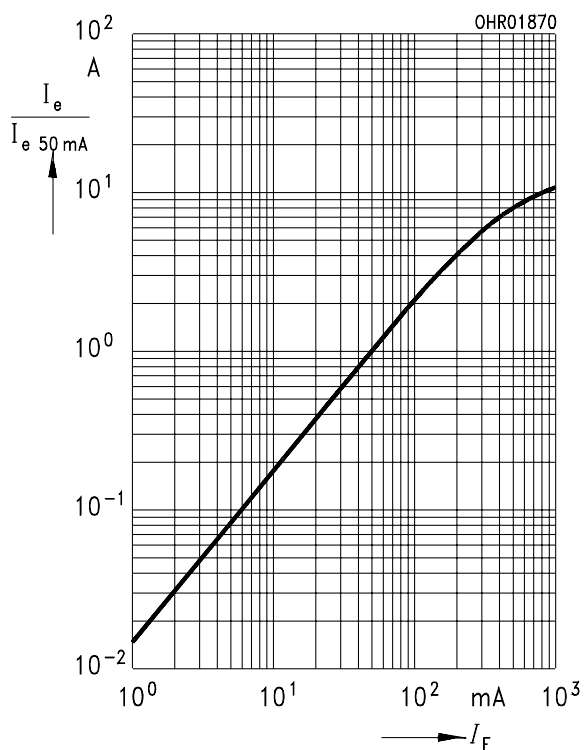
**Relative Spectral Emission  $I_{\text{rel}} = f(\lambda)$**



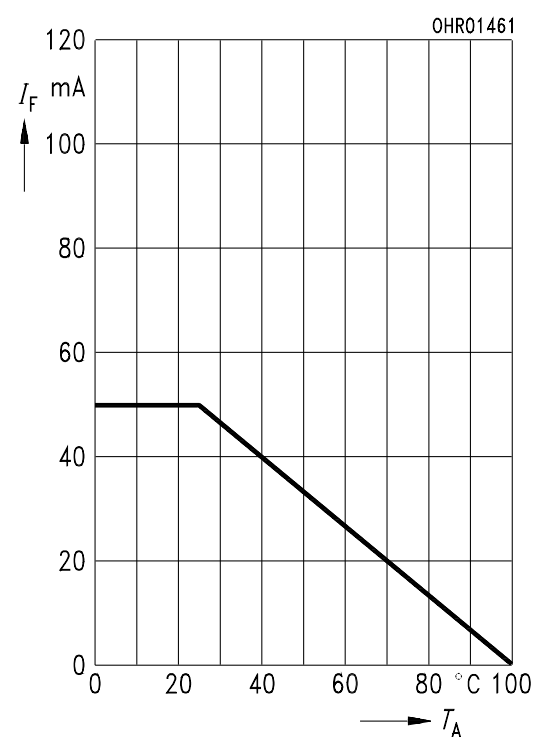
**Forward Current  $I_F = f(V_F)$**   
single pulse, duration = 20  $\mu\text{s}$



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

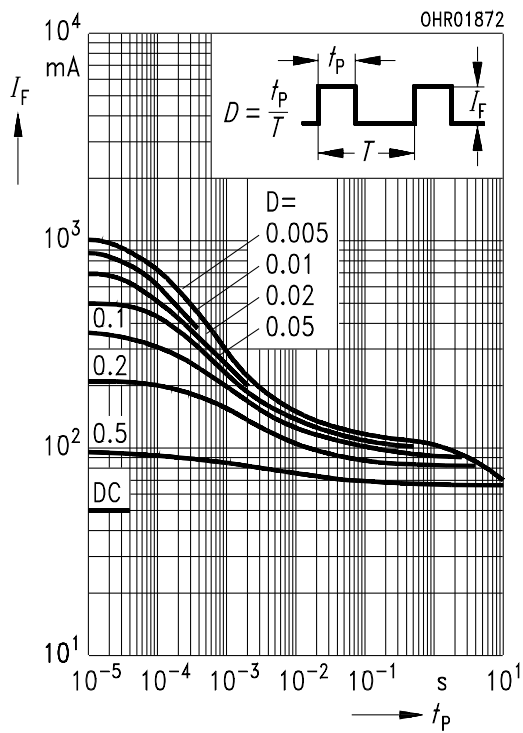


**Maximum Permissible Forward Current**  
 $I_F = f(T_A)$ ,  $R_{\text{thJA}} = 450 \text{ K/W}$

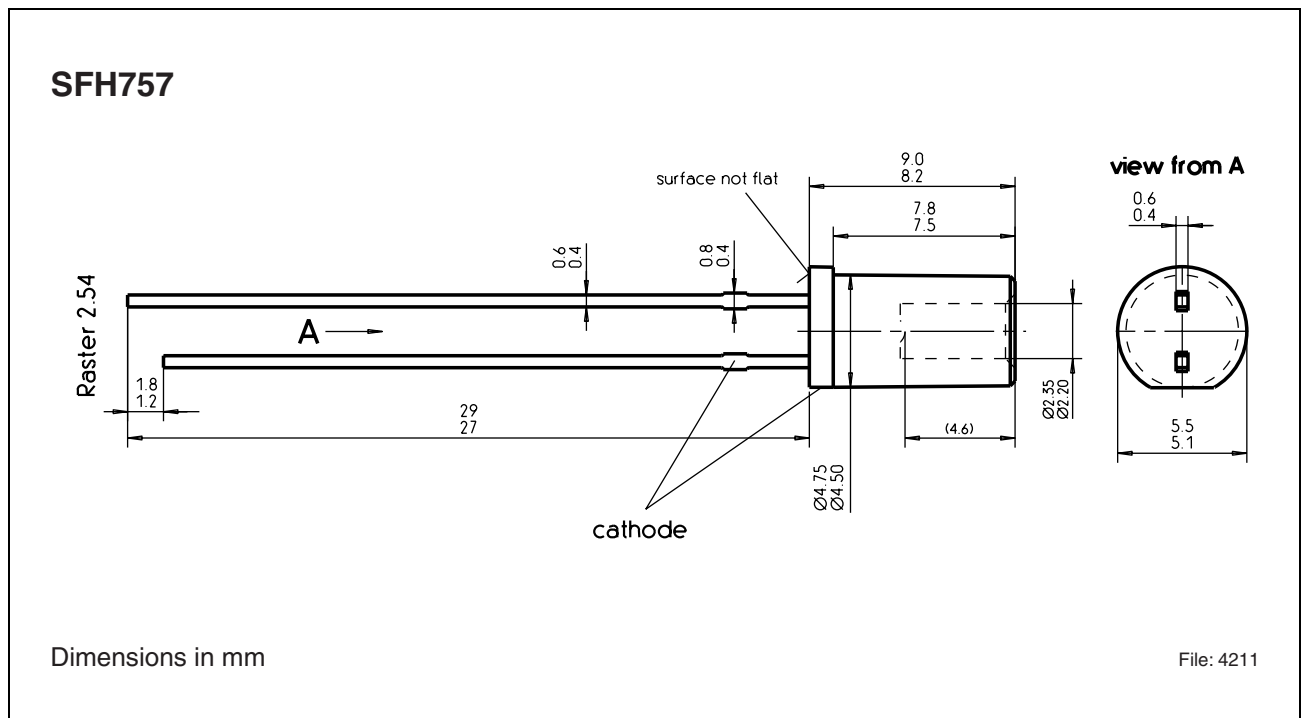


### Permissible Pulse Handling Capability

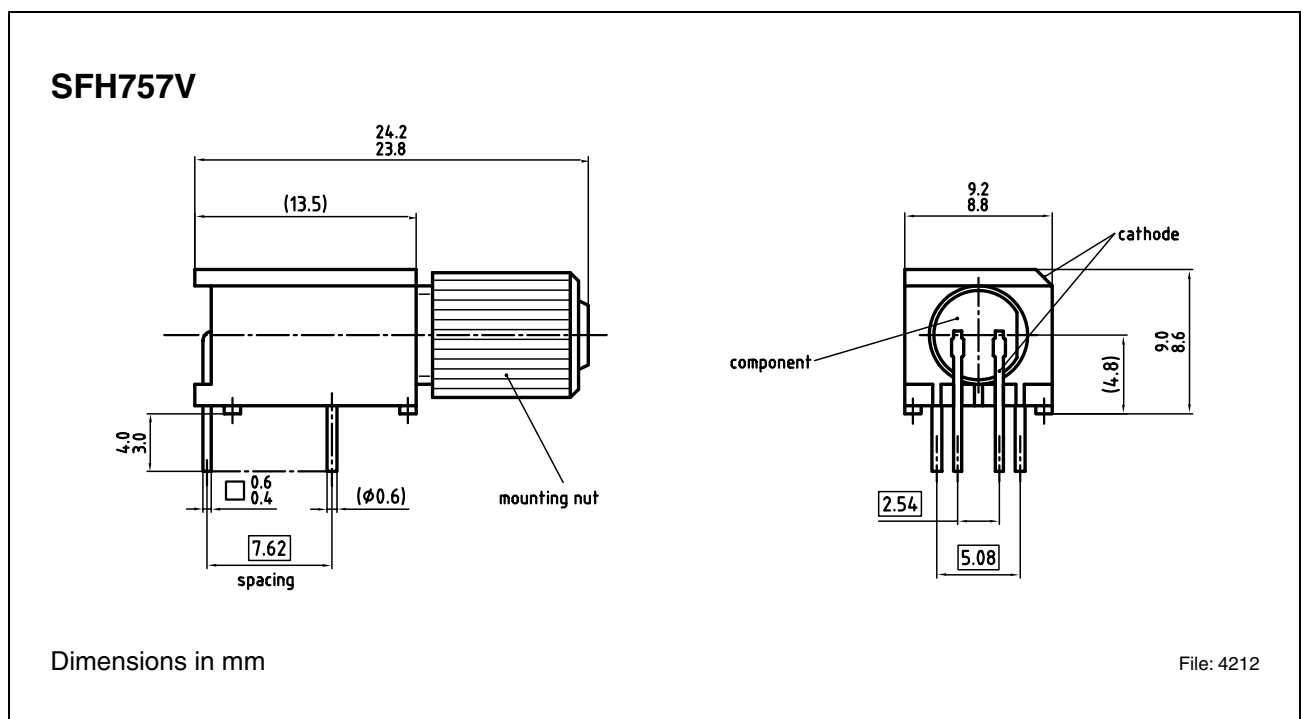
$I_F = f(t_p)$ , duty cycle  $D = \text{parameter}$ ,  
 $T_A = 25^\circ\text{C}$



**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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