

Plastic Fiber Optic Transmitter Diode Plastic Connector Housing

SFH 450
SFH 450V

Features

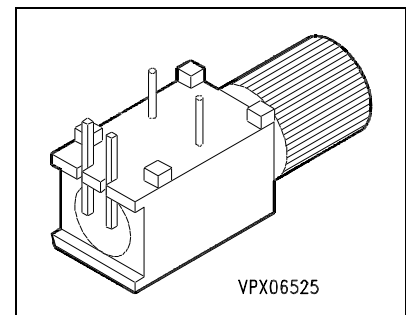
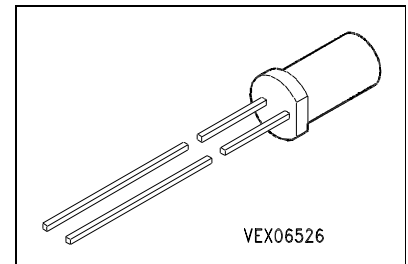
- 2.2 mm aperture holds standard 1000 micron plastic fiber
- No fiber stripping required
- Good linearity
- Molded microlens for efficient coupling

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
- Medical instruments
- Automotive electronics
- Light barriers



Type	Ordering Code
SFH 450	Q62702-P1034
SFH 450V	Q62702-P265

Maximum Ratings

Parameter	Symbol	Values	Unit
Operating temperature range	T_{OP}	- 55 ... +100	°C
Storage temperature range	T_{STG}	- 55 ... +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	5	V

Maximum Ratings (cont'd)

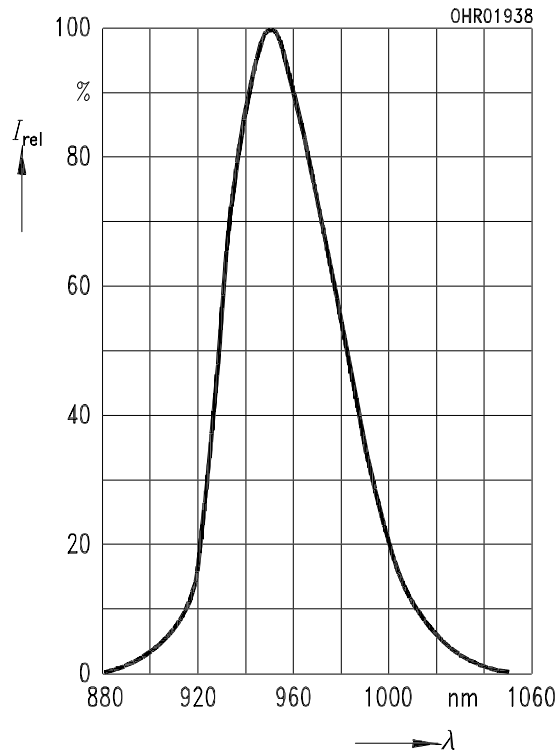
Parameter	Symbol	Values	Unit
Forward current	I_F	130	mA
Surge current $t \leq 10 \mu\text{s}$, $D = 0$	I_{FSM}	3.5	A
Power dissipation	P_{TOT}	200	mW
Thermal resistance, junction/air	R_{thJA}	375	K/W

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

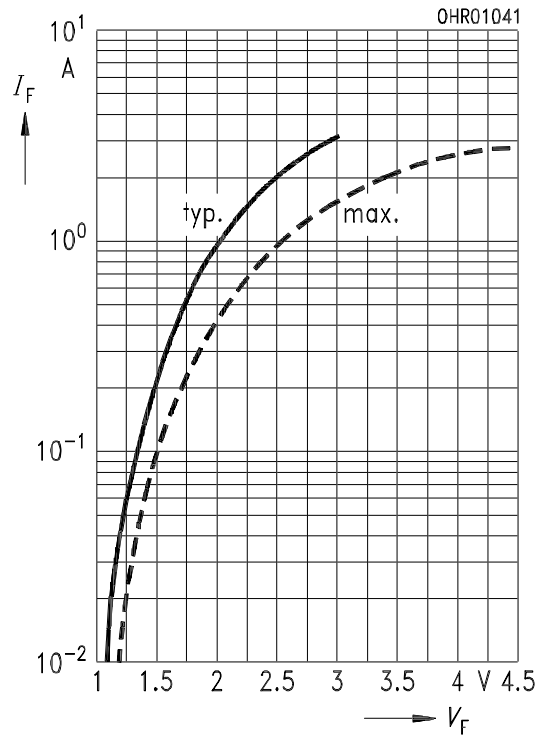
Parameter	Symbol	Values	Unit
Peak wavelength	λ_{Peak}	950	nm
Spectral bandwidth	$\Delta\lambda$	55	nm
Switching times ($R_L = 50 \Omega$, $I_F = 10 \text{ mA}$) 10 % ... 90 % 90 % ... 10 %	t_R t_F	1 1	μs μs
Capacitance ($f = 1 \text{ MHz}$, $V_R = 0 \text{ V}$)	C_O	40	pF
Forward voltage ($I_F = 10 \text{ mA}$)	V_F	1.3 (≤ 1.5)	V
Output power coupled into plastic fiber ($I_F = 10 \text{ mA}$) see Note 1	Φ_{IN}	40 ... 200	μW
Temperature coefficient Φ_{IN}	TC_Φ	- 0.5	%/K
Temperature coefficient V_F	TC_V	- 1.5	mV/K
Temperature coefficient λ_{Peak}	TC_λ	0.3	nm/K

Note 1: The output power coupled into plastic fiber is measured using 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 few meters. Therefore the fiber seems to have a higher attenuation over the first few meters compared with the specified value.

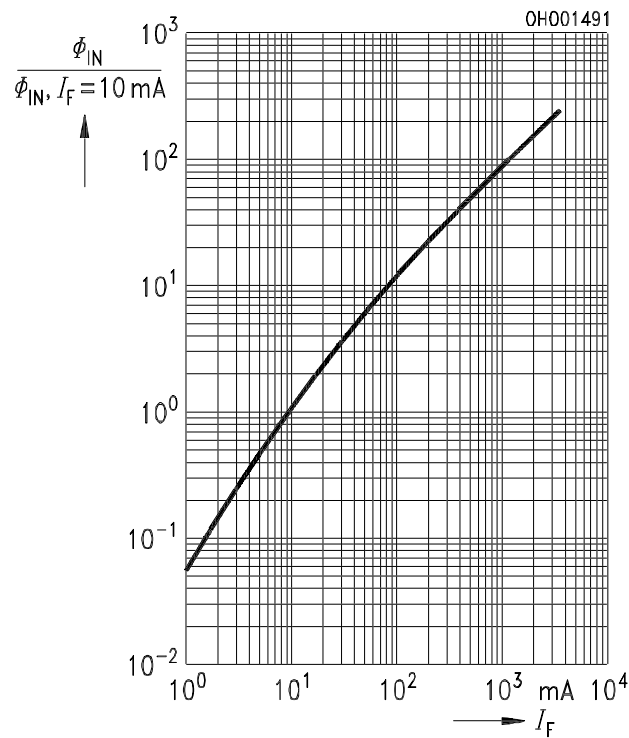
Relative spectral emission $I_{\text{rel}} = f(\lambda)$



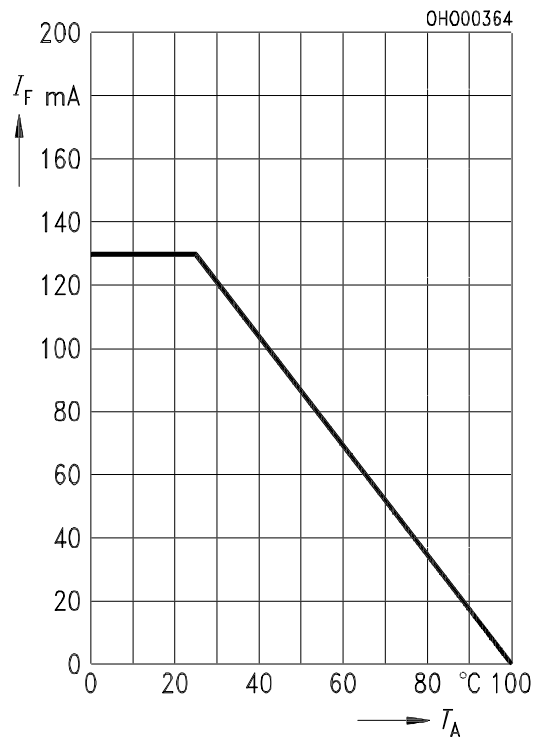
Forward current $I_F = f(V_F)$
single pulse, duration = 20 μs



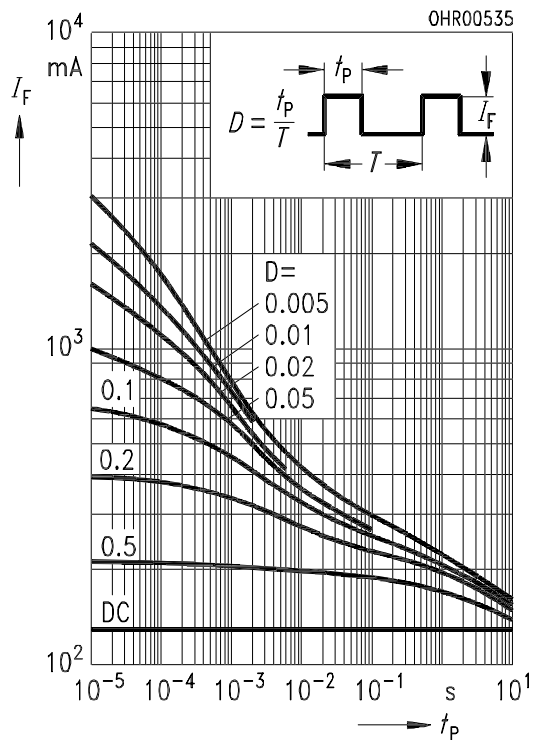
Relative output power $\Phi_{\text{IN}}/\Phi_{\text{IN}(10 \text{ mA})} = f(I_F)$



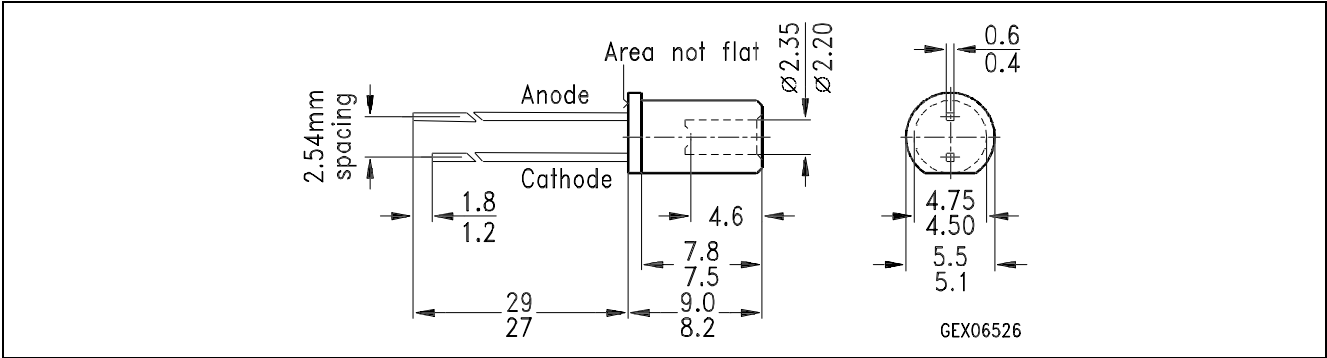
Maximum permissible forward current
 $I_F = f(T_A)$



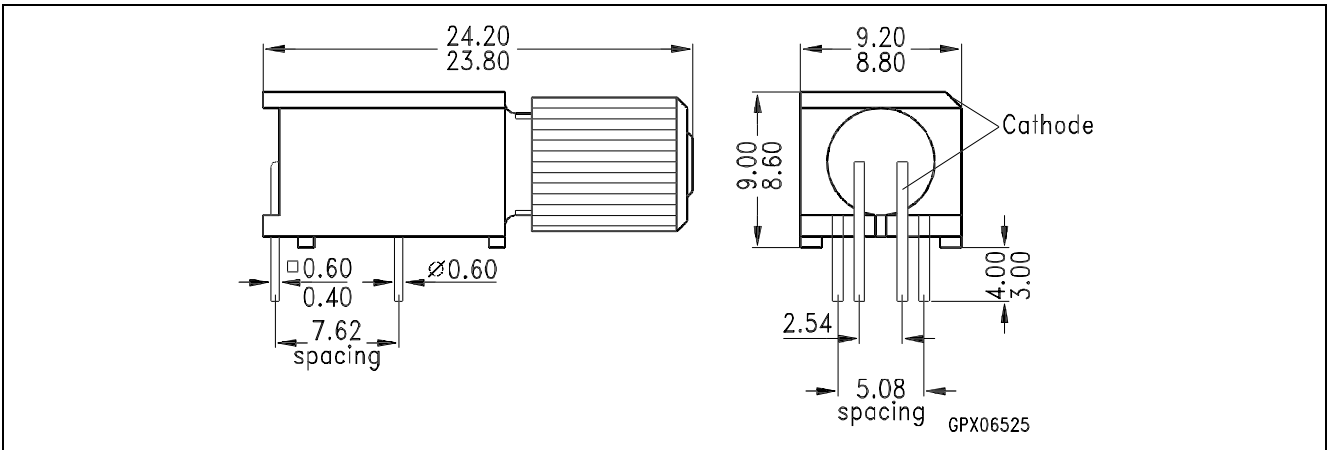
Permissible pulse load $I_F = f(t_p)$,
duty cycle $D =$ parameter, $T_A = 25^\circ\text{C}$



Package Outlines (dimensions in mm, unless otherwise specified)



SFH 450



SFH 450V