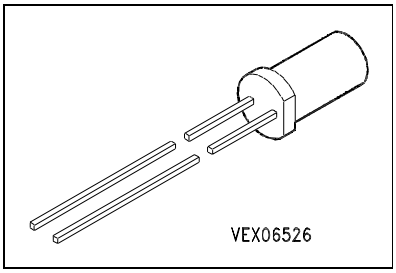
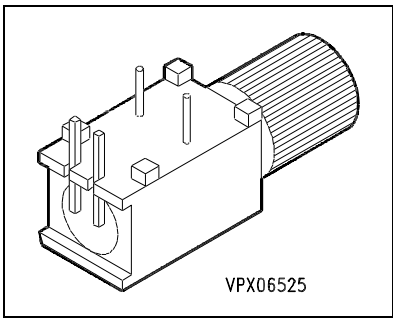
SIEMENS

Plastic Fiber Optic Transmitter Diode **SFH 756**
Plastic Connector Housing **SFH 756V**

Preliminary Data





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 756	Q62702-P1716
SFH 756V	Q62702-P1715

Maximum Ratings

Parameter	Symbol	Values	Unit
Operating temperature range	T_{OP}	– 40 … + 80	°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	3	V

Maximum Ratings (cont'd)

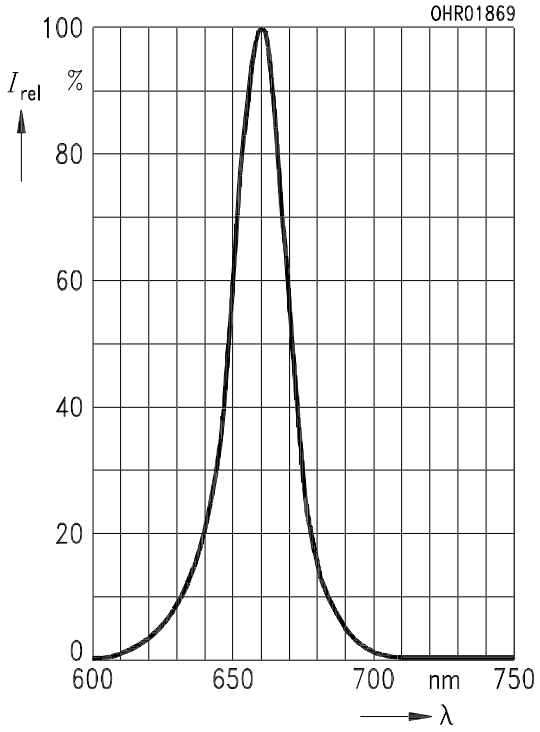
Parameter	Symbol	Values	Unit
Forward current	I_F	50	mA
Surge current $t \leq 10$ µs, $D = 0$	I_{FSM}	1	A
Power dissipation	P_{tot}	120	mW
Thermal resistance, junction/air	R_{thJA}	450	K/W

Characteristics (T_A = 25 °C)

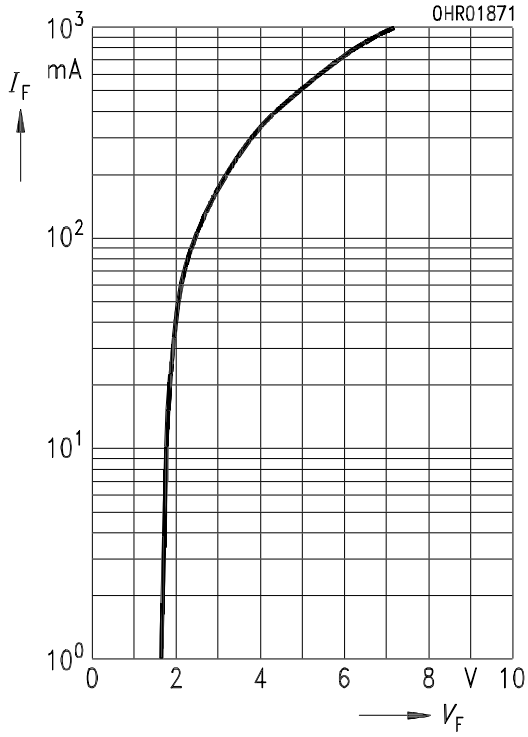
Parameter	Symbol	Values	Unit
Peak wavelength	λ_{Peak}	660	nm
Spectral bandwidth	$\Delta\lambda$	25	nm
Switching times (R_L = 50 Ω, I_F = 50 mA) 10 % … 90 % 90 % … 10 %	 t_R t_F	 0.1 0.1	 µs µs
Capacitance (f = 1 MHz, V_R = 0 V)	C_O	30	pF
Forward voltage (I_F = 50 mA)	V_F	2.1 (≤ 2.8)	V
Output power coupled into plastic fiber (I_F = 10 mA) see **Note 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

Note 1: 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.

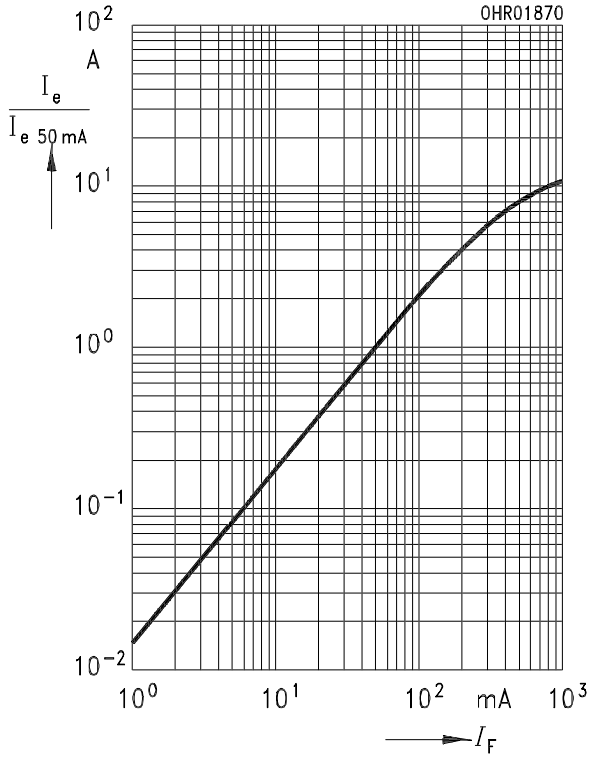
Relative spectral emission $I_{rel} = f(\lambda)$



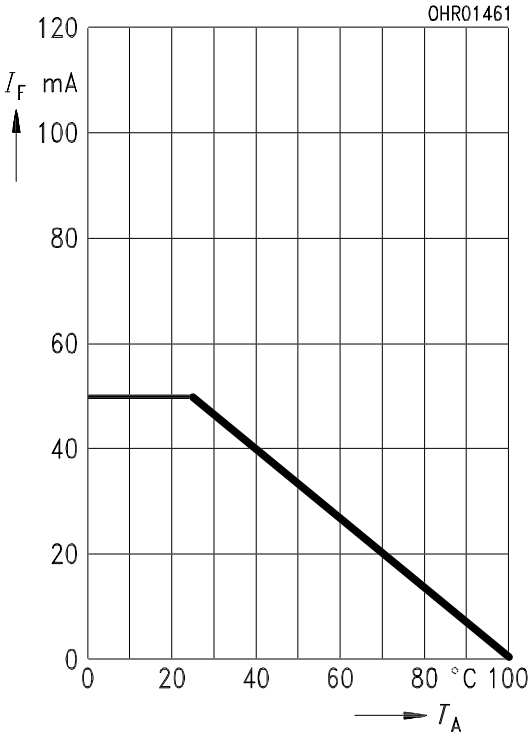
Forward current $I_F = f(V_F)$,
single pulse, duration = 20 µs



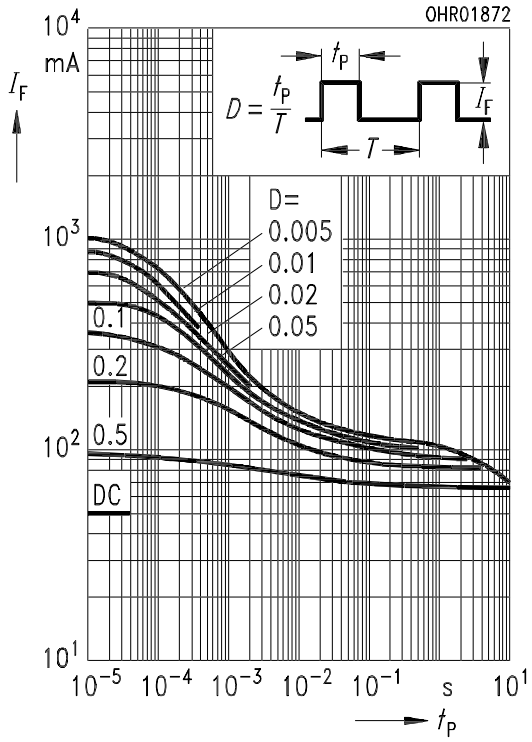
Relative output power $I_e/I_{e(50\ mA)} = f(I_F)$
single pulse, duration = 20 µs



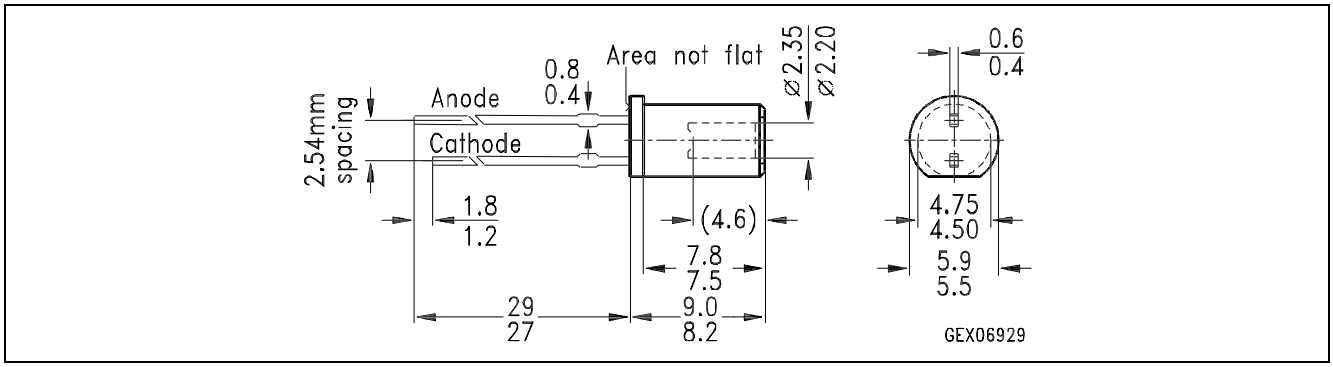
Maximum permissible forward current
$I_F = f(T_A)$, R_{thJA} = 450 K/W



Permissible pulse handling capability
$I_F = f(t_p)$, duty cycle D = parameter,
T_A = 25 °C



Package Outlines (dimensions in mm, unless otherwise specified)



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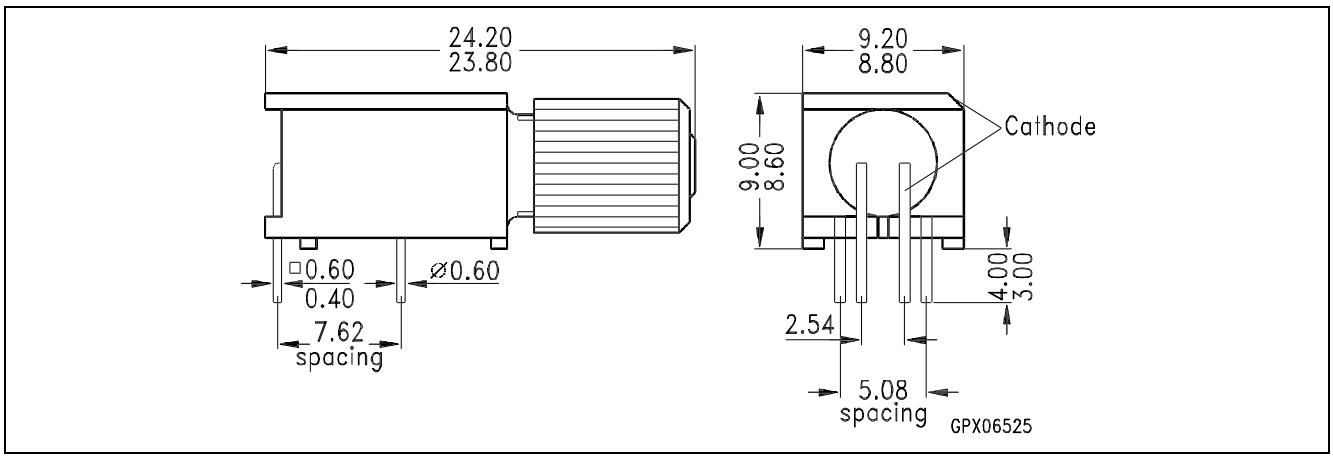

SFH 756V