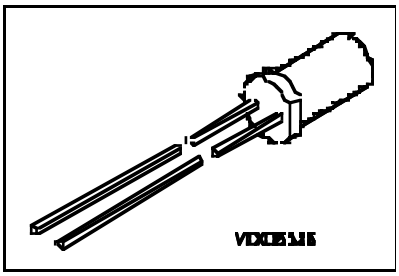
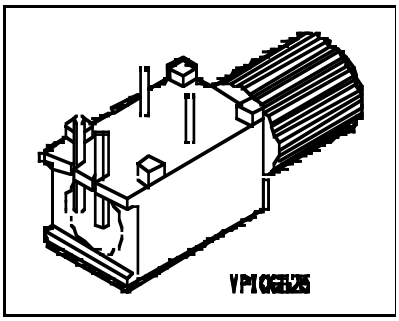
SIEMENS

Plastic Fiber Optic Photodiode Detector **SFH 250**
Plastic Connector Housing **SFH 250V**





Features

- 2.2 mm aperture holds standard 1000 micron plastic fiber
- No fiber stripping required
- Fast switching time
- Good linearity
- Sensitive in visible and near IR range
- 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 250	Q62702-P1012
SFH 250V	Q62702-P263

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

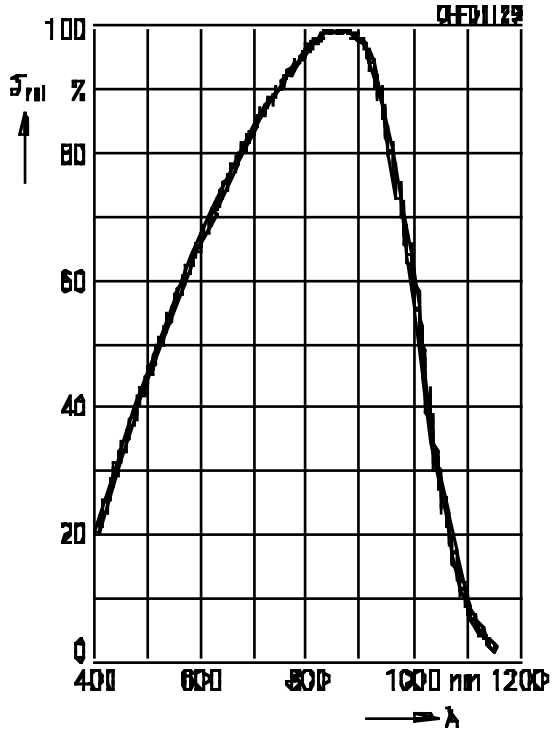
Maximum Ratings (cont'd)

Parameter	Symbol	Values	Unit
Reverse voltage	V_R	30	V
Power dissipation	P_{tot}	100	mW
Thermal resistance, junction/air	R_{thJA}	750	K/W

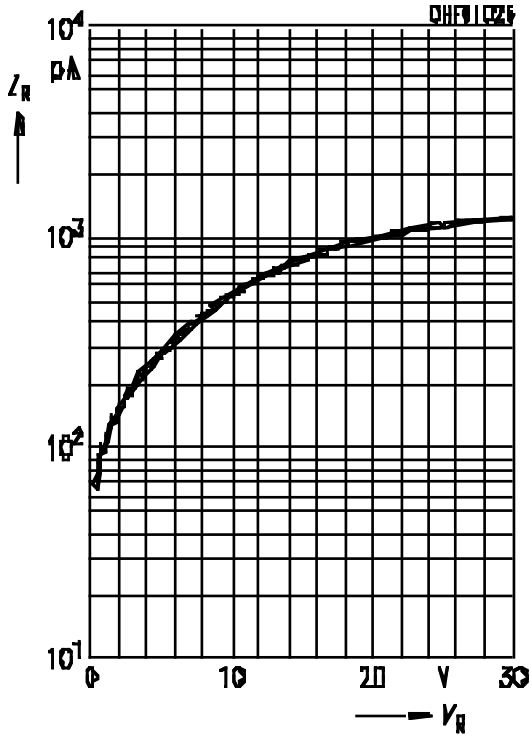
Characteristics (T_A = 25 °C)

Parameter	Symbol	Values	Unit
Maximum photosensitivity wavelength	λ_{Smax}	850	nm
Photosensitivity spectral range (S = 10 % S_{max})	λ	400 … 1100	nm
Dark current (V_R = 20 V)	I_R	1 (≤ 10)	nA
Capacitance (f = 1 MHz, V_R = 0 V)	C_O	11	pF
Rise and fall times of photocurrent (R_L = 50 Ω, V_R = 30 V, λ = 880 nm) 10 % … 90 % 90 % … 10 %	 t_R t_F	 0.01 0.01	 µs µs
Photocurrent (Φ_{IN} = 10 µW coupled from the end of a plastic fiber, V_R = 5 V) λ = 660 nm λ = 950 nm	 I_P I_P	 3 (≥ 1.6) 4 (≥ 2.5)	 µA µA
Forward voltage (I_F = 50 mA)	V_F	2.1 (≤ 2.8)	V
Temperature coefficient I_P λ = 560 … 660 nm	TC_I	– 0.04	%/K
Temperature coefficient I_P λ = 830 nm	TC_I	0.04	%/K
Temperature coefficient I_P λ = 950 nm	TC_I	0.2	%/K

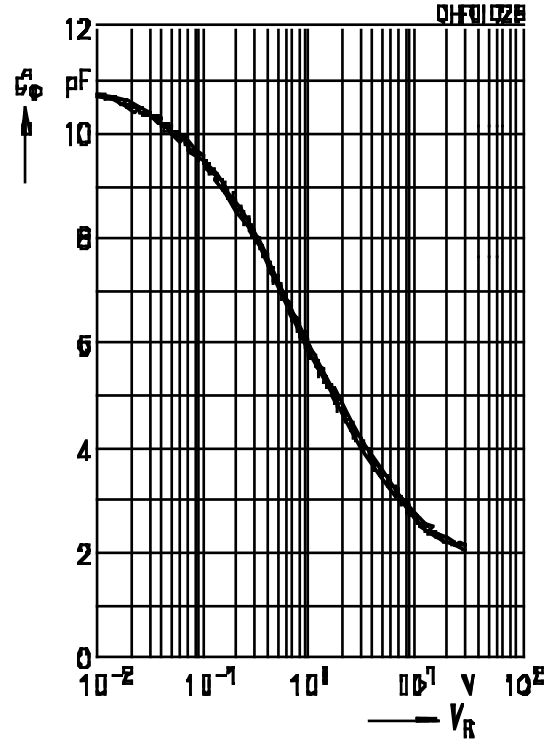
Relative spectral sensitivity $S_{rel} = f(\lambda)$



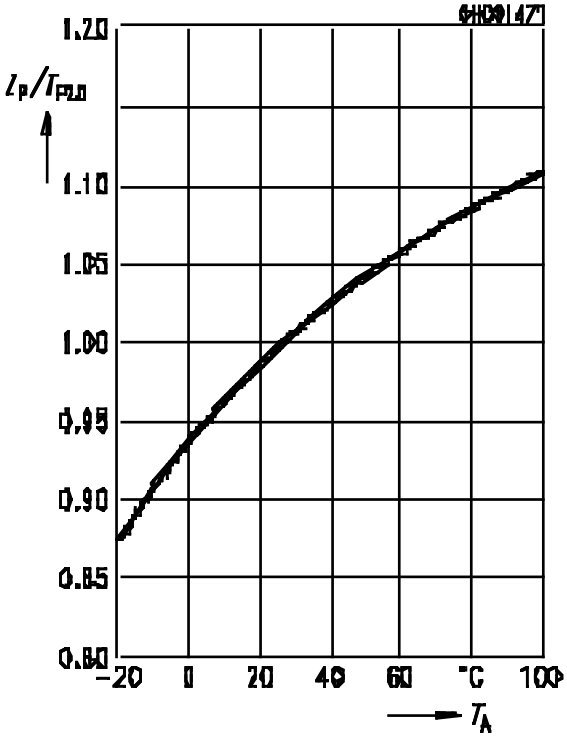
Dark current $I_R = f(V_R)$, T_A = 25 °C



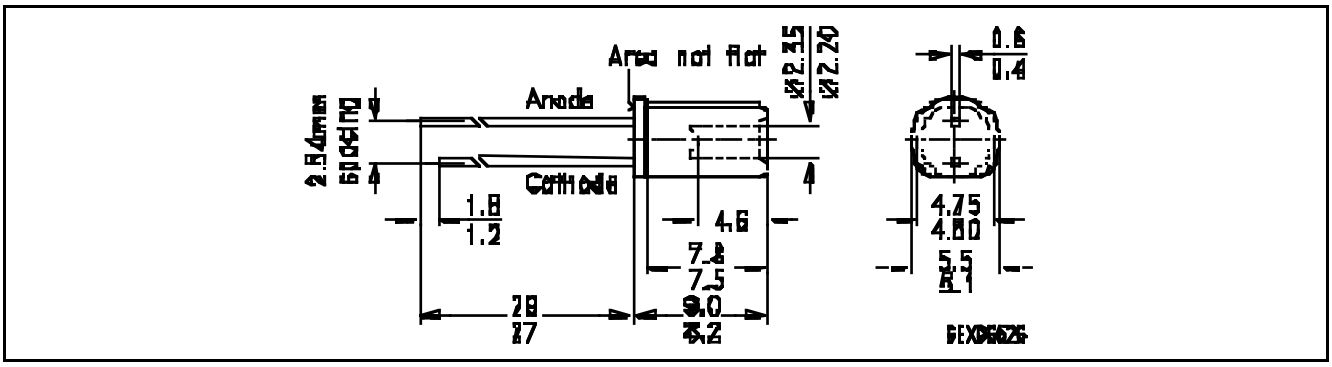
Capacitance $C_0 = f(V_R)$, f = 1 MHz, E_V = 0



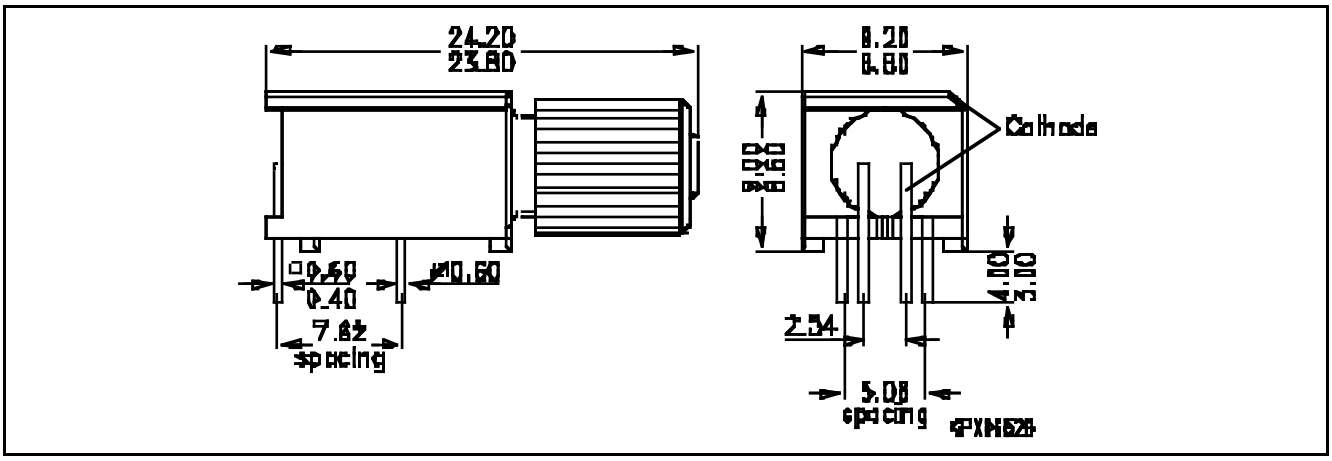
Photocurrent $I_P/I_{P25} = f(T_A)$, λ = 950 nm



Package Outlines (dimensions in mm, unless otherwise specified)



SFH 250



SFH 250V