

Plastic Fiber Optic Photodiode Detector Plastic Connector Housing

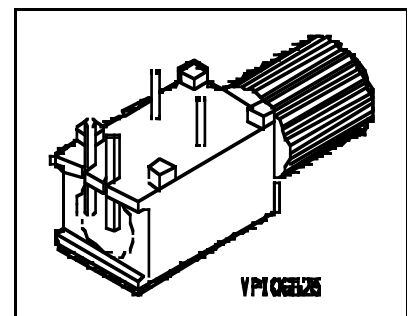
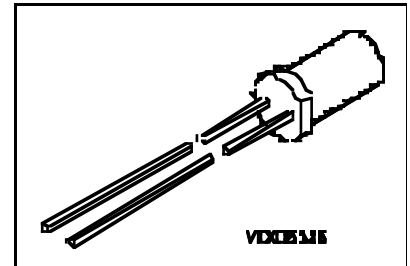
SFH 250
SFH 250V

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

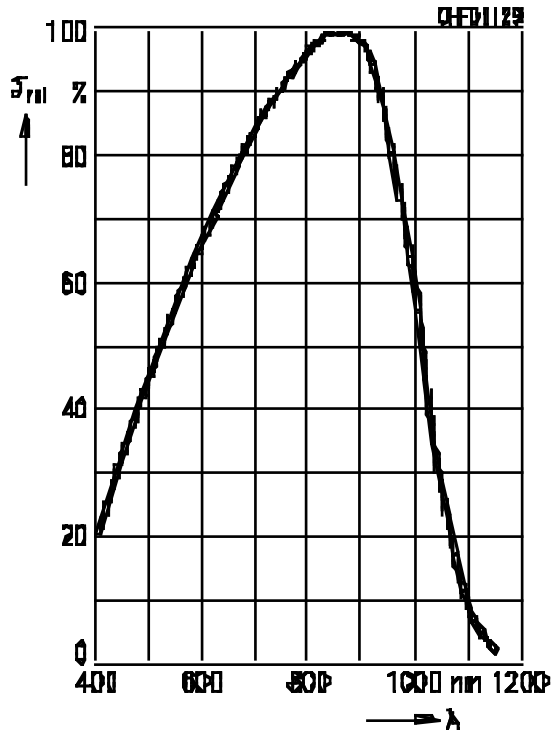
Maximum Ratings (cont'd)

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

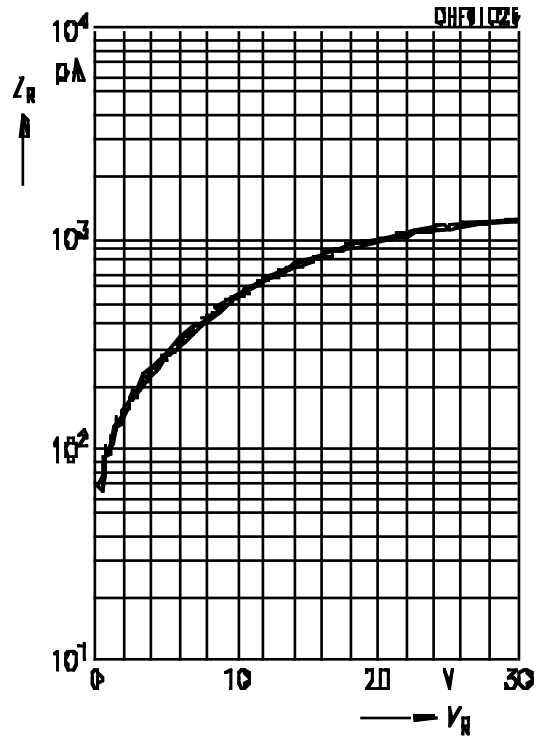
Characteristics ($T_A = 25\text{ °C}$)

Parameter	Symbol	Values	Unit
Maximum photosensitivity wavelength	λ_{Smax}	850	nm
Photosensitivity spectral range ($S = 10\% S_{max}$)	λ	400 ... 100	nm
Dark current ($V_R = 20\text{ V}$)	I_R	1 (≤ 10)	nA
Capacitance ($f = 1\text{ MHz}$, $V_R = 0\text{ V}$)	C_O	11	pF
Rise and fall times of photocurrent ($R_L = 50\ \Omega$, $V_R = 30\text{ V}$, $\lambda = 880\text{ nm}$) 10 % ... 90 % 90 % ... 10 %	t_R t_F	0.01 0.01	μs μs
Photocurrent ($\Phi_{IN} = 10\ \mu\text{W}$ coupled from the end of a plastic fiber, $V_R = 5\text{ V}$) $\lambda = 660\text{ nm}$ $\lambda = 950\text{ nm}$	I_P I_P	3 (≥ 1.6) 4 (≥ 2.5)	μA μA
Forward voltage ($I_F = 50\text{ mA}$)	V_F	2.1 (≤ 2.8)	V
Temperature coefficient I_P $\lambda = 560\text{ ... }660\text{ nm}$	TC_I	- 0.04	%/K
Temperature coefficient I_P $\lambda = 830\text{ nm}$	TC_I	0.04	%/K
Temperature coefficient I_P $\lambda = 950\text{ nm}$	TC_I	0.2	%/K

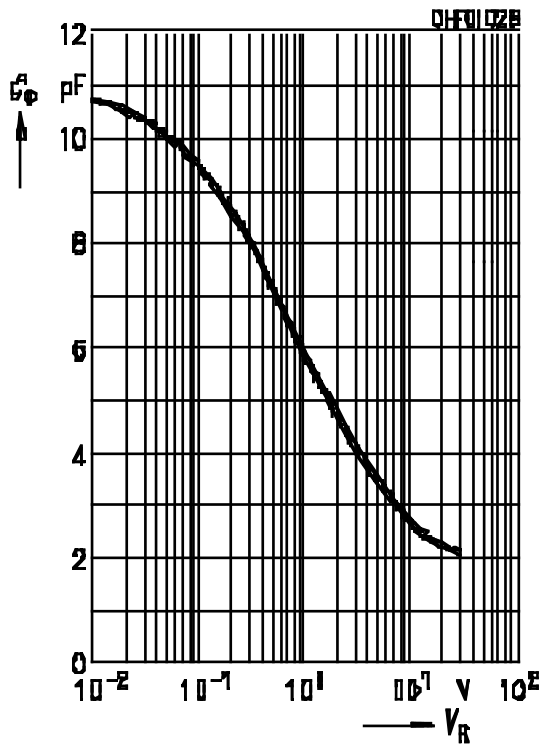
Relative spectral sensitivity $S_{rel} = f(\lambda)$



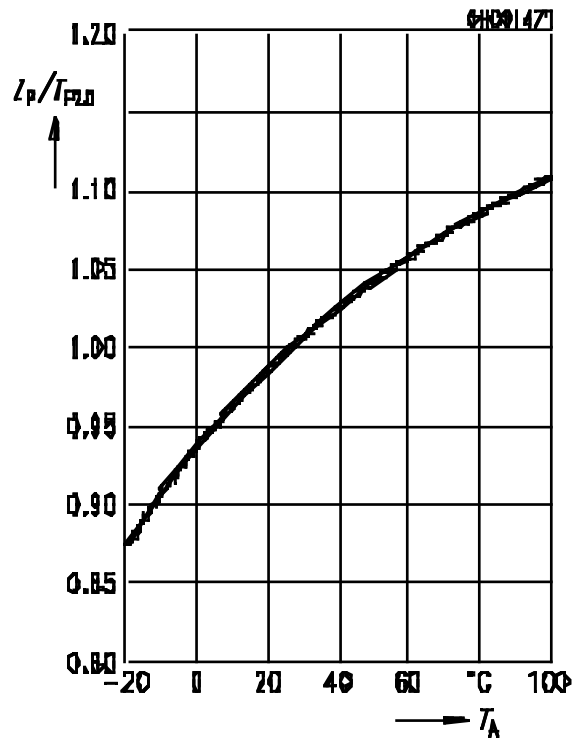
Dark current $I_R = f(V_R), T_A = 25^\circ\text{C}$



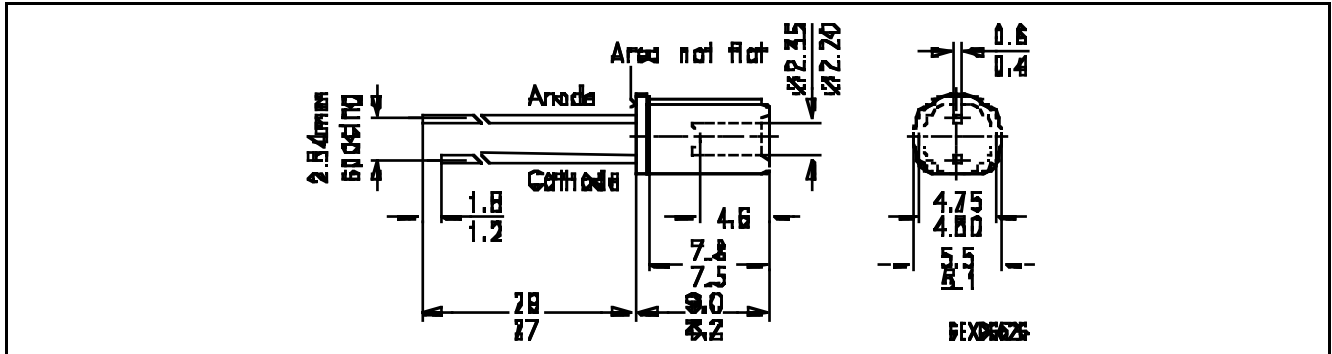
Capacitance $C_0 = f(V_R), f = 1\text{ MHz}, E_V = 0$



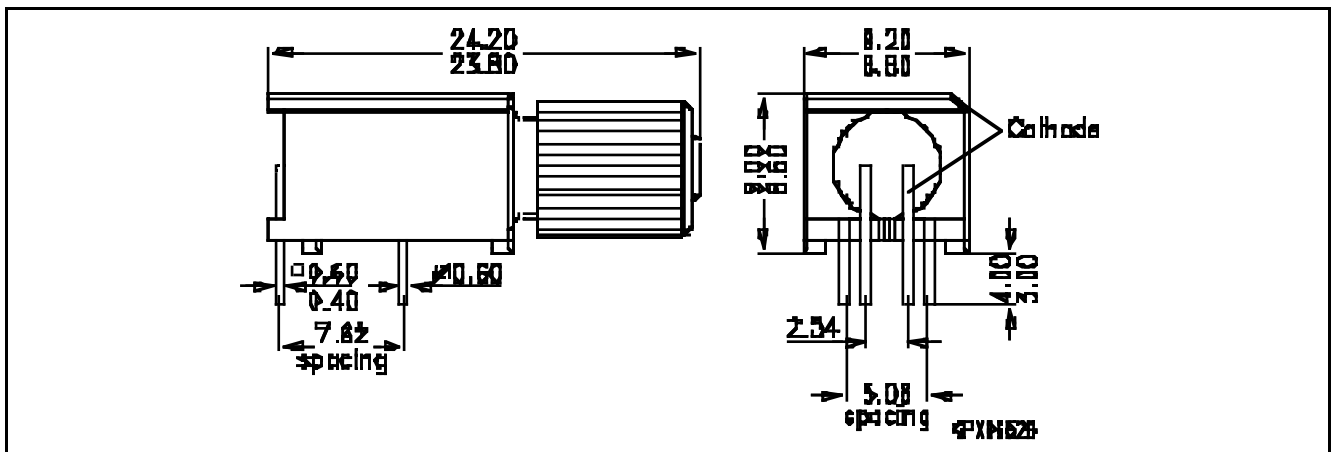
Photocurrent $I_P/I_{P25} = f(T_A), \lambda = 950\text{ nm}$



Package Outlines (dimensions in mm, unless otherwise specified)



SFH 250



SFH 250V