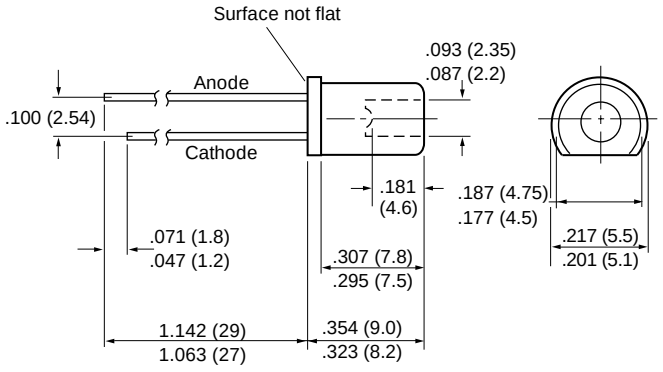
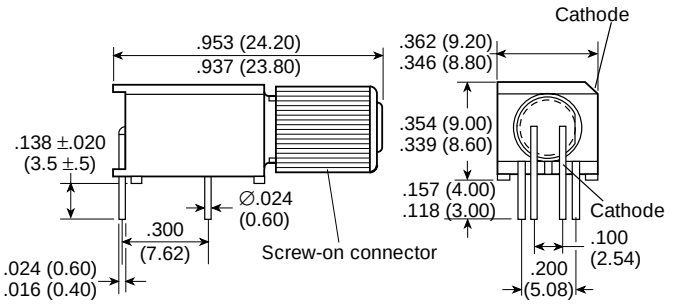
SIEMENS

5 mm LED PACKAGE SFH250
PLASTIC CONNECTOR HOUSING SFH250V
Plastic Fiber Optic Photodiode Detector

Dimensions in inches (mm)



SFH250



SFH250V

FEATURES

- **2.2 mm aperture holds standard 1000 micron plastic fiber**
- **No fiber stripping required**
- **Fast switching time**
- **Very good linearity**
- **Sensitive in the near IR and visible range**
- **Molded microlens for efficient coupling**
- **SFH250V only**
  - **Plastic connector housing**
  - **Mounting screw attached to 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**

See Appnotes 40, 41, 43 for application information.

Maximum Ratings

Operating/Storage Temperature Range (T_{OP}, T_{STG}) .....–55° to +100°C
Soldering Temperature (2 mm from case bottom) (T_S) t≤5 s .....260°C
Reverse Voltage (V_R)..... 30 V
Power Dissipation (P_{TOT}) T_A=25°C ..... 100 mW
Thermal Resistance (R_{thJA}) ..... 750 K/W
Junction Temperature (T_J) .....100°C

Characteristics (T_A=25°C)

Parameter	Symbol	Value	Unit	Condition
Max. Photosensitivity Wavelength	λ_{SMAX}	850	nm	
Photosensitivity, Spectral Range	I	400 to 1100		S=10% of S_{MAX}
Dark Current	I_R	1(≤10)	nA	V_R=20 V
Capacitance	C_0	11	pF	V_R=0 V, f=1 mHz, E_V=0 lx
Rise and Fall Time of Photocurrent 10% to 90% and 90% to 10%	t_R, t_F	10	ns	R_L=50 Ω, V_R=30 V, λ=880 nm
Noise Equivalent Power	NEP	2.9×10^{-14}	W/√Hz	
Detection Limit	D*	3.5×10^{12}	cm•√Hz/W	V_R=20m
Photocurrent, V_R=5 V	I_P	3(≥1.6) 4(≥2.5)	µA	λ=660 nm λ=950 nm
Open Circuit Voltage	V_O	300	mV	
Temperature Coefficient I_P	TC_I	–0.04 0.04 0.2	%/K	λ=560–660 nm λ=830 nm λ=950 nm
Temperature Coefficient V_L	TC_V	–2.6	mV/K	

Figure 1.Relative spectral sensitivity
$S_{REL}=f(\lambda)$

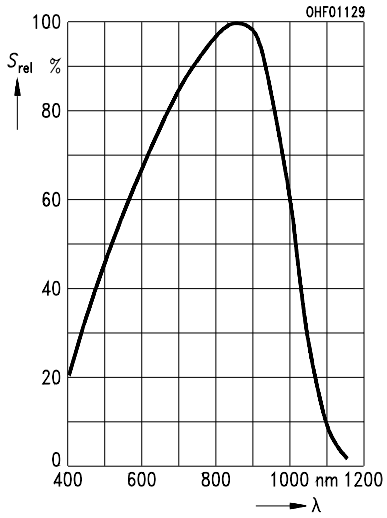


Figure 3.Capacitance
$C_0=f(V_R)$, f=1 MHz, E_V=0

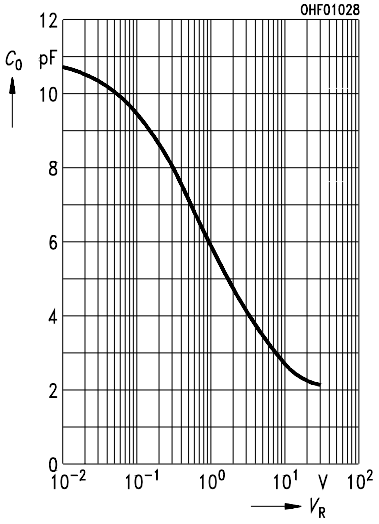


Figure 2.Dark Current
$I_R=f(V_R)$, T_A=25°C

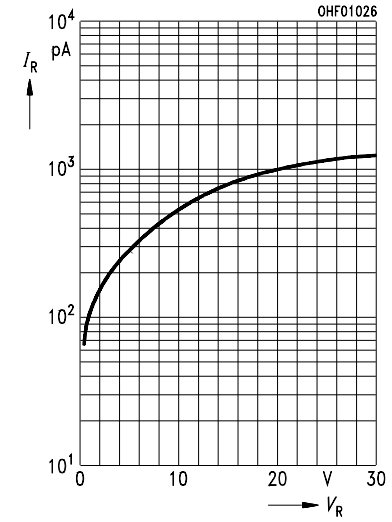


Figure 4.Photocurrent
$I_P/I_{P25}=f(T_A)$, λ=950 nm