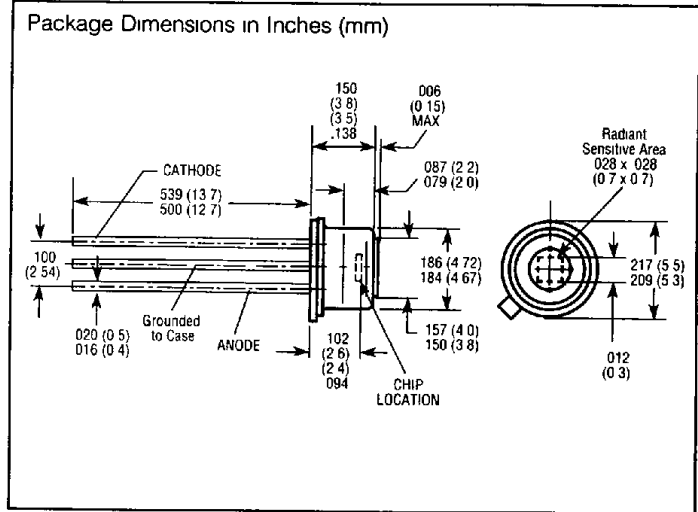
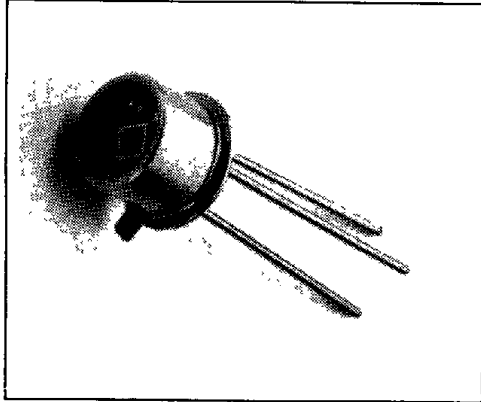


SIEMENS

T-41-50
SFH2012A

**FIBER OPTIC
PIN PHOTODIODE**



FEATURES

- TO-18 Hermetic Package, 3 Leads
- Isolated Case
- Flat Glass Lens
- For Fiber Optic Communications

DESCRIPTION

SFH2012A is a planar silicon PIN-photo diode. The case (18A3 DIN 41876—similar to TO-18) has a flat glass lens top. The cathode and anode are electrically isolated from the case. The diode is a receiver with high operating frequency, very low reverse current, and fast switching time. Because of the flat lens, the diode is especially suitable for use with fiber optic cables, up to 560 Mbits.

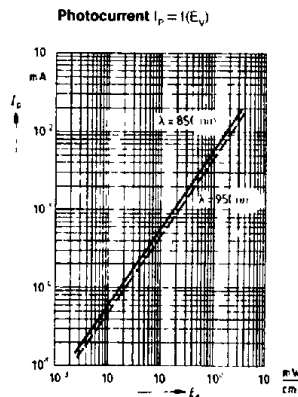
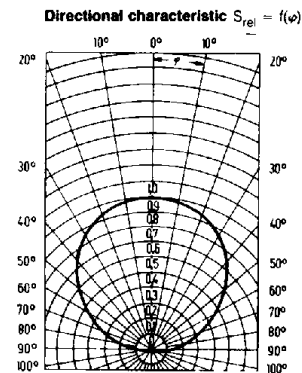
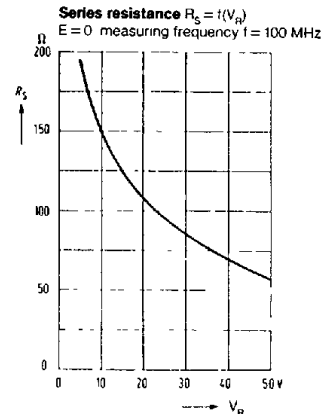
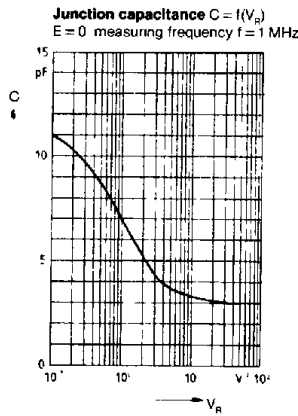
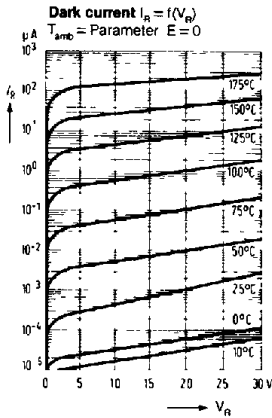
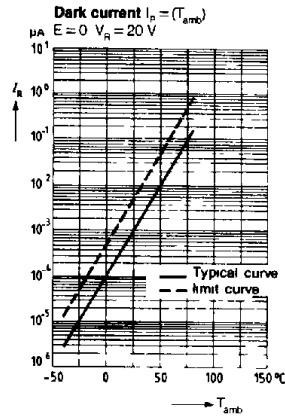
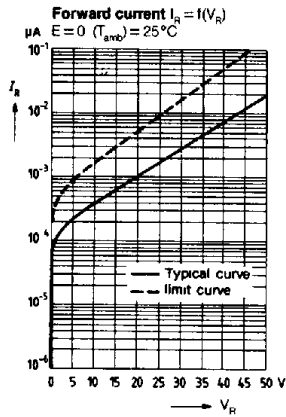
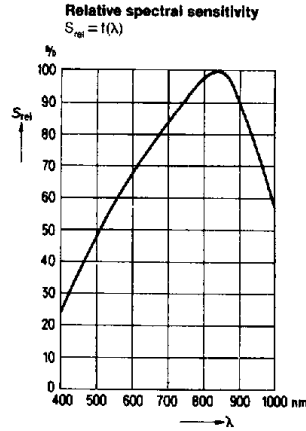
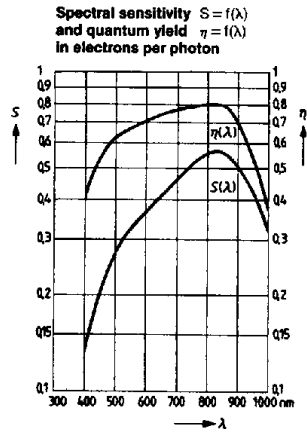
Maximum Ratings

Reverse Voltage (V_R)	50 V
Storage Temperature Range (T_S)	-40 to +80°C
Junction Temperature (T_J)	80°C

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

Wavelength of Max. Photosensitivity	λ_{Smax}	850	nm
Radiant Sensitive Area	A	1	mm ²
Dark Current ($V_R = 20\text{ V}$, $E = 0$)	I_D	1 (≤ 5)	nA
Spectral Sensitivity ($\lambda = 850\text{ nm}$)	S_A	0.55	A/W
($\lambda = 950\text{ nm}$)	S_λ	0.45 (≥ 0.35)	A/W
Quantum Yield (Electrons per photon) ($\lambda = 850\text{ nm}$)	η	0.80	Electrons Photon
Rise Time of the Photocurrent SFH202 ($R_L = 50\Omega$, $V_R = 20\text{ V}$, $\lambda = 900\text{ nm}$)	t_r	0.5 (≤ 1)	ns
SFH202a ($R_L = 50\Omega$, $V_R = 50\text{ V}$, $\lambda = 850\text{ nm}$)	t_r	3	ns
Cut off Frequency ($R_L = 50\Omega$, $V_R = 20$) SFH2012 ($\lambda = 900\text{ nm}$)	f_c	500	MHz
SFH2012A ($\lambda = 850\text{ nm}$)	f_c	200	MHz
Capacitance ($V_R = 0\text{ V}$)	C_0	13	pF
($V_R = 1\text{ V}$)	C_1	7	pF
($V_R = 12\text{ V}$)	C_{12}	3.3	pF
($V_R = 20\text{ V}$)	C_{20}	3	pF
Temperature Coefficient for I_D	TK	0.2	%/K
Noise Equivalent Power ($V_R = 20\text{ V}$)	NEP	3.3×10^{-14}	$\frac{W}{\sqrt{\text{Hz}}}$ cm $\sqrt{\text{Hz}}$
Detection Limit	D^*	3.1×10^{12}	$\frac{W}{W}$

T-41-50



Fiber Optic Devices