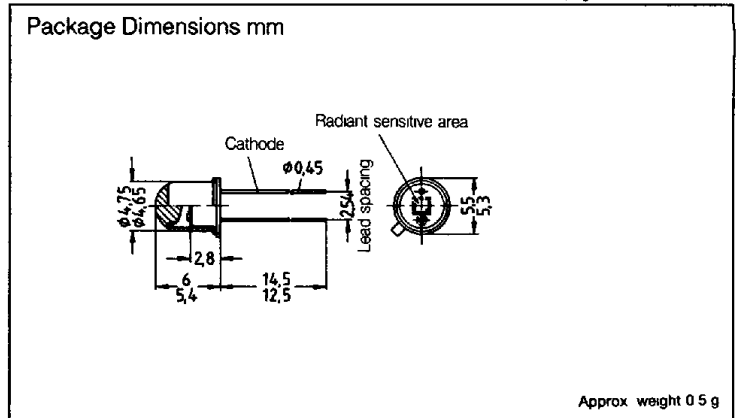
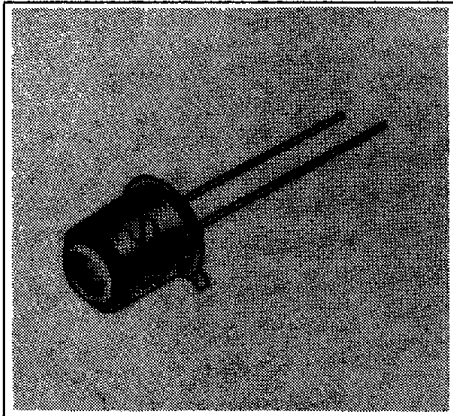


SIEMENS

SFH 212

**SILICON PHOTODIODE
VERY LOW DARK CURRENT**

T-41-51



FEATURES

- **Package:** 18 A3 DIN 41870 (TO18), Glass Lens, Hermetically Sealed Package, Solder Tabs, Lead Spacing 2.54 mm (1/16")
- **Anode Marking:** Tab at Case Bottom
- **High Reliability**
- **No Testable Degradation**
- **High Packing Density**
- **Low Noise**
- **High Open-Circuit Voltage as Photovoltaic Cells**
- **Detector for Low Illuminance**
- **Short Switching Time**
- **High Spectral Sensitivity**
- **Wide Temperature Range**
- **Suitable for Use in the Visible Light and Near Infrared Range**

DESCRIPTION

The SFH 212 is a silicon photodiode in planar technology. The N-Si material used results in a positive front and negative back contact. These photodetectors can be operated as photodiodes with reverse voltage or as photovoltaic cells.

Applications include exposure meters, automatic exposure timers.

Maximum Ratings

Operating and Storage Temperature Range (T_{op} , T_{sto})	-40°C to +80°C
Soldering Temperature (2 mm distance from case bottom, $t \leq 3$ s) (T_{solder})	230°C
Reverse Voltage (V_r)	7 V
Total Power Dissipation ($T_A=25^\circ\text{C}$) (P_{TOT})	200 mW

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

Parameter	Symbol		Unit
Spectral Sensitivity ($V_r=5$ V, standard light A, $T=2856$ K)	S	25 (≥ 20)	nA/lx
Wavelength of Maximum Sensitivity	λ_{max}	800	nm
Range of Spectral Sensitivity ($S=10\%$ of S_{max})	λ	350 - 1100	nm
Radiant Sensitive Area	A	0.97	mm ²
Dimension of Radiant Sensitive Area	L x W	0.985 x 0.985	mm
Distance Chip Surface to Case Surface	D	2.6 - 3.2	mm
Half Angle	ϕ	± 15	Deg
Dark Current ($V_r=1$ V)	I_{r}	5 (≤ 20)	pA
Spectral Sensitivity ($\lambda=850$ nm)	S_λ	0.50	A/W
Zero Crossover ($E_e=0$, $T_A=25^\circ\text{C}$)	S_0	≤ 2.00	pA
Quantum Yield ($\lambda=800$ nm)	η	0.73	$\frac{\text{mV}}{\text{electrons photon}}$
Open-Circuit Voltage ($E_v=1000$ lx, standard light A, $T=2856$ K)	V_o	470 (≥ 400)	mV
Short-Circuit Current ($E_v=1000$ lx, standard light A, $T=2856$ K)	I_{sc}	25 (≥ 20)	μA
Rise and Fall Time of Photocurrent from 10% to 90%, and from 90% to 10% of final value ($R_L=1$ k Ω , $V_r=5$ V, $\lambda=830$ nm, $I_p=25$ μA)	t_r, t_f	1.3	μs
Forward Voltage ($I_f=100$ mA, $E_e=0$, $T_A=25^\circ\text{C}$)	V_f	1.3	V
Capacitance ($V_r=0$ V, $f=1$ MHz, $E_v=0$ lx)	C_0	100	pF
Temperature Coefficient of V_o	TC_V	-2.6	mV/K
Temperature Coefficient of I_{sc}	TC_I	0.16	%/K
Noise Equivalent Power ($V_r=1$ V)	NEP	2.5×10^{-15}	$\frac{\text{W}}{\sqrt{\text{Hz}}}$
Detection Limit ($V_r=1$ V)	D	4.0×10^{15}	$\text{cm} \cdot \sqrt{\text{Hz/W}}$