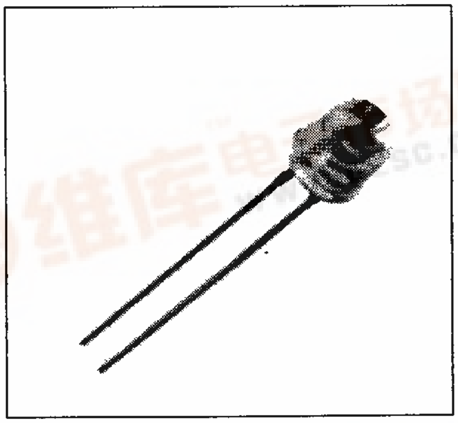
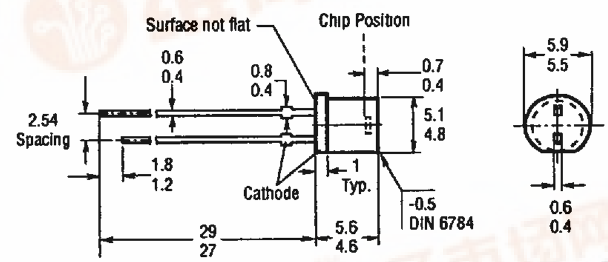
SIEMENS

SFH 263
WITH FILTER SFH 263F
SILICON PHOTODIODE
VERY LOW DARK CURRENT



Package Dimensions mm



FEATURES

- **Package: 5-mm LED Package, Flat Lens, Clear Epoxy Resin, Solder Tabs, Lead Spacing 2.54 mm (1/10")**
- **Cathode Marking: Short Solder Tab**
- **High Reliability**
- **No Testable Degradation**
- **Low Noise**
- **High Open-Circuit Voltage During Element Operation**
- **Detector for Low Illuminance**
- **Short Switching Time**
- **High Photosensitivity**
- **Wide Temperature Range**
- **Suitable for the Visible as well as the Infrared Range**
- **Daylight-Rejection Filter (SFH 263F)**
- **Same Package as Phototransistors SFH 317, SFH 317F, IRED SFH 485P, Photodiodes SFH 217, SFH 217F.**

DESCRIPTION

The SFH 263 is a silicon photodiode fabricated in planar technology. The N-Si material used results in a positive front and negative back contact. These photodetectors are suitable for diode operation (with reverse voltage) as well as for element operation.

Applications include exposure meters, automatic exposure timers, industrial electronics, "measuring and controlling".

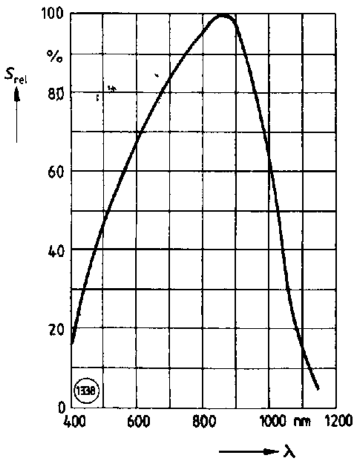
Maximum Ratings

Operating and Storage Temperature Range (T_{OP})(T_{STG})	-40°C to +80°C
Soldering Temperature (2 mm distance from case, t =3 sec.) (T_S)	230°C
Reverse Voltage (V_R)	7 V
Total Power Dissipation (P_{TOT}) (T_A=25°C)	100 mW

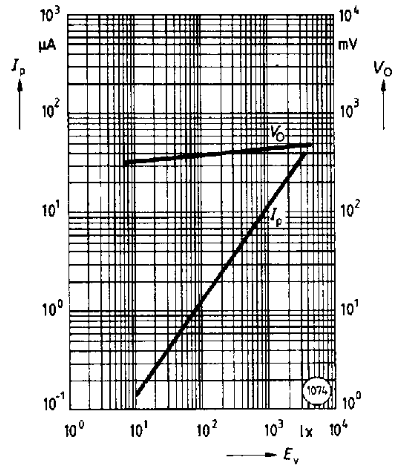
Characteristics (T_A=25°C)

Parameter	Symbol	SFH263	SFH363F	Unit
Photosensitivity (V_R=5 V, standard light A, T=2856 K, λ=950nm, E_E=0.5mW/cm^2)	S	10 (≥8)	2 5(≥2)	nA/lx
Wavelength of Maximum Sensitivity	λ_{SMAX}	850	900	nm
Spectral Range of Photosensitivity (S=10% of S_{MAX})	λ	350–1100	730–1100	nm
Radiant Sensitive Area	A	0 97		mm²
Dimensions of Radiant Sensitive Area	L x B	0.985 x 0 985		mm
Distance Chip Surface to Case Surface	H	0 4–0 7		mm
Half Angle	φ	±60		Deg
Dark Current (V_R=1 V)	I_R	5 (≤20)		pA
Spectral Sensitivity (λ=850 nm)	S_λ	0.50		A/W
Zero Crossover (E_E=0, T_A=25°C)	S_O	≥0.5		mV/pA
Quantum Yield (λ=850 nm)	η	0 73		electrons/photon
Open-Circuit Voltage (E_V=1000 lx, standard light A, T=2856 K, λ=950nm, E_E=0 5mW/cm^2)	V_O	450 (≥380)	400(≥350)	mV
Short-Circuit Current (E_V=1000 lx, standard light A, T=2856 K, λ=950nm, E_E=0 5mW/cm^2)	I_{SH}	10 (≥8)	2.5(≥2)	μA
Rise and Fall Time of Photocurrent (from 10% to 90%, or from 90% to 10% of final value) (R_L= 1 kΩ, V_B =5 V, λ=830 nm, I_P= 10 μA)	t_R, t_F	1 3		μs
Forward Voltage (I_F= 100 mA, E=0, T_A=25°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 (λ=950nm)	TC_V	-2.6	-2.6	mV/K
Temperature Coefficient of I_{SH} (λ=950nm)	TC_I	0.16	0 16	%/K
Noise Equivalent Power (V_R=1 V)	NEP	$2 5 \times 10^{-15}$		W/√Hz
Detection Limit (V_R=1 V)	D	$3 9 \times 10^{13}$		cm·√Hz/W

Relative spectral sensitivity versus wavelength



Photocurrent and open-circuit voltage versus illuminance



Directional characteristic Relative spectral sensitivity versus half angle

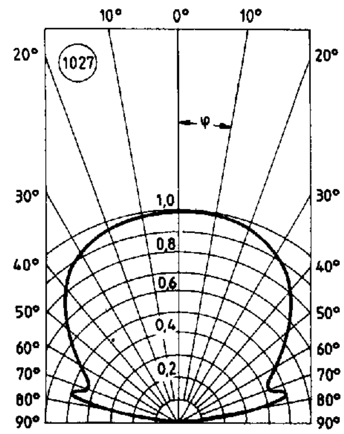
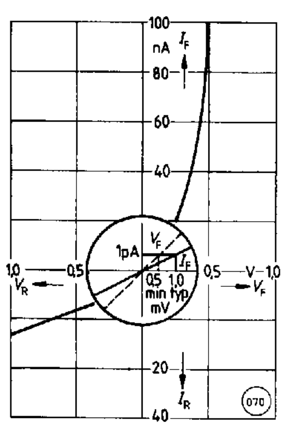
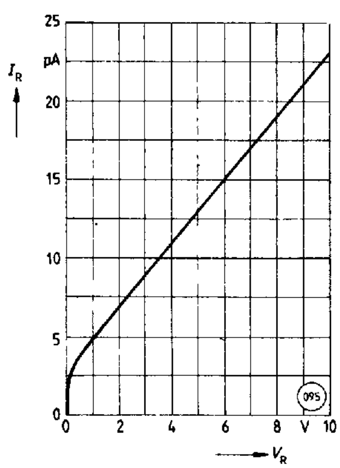


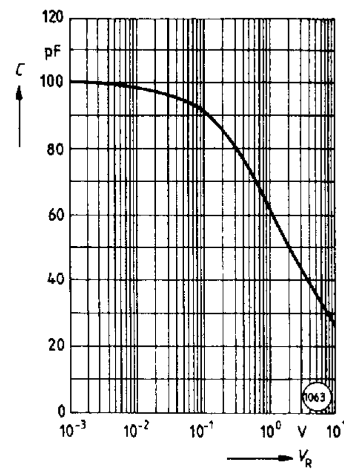
Diagram of zero crossover $S_o = \frac{V_F}{I_F}$



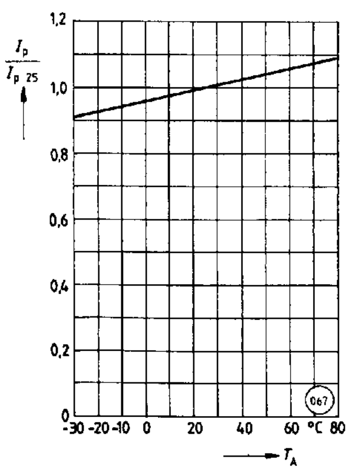
Dark current versus reverse voltage
(T_A=25°C, E_v=0)



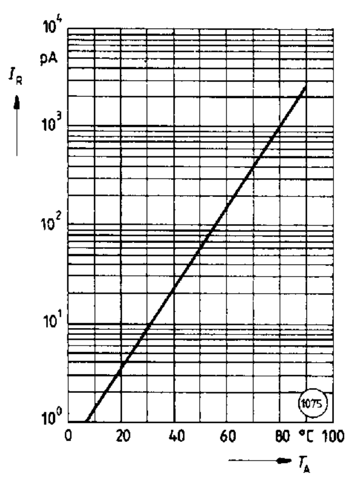
Capacitance versus reverse voltage
(E=0, f=1 MHz)



Photocurrent versus ambient temperature



Dark current versus ambient temperature
(V_R=1 V, E_v=0)



Photodiodes