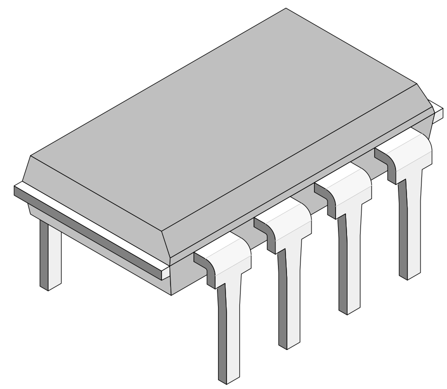
Silicon PIN Photodiode Array

Description

S268P is a silicon PIN photodiode array in a inline configuration.
Three single photodiode chips with a common cathode are mounted in a waterclear 8 pin dual in line package.
Each chip measures 3mm by 3mm and provides a radiant sensitive area of 7.5 mm^2.



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Features

- Three photodiodes with common cathode
- Fast response times
- Small junction capacitance
- High photo sensitivity
- Large radiant sensitive area (A = 3 x 7.5 mm^2)
- Wide angle of half sensitivity $\varphi = \pm 65^\circ$
- Suitable for visible and near infrared radiation

Applications

High speed and high sensitive PIN photodiode array for industrial applications, measuring and control

Absolute Maximum Ratings

T_{amb} = 25°C

Parameter	Test Conditions	Symbol	Value	Unit
Reverse Voltage		V_R	60	V
Power Dissipation	$T_{amb} \leqq 25$ °C	P_V	215	mW
Junction Temperature		T_j	100	°C
Storage Temperature Range		T_{stg}	–55...+100	°C
Soldering Temperature	t ≦ 3 s, mounted on plated, printed board	T_{sd}	260	°C
Thermal Resistance Junction/Ambient		R_{thJA}	350	K/W

Basic Characteristics (Single Diode)

T_{amb} = 25°C

Parameter	Test Conditions	Symbol	Min	Typ	Max	Unit
Breakdown Voltage	I_R = 100 µA, E = 0	$V_{(BR)}$	60			V
Reverse Dark Current	V_R = 10 V, E = 0	I_{ro}		2	30	nA
Diode Capacitance	V_R = 0 V, f = 1 MHz, E = 0	C_D		70		pF
Diode Capacitance	V_R = 3 V, f = 1 MHz, E = 0	C_D		25	40	pF
Open Circuit Voltage	E_e = 1 mW/cm^2	V_o		350		mV
Temp. Coefficient of V_o	E_e = 1 mW/cm^2	TK_{Vo}		–2.6		mV/K
Short Circuit Current	E_A = 1 klx	I_k		70		µA
Short Circuit Current	E_e = 1 mW/cm^2, λ = 950 nm	I_k		47		µA
Temp. Coefficient of I_k	E_A = 1 mW/cm^2, λ = 950 nm	TK_{Ik}		0.1		%/K
Reverse Light Current	E_A = 1 klx, V_R = 5 V	I_{ra}		75		µA
Reverse Light Current	E_e = 1 mW/cm^2, λ = 950 nm, V_R = 5 V	I_{ra}	40	50		µA
Reverse Light Current Ratio of Two Diodes					1:1.2	
Angle of Half Sensitivity		φ		±65		deg
Wavelength of Peak Sensitivity		λ_p		900		nm
Range of Spectral Bandwidth		$\lambda_{0.5}$		600...1050		nm
Noise Equivalent Power	V_R=10V, λ=950nm	NEP		4x10^{-14}		W/√ Hz
Rise Time	V_R=10V, R_L=1kΩ, λ=820nm	t_r		100		ns
Fall Time	V_R=10V, R_L=1kΩ, λ=820nm	t_f		100		ns

Typical Characteristics (T_{amb} = 25°C unless otherwise specified)

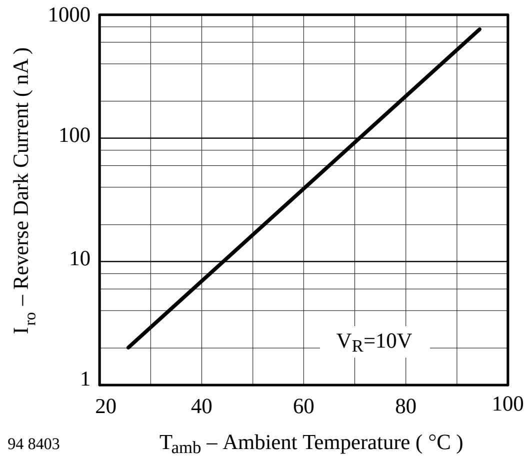


Figure 1 : Reverse Dark Current vs. Ambient Temperature

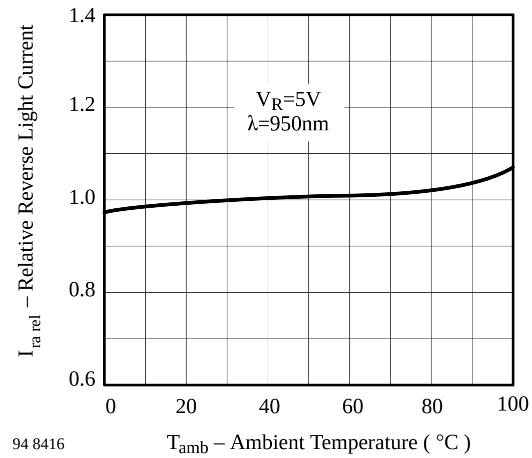


Figure 2 : Relative Reverse Light Current vs. Ambient Temperature

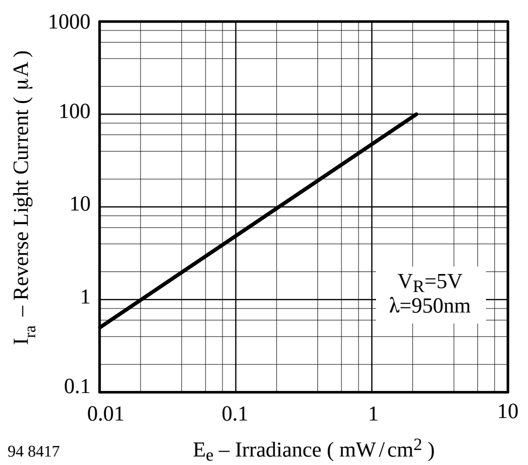


Figure 3 : Reverse Light Current vs. Irradiance

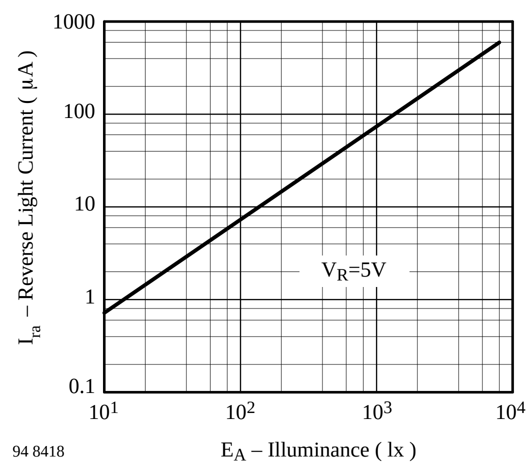


Figure 4 : Reverse Light Current vs. Illuminance

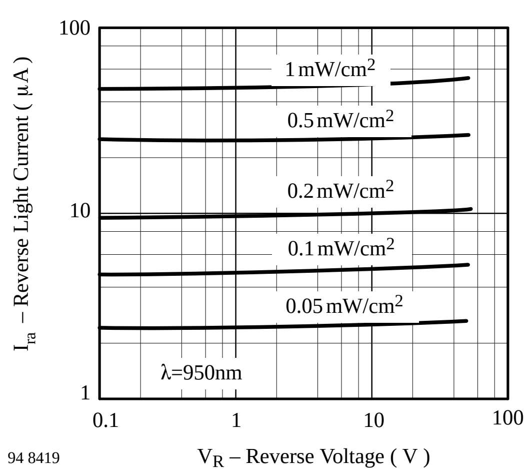


Figure 5 : Reverse Light Current vs. Reverse Voltage

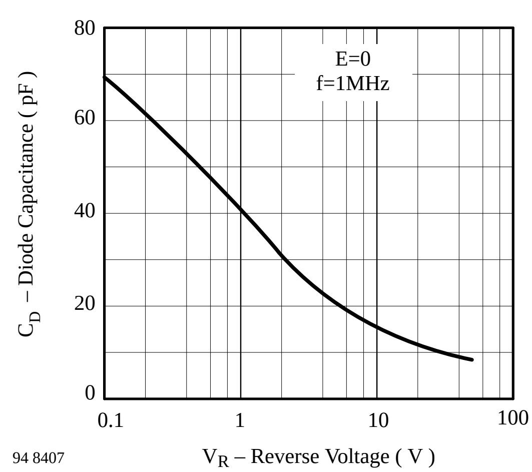


Figure 6 : Diode Capacitance vs. Reverse Voltage

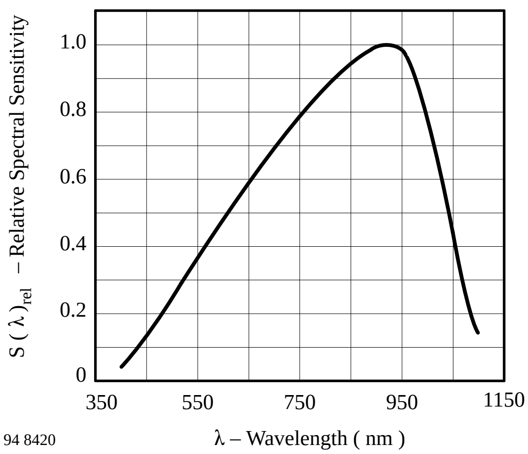


Figure 7 : Relative Spectral Sensitivity vs. Wavelength

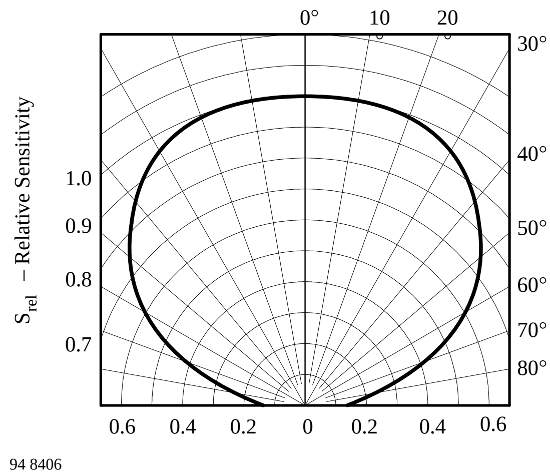
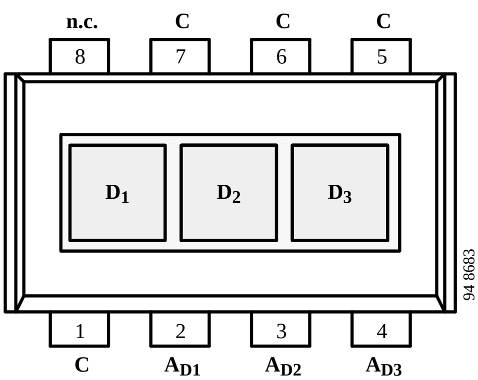
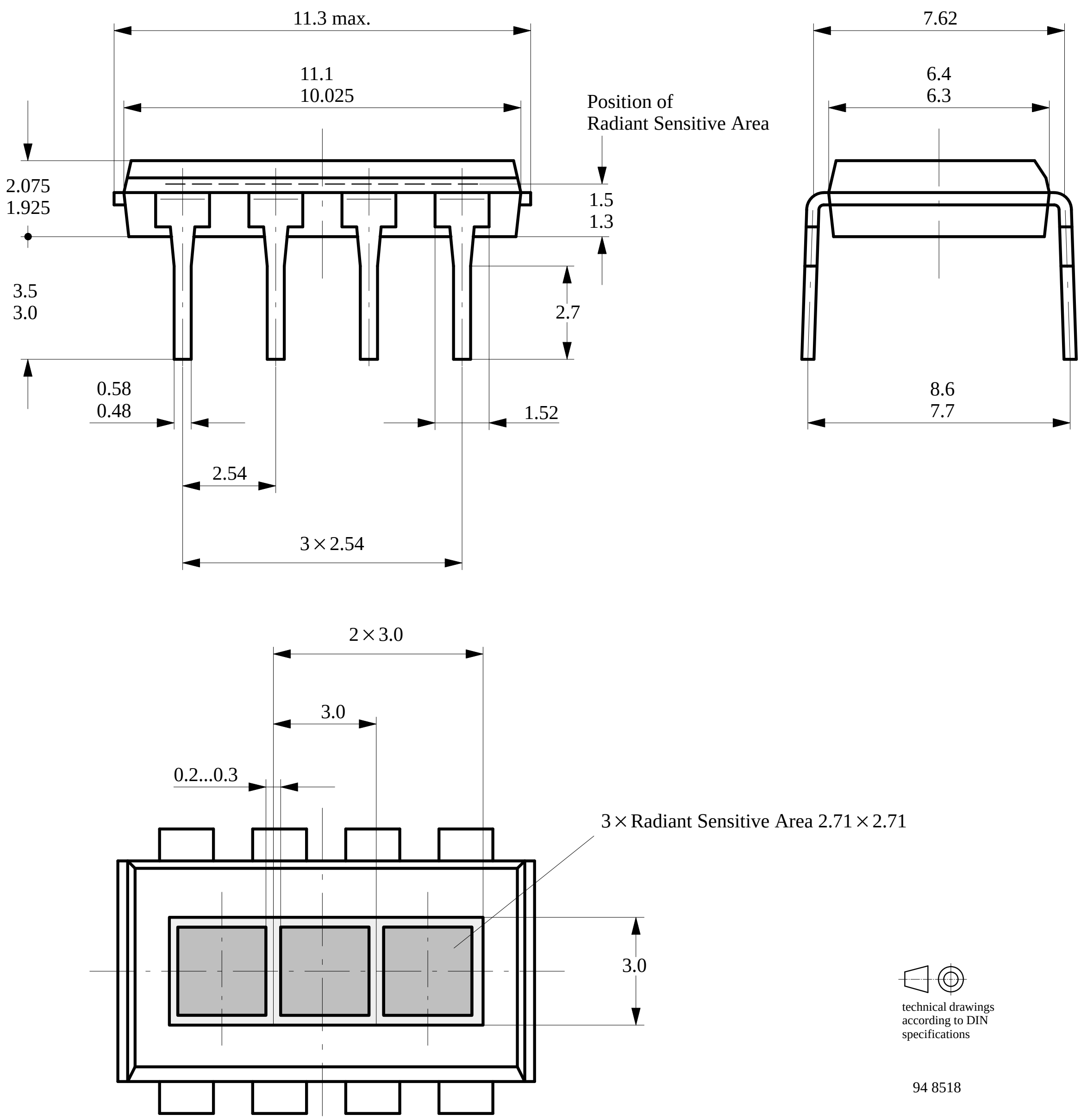


Figure 8 : Relative Radiant Sensitivity vs. Angular Displacement



Dimensions in mm



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