

Si PIN photodiode

S4349

Quadrant Si PIN photodiode



S4349 is a quadrant Si PIN photodiode having sensitivity in the UV to near IR spectral range. A quadrant element format allows position sensing such as for laser beam axis alignment.

Features

- Quadrant (2 × 2) element format
- Low cross-talk: 2 % Max.
- Wide spectral response range: 190 to 1000 nm
- High-speed response: $f_c=20$ MHz
- TO-5 metal package

Applications

- Laser beam axis alignment
- Position sensing

General ratings

Parameter	Symbol	Value	Unit
Window material	-	Quartz glass	-
Active area	A	□3.0/4 element	mm
Element gap	-	100	μm

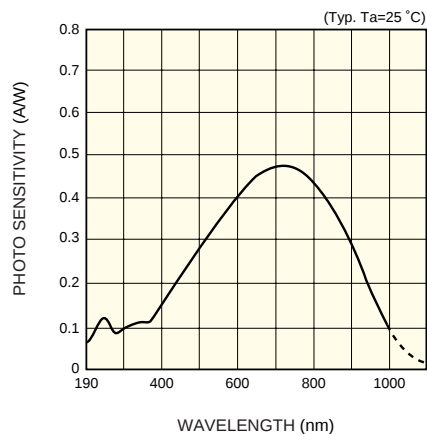
Absolute maximum ratings

Parameter	Symbol	Value	Unit
Reverse voltage	V_R Max.	20	V
Operating temperature	T_{opr}	-20 to +60	°C
Storage temperature	T_{stg}	-55 to +80	°C

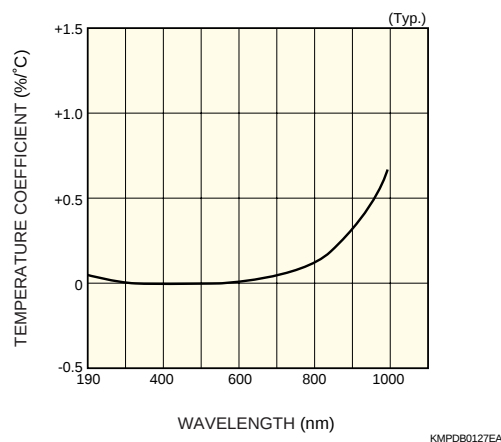
Electrical and optical characteristics ($T_a=25$ °C, per 1 element)

Parameter	Symbol	Condition	Typ.	Max.	Unit
Spectral response range	λ		190 to 1000	-	nm
Peak sensitivity wavelength	λ_p		720	-	nm
Photo sensitivity	S	$\lambda=\lambda_p$	0.45	-	A/W
Dark current	I_D	$V_R=5$ V	0.01	0.2	nA
Temperature coefficient of I_D	TC_{I_D}		1.12	-	times/°C
Cut-off frequency	f_c	$V_R=5$ V, $R_L=50$ Ω $\lambda=780$ nm, -3 dB	20	-	MHz
Terminal capacitance	C_t	$V_R=5$ V, $f=1$ MHz	25	-	pF
Noise equivalent power	NEP	$V_R=5$ V, $\lambda=\lambda_p$	4.0×10^{-15}	-	W/Hz ^{1/2}
Cross-talk	CL	$V_R=5$ V, $\lambda=780$ nm	-	2	%

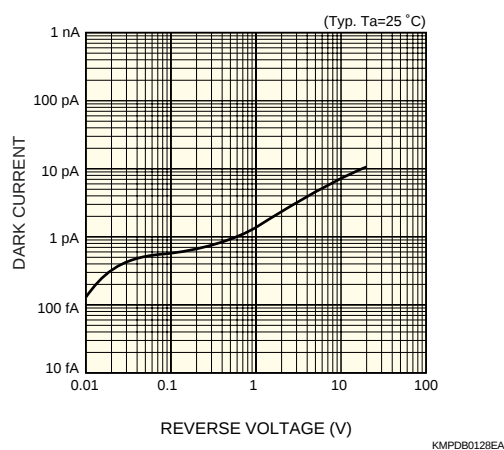
■ Spectral response



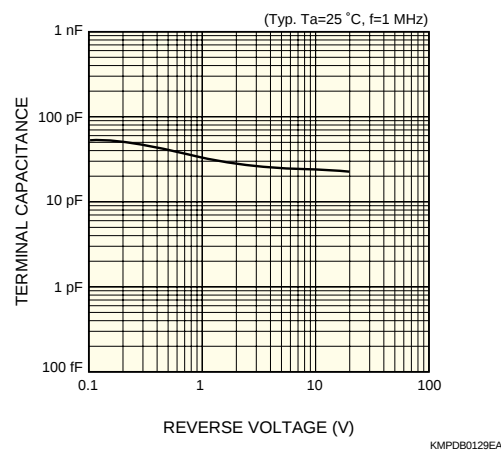
■ Photo sensitivity temperature characteristic



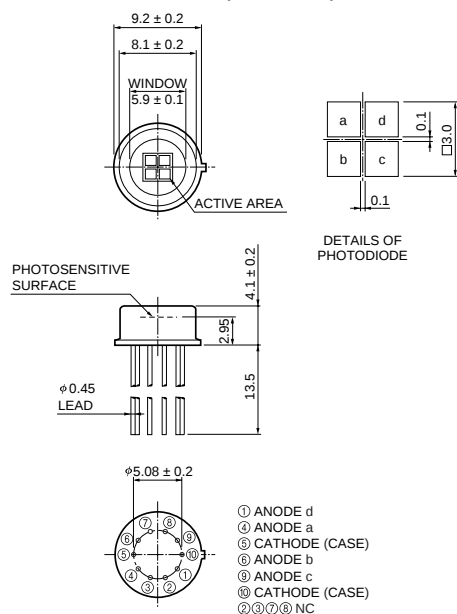
■ Dark current vs. reverse voltage



■ Terminal capacitance vs. reverse voltage



■ Dimensional outline (unit: mm)

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