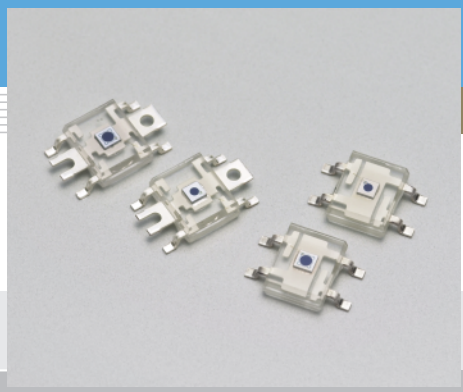


Si PIN photodiode S6431, S6432, S7481, S7482

High-speed detector with surface-mount plastic package



S6431, S6432, S7481 and S7482 are high-speed APC detectors developed for monitoring laser diodes with a peak wavelength shorter than 700 nm. All types are designed for surface mount, and S6431 and S6432 have the terminals for positioning easily.

Features

- High-speed response at low reverse voltage
S6431, S7481 ($\phi 0.8$ mm) : 500 MHz Typ. ($V_R=2.5$ V)
S6432, S7482 ($\phi 0.6$ mm) : 600 MHz Typ. ($V_R=2.5$ V)
- S6431, S6432: Clear plastic package with wire connection terminals (4×4.8 mm)
- High sensitivity: 0.48 A/W Typ. ($\lambda=660$ nm)

Applications

- Laser diode monitor of optical disk unit (high-speed APC)
- Sensor for red laser diode

General ratings / Absolute maximum ratings

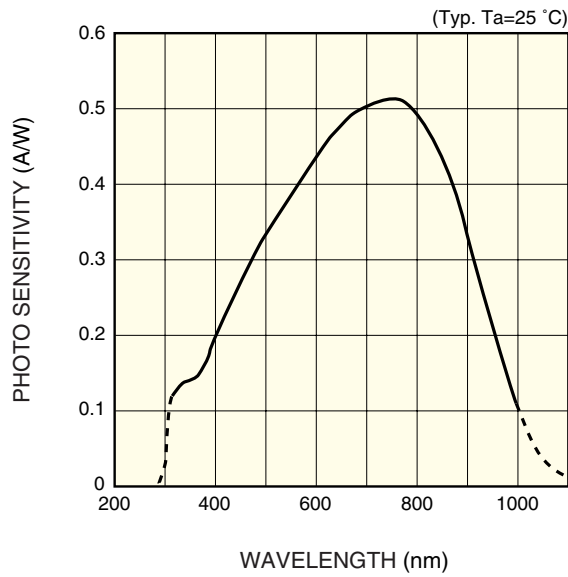
Type No.	Dimensional outline	Package	Active area size (mm)	Effective active area (mm ²)	Absolute maximum ratings			
					Reverse voltage V _R Max. (V)	Power dissipation P (mV)	Operating temperature T _{opr} (°C)	Storage temperature T _{stg} (°C)
S6431	①	Plastic	φ0.8	0.5	20	50	-25 to +85	-40 to +100
S6432			φ0.6	0.28				
S7481	②		φ0.8	0.5				
S7482			φ0.6	0.28				

Electrical and optical characteristics

Type No.	Spectral response range λ	Peak sensitivity wavelength λ_p	Photo sensitivity S (A/W)				Short circuit current I_{sc} 100 lx	Dark current ID VR=2.5 V		Temp. coefficient of ID TCID	Cut-off frequency fc VR=2.5 V RL=50 Ω		Terminal capacitance Ct VR=2.5 V f=1 MHz		NEP VR=2.5 V (W/Hz ^{1/2})
			λ_p	660 nm	780 nm	830 nm		Typ.	Max.		Min.	Typ.	Typ.	Max.	
	(nm)	(nm)					(μ A)	(nA)	(nA)	(times ^o C)	(MHz)	(MHz)	(pF)	(pF)	
S6431	320 to 1000	760	0.5	0.48	0.5	0.45	0.48	0.01	0.3	1.15	300	500	6	12	3.6 × 10 ⁻¹⁵
S6432							0.25				400	600	3	6	
S7481							0.48				300	500	6	12	
S7482							0.25				400	600	3	6	

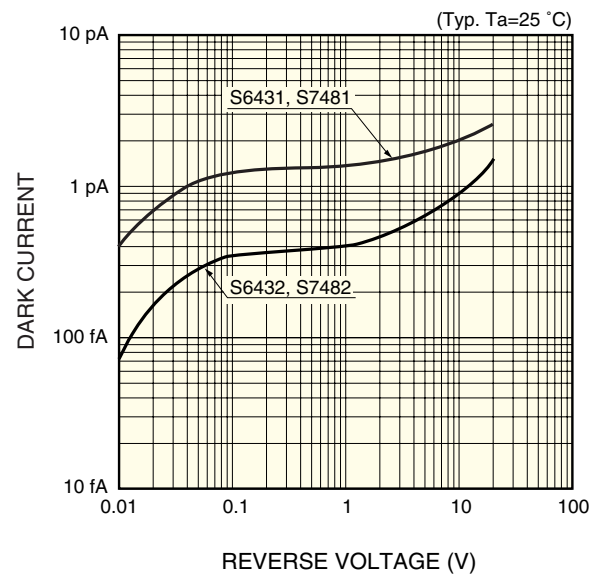
*1: $\lambda=680$ nm

■ Spectral response



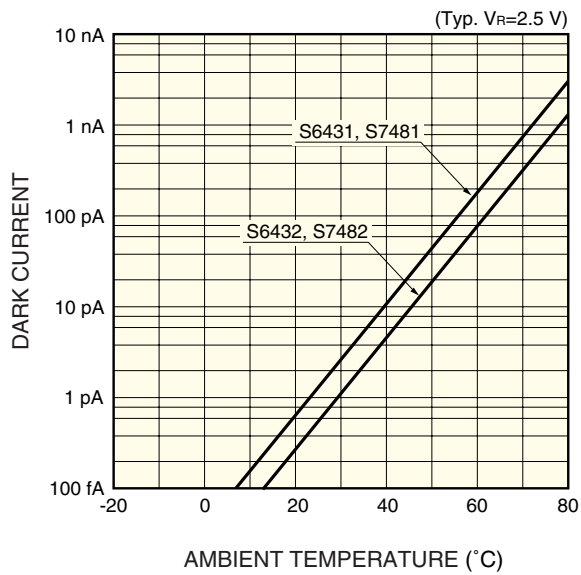
KPINB0171EA

■ Dark current vs. reverse voltage



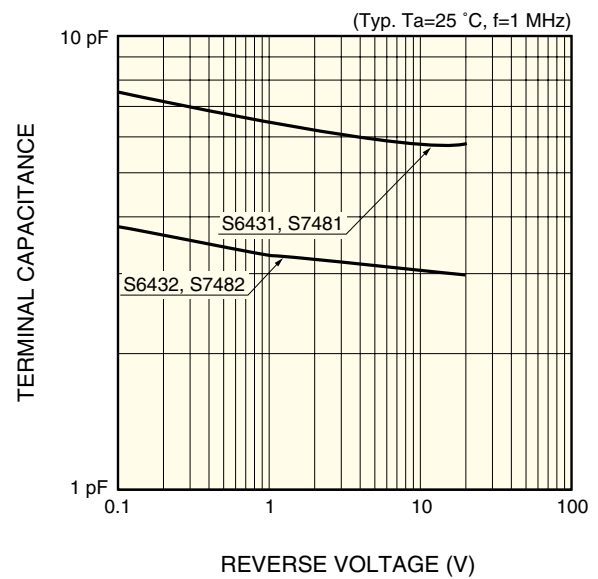
KPINB0172EA

■ Dark current temperature characteristics



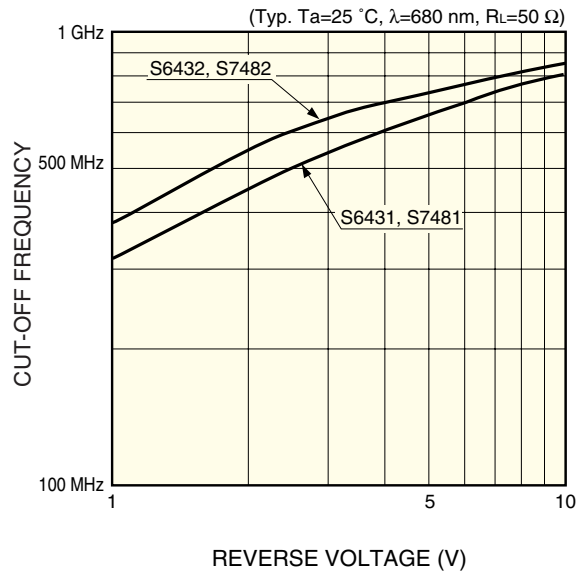
KPINB0173EA

■ Terminal capacitance vs. reverse voltage



KPINB0174EA

■ Cut-off frequency vs. reverse voltage



KPINB0175EA

