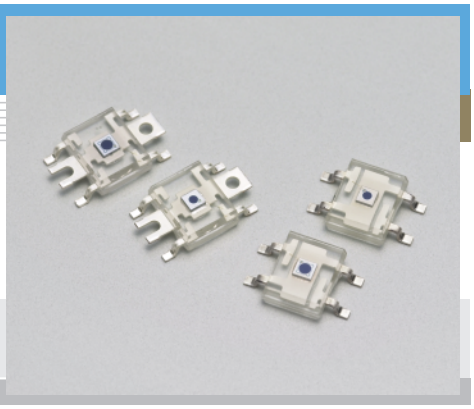

Si PIN photodiode
S6431, S6432, S7481, S7482

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 (ϕ0.8 mm) : 500 MHz Typ. (V_R=2.5 V)
  S6432, S7482 (ϕ0.6 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. (λ=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 Topr (°C)	Storage temperature Tstg (°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 (nm)	Peak sensitivity wavelength λp (nm)	Photo sensitivity S (A/W): λp	660 nm	780 nm	830 nm	Short circuit current Isc 100 lx (μA)	Dark current I_D V_R=2.5 V: Typ. (nA)	Max. (nA)	Temp. coefficient of I_D T_{CID} (times/°C)	Cut-off frequency fc V_R=2.5 V R_L=50 Ω: Min. (MHz)	Typ. (MHz)	Terminal capacitance Ct V_R=2.5 V f=1 MHz: Typ. (pF)	Max. (pF)	NEP V_R=2.5 V (W/$Hz^{1/2}$)
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: λ=680 nm

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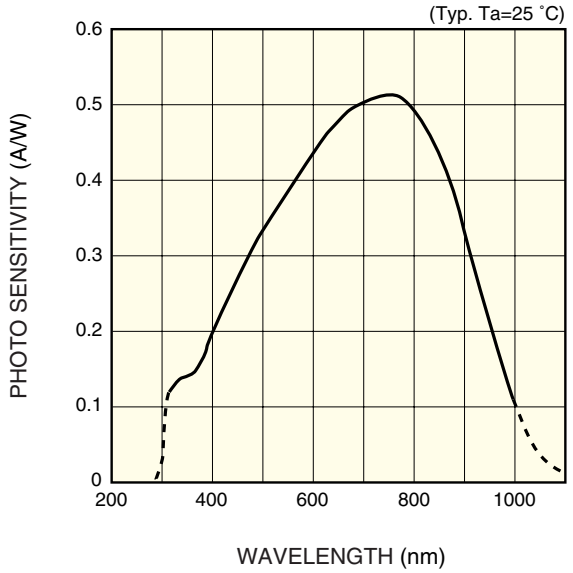
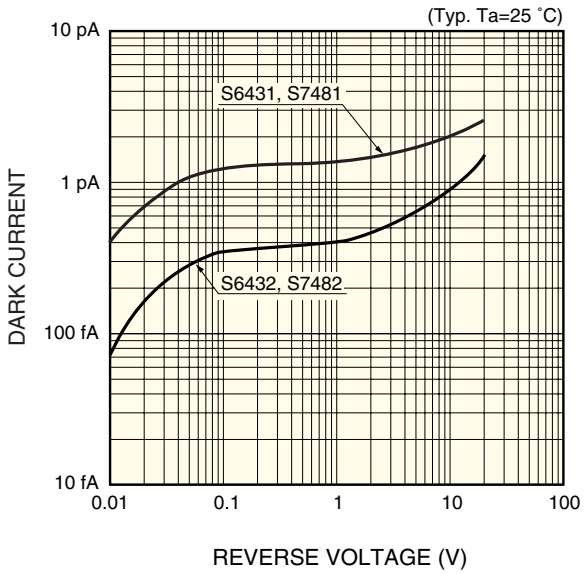
■ Spectral response



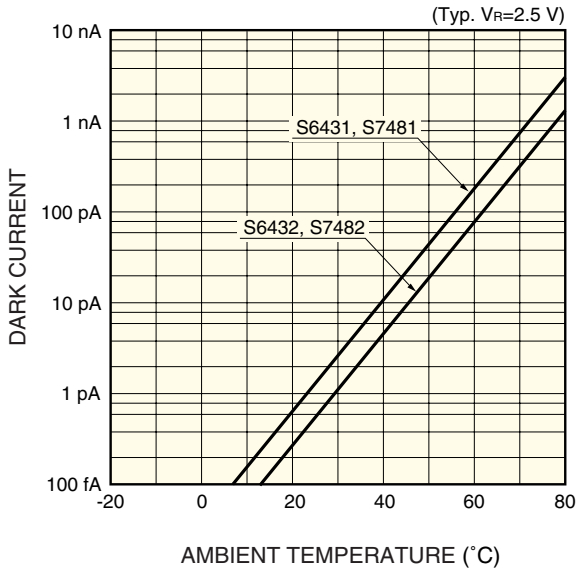
KPINB0171EA

■ Dark current vs. reverse voltage



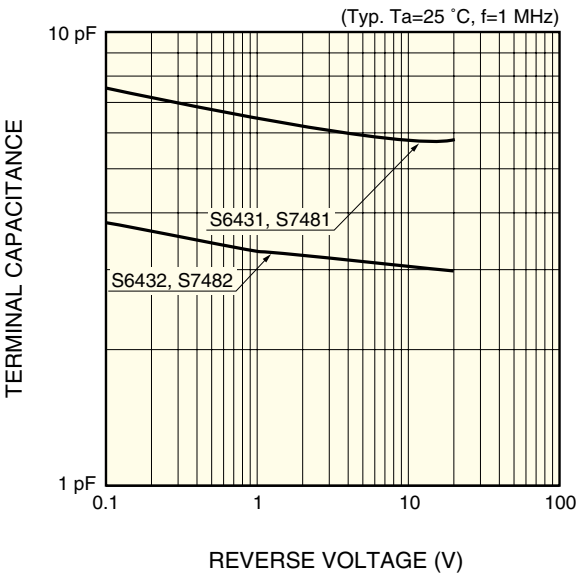
KPINB0172EA

■ Dark current temperature characteristics



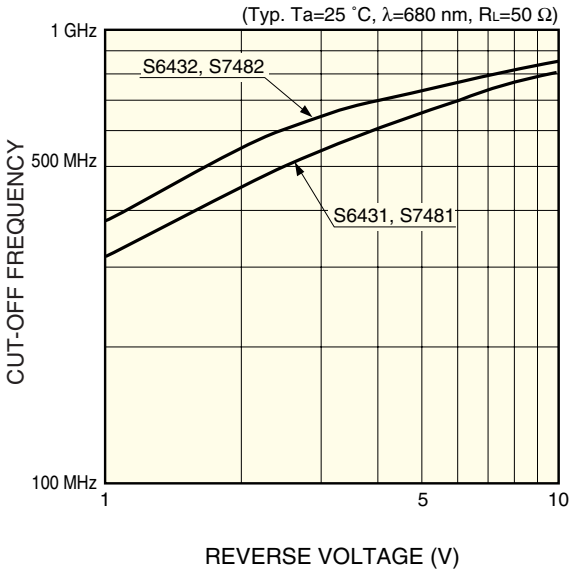
KPINB0173EA

■ Terminal capacitance vs. reverse voltage



KPINB0174EA

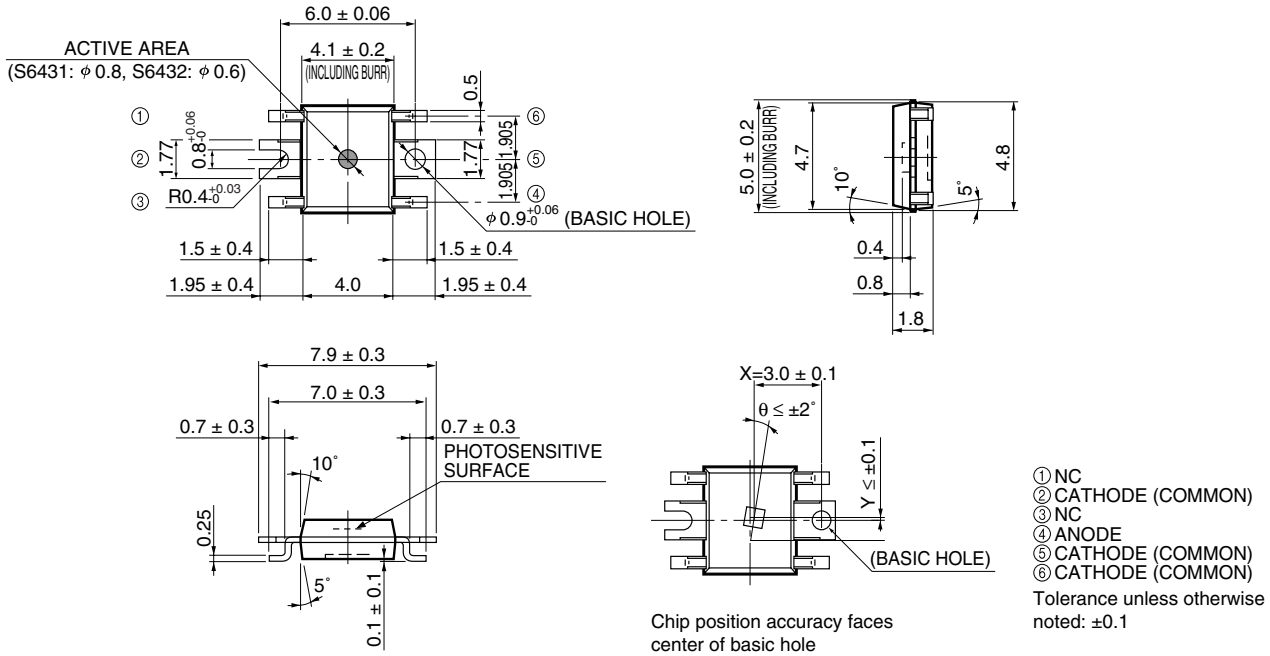
■ Cut-off frequency vs. reverse voltage



KPINB0175EA

■ Dimensional outline (unit: mm)

① S6431, S6432



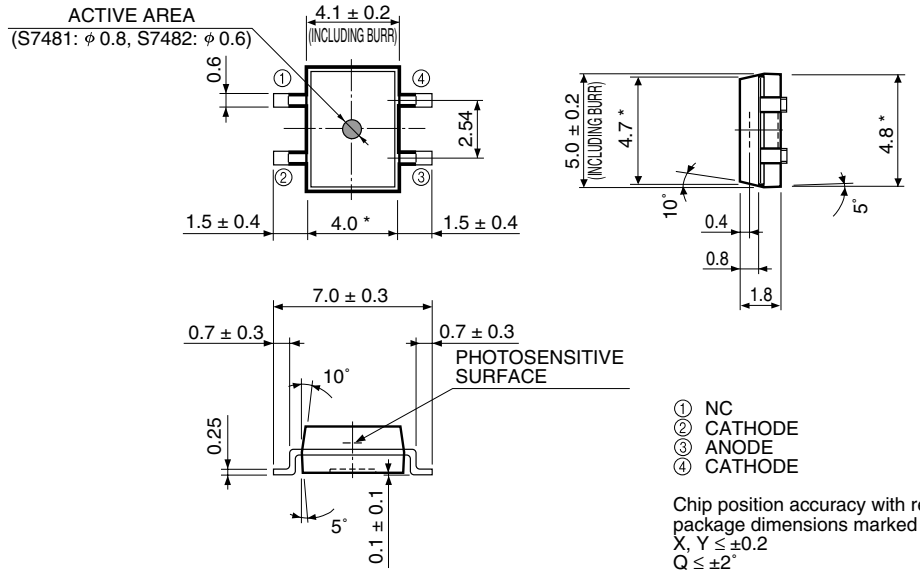
Chip position accuracy faces center of basic hole

① NC
② CATHODE (COMMON)
③ NC
④ ANODE
⑤ CATHODE (COMMON)
⑥ CATHODE (COMMON)

Tolerance unless otherwise noted: ±0.1

KPINA0038EA

② S7481, S7482



① NC
② CATHODE
③ ANODE
④ CATHODE

Chip position accuracy with respect to the package dimensions marked *
X, Y ≤ ±0.2
Q ≤ ±2°

Tolerance unless otherwise noted: ±0.1

KPINA0053EA

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Cat. No. KPIN1018E02
Apr. 2001 DN