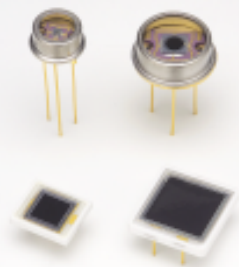


Si APD

S8664 series

Short wavelength type APD



Features

- High sensitivity at visible range
- Low noise
- High gain
- Low capacitance

Applications

- Low-light-level measurement
- Analytical equipment

General ratings / Absolute maximum ratings

| Type No. | Dimensional outline / Window material *1 | Package | Effective *2 active area size (mm) | Effective active area (mm ²) | Absolute maximum ratings | | |
|------------|--|---------|------------------------------------|--|---------------------------------|-------------------------------|------------|
| | | | | | Operating temperature Topr (°C) | Storage temperature Tstg (°C) | |
| S8664-02K | ①/K | TO-5 | φ0.2 | 0.03 | -20 to +60 | -55 to +100 | |
| S8664-05K | | | φ0.5 | 0.19 | | | |
| S8664-10K | | | φ1.0 | 0.78 | | | |
| S8664-20K | | | φ2.0 | 3.14 | | | |
| S8664-30K | ②/K | TO-8 | φ3.0 | 7.0 | | | |
| S8664-50K | | | φ5.0 | 19.6 | | | |
| S8664-55 | ③/E | Ceramic | 5 × 5 | 25 | | | -20 to +80 |
| S8664-1010 | ④/E | | 10 × 10 | 100 | | | |

Electrical and optical characteristics (Typ. Ta=25 °C, unless otherwise noted)

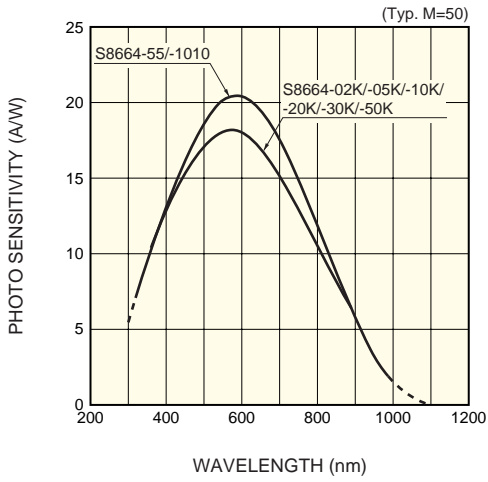
| Type No. | Spectral response range λ (nm) | Peak *3 sensitivity wavelength λp (nm) | Photo sensitivity S M=1 λ=420 nm (A/W) | Quantum efficiency QE M=1 λ=420 nm (%) | Breakdown voltage VBR Id=100 μA | | Temperature coefficient of VBR (V/°C) | Dark *3 current Id | | Cut-off frequency fc (MHz) | Terminal *3 capacitance Ct (pF) | Excess *3 Noise index λ=420 nm | Gain M λ=420 nm |
|------------|--------------------------------|--|--|--|---------------------------------|----------|---------------------------------------|--------------------|-----------|----------------------------|---------------------------------|--------------------------------|-----------------|
| | | | | | Typ. (V) | Max. (V) | | Typ. (nA) | Max. (nA) | | | | |
| S8664-02K | 320 to 1000 | 600 | 0.24 | 70 | 400 | 500 | 0.78 | 0.1 | 1 | 700 | 0.8 | 0.2 | 50 |
| S8664-05K | | | | | | | | 0.2 | 1.5 | 680 | 1.6 | | |
| S8664-10K | | | | | | | | 0.3 | 3 | 530 | 4 | | |
| S8664-20K | | | | | | | | 0.6 | 6 | 280 | 11 | | |
| S8664-30K | | | | | | | | 1 | 15 | 140 | 22 | | |
| S8664-50K | | | | | | | | 3 | 35 | 60 | 55 | | |
| S8664-55 | | | | | | | | 5 | 50 | 40 | 80 | | |
| S8664-1010 | | | | | | | | 10 | 100 | 11 | 270 | | |

*1: K: Borosilicate glass E: Epoxy resin

*2: Area in which a typical gain can be obtained.

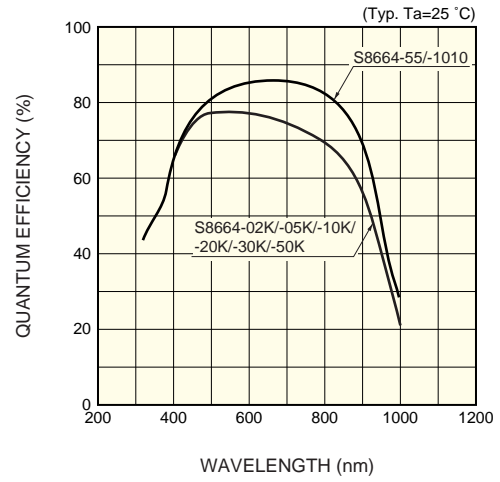
*3: Values measured at a gain listed in the characteristics table.

■ Spectral response



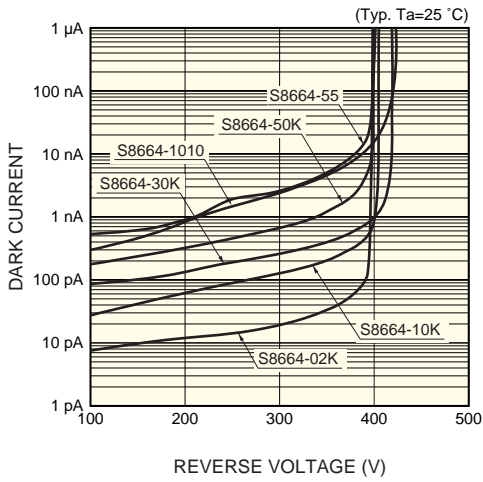
KAPDB0073EB

■ Quantum efficiency vs. wavelength



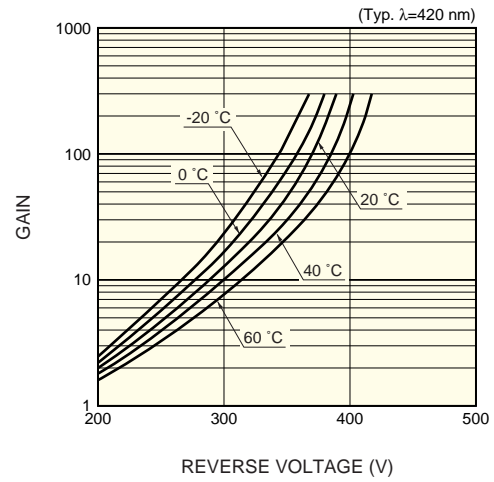
KAPDB0074EB

■ Dark current vs. reverse voltage



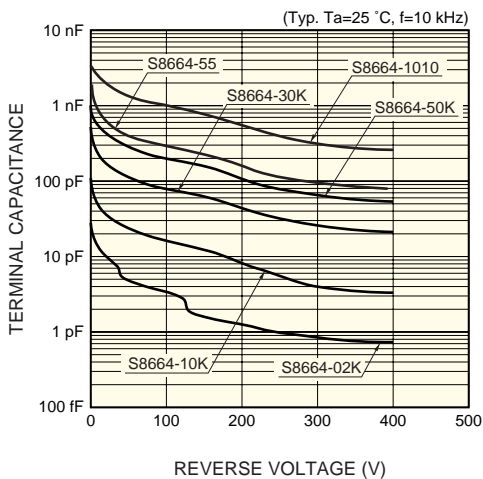
KAPDB0075EB

■ Gain vs. reverse voltage



KAPDB0076EB

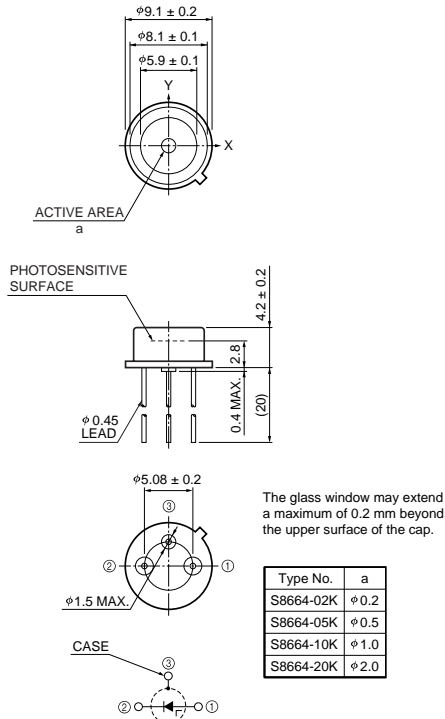
■ Terminal capacitance vs. reverse voltage



KAPDB0077EB

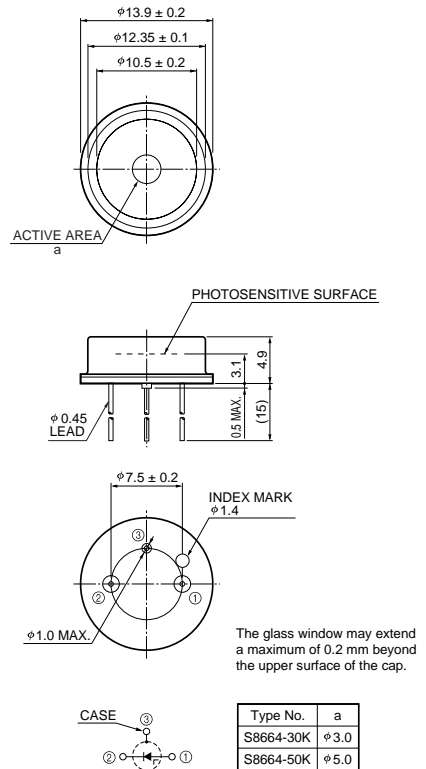
Dimensional outlines (unit: mm)

① S8664-02K/-05K/-10K/-20K



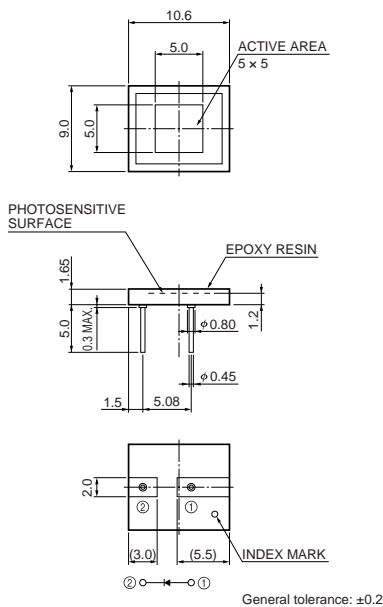
KAPDA0028EA

② S8664-30K/-50K



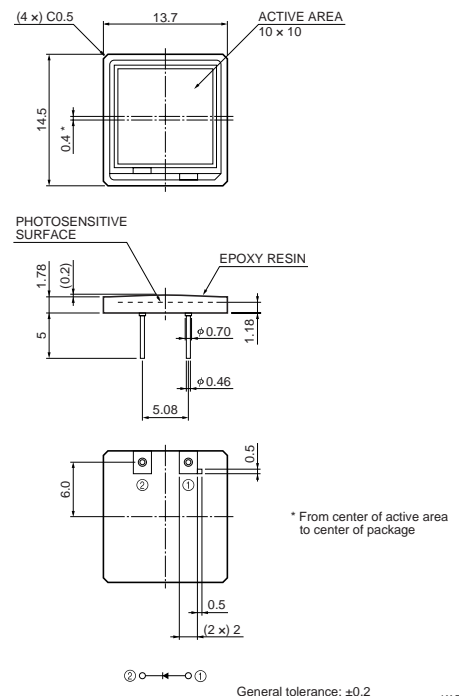
KAPDA0027EA

③ S8664-55



KAPDA0022EA

④ S8664-1010



KAPDA0038EA