

## PHOTODIODE

Si photodiode  
**S2281 series**

## Si photodiode with BNC connector



S2281 series is Si photodiodes sealed in a metal package with a BNC connector. This configuration allows easy connection to Hamamatsu C9329 photosensor amplifier (S2281-01 has a large terminal capacitance which may cause a gain peaking to occur when C9329 is used with the gain set to the "M" range.). Two different spectral response characteristics are provided and the large active area makes S2281 series well suited for optical power meters. A variant type S9219 with a visual compensation filter is also available. Hamamatsu also provides E2573 BNC-BNC coaxial cable (length: 1 m) as an option.

## Features

- Metal package with BNC connector
- High sensitivity
- High reliability

## Applications

- Analytical instruments
- Optical measurement equipment

## General ratings

| Parameter        | S2281                            | S2281-01 | S2281-04 | Unit            |
|------------------|----------------------------------|----------|----------|-----------------|
| Active area size | φ11.3                            | φ11.3    | φ7.98    | mm              |
| Active area      | 100                              | 100      | 50       | mm <sup>2</sup> |
| Package          | Metal package with BNC connector |          |          | -               |
| Window material  | Quartz glass                     |          |          | -               |

## Absolute maximum ratings

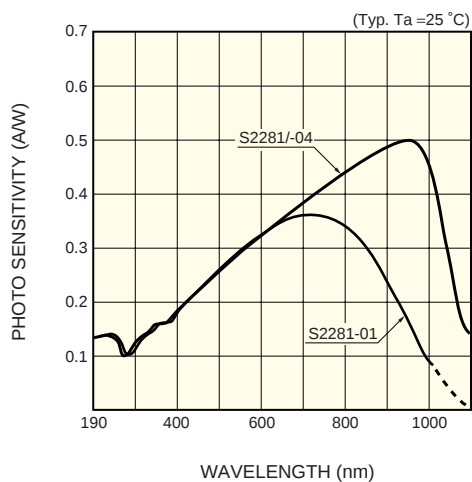
| Parameter             | Symbol  | S2281      | S2281-01 | S2281-04 | Unit |
|-----------------------|---------|------------|----------|----------|------|
| Reverse voltage       | VR Max. | 5          |          |          | V    |
| Operating temperature | Topr    | -10 to +60 |          |          | °C   |
| Storage temperature   | Tstg    | -20 to +70 |          |          | °C   |

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

| Parameter                   | Symbol | Condition          | S2281 |                       |      | S2281-01 |                       |      | S2281-04 |                       |      | Unit                |
|-----------------------------|--------|--------------------|-------|-----------------------|------|----------|-----------------------|------|----------|-----------------------|------|---------------------|
|                             |        |                    | Min.  | Typ.                  | Max. | Min.     | Typ.                  | Max. | Min.     | Typ.                  | Max. |                     |
| Spectral response range     | λ      |                    | -     | 190 to 1100           | -    | -        | 190 to 1000           | -    | -        | 190 to 1100           | -    | nm                  |
| Peak sensitivity wavelength | λp     |                    | -     | 960                   | -    | -        | 720                   | -    | -        | 960                   | -    | nm                  |
| Photo sensitivity           | S      | λ=200 nm           | 0.10  | 0.12                  | -    | 0.10     | 0.12                  | -    | 0.10     | 0.12                  | -    | A/W                 |
|                             |        | λ=λp               | -     | 0.5                   | -    | -        | 0.36                  | -    | -        | 0.5                   | -    |                     |
| Short circuit current       | Isc    | 100 lx             | 64    | 80                    | -    | 32       | 40                    | -    | 32       | 40                    | -    | μA                  |
| Dark current                | ID     | VR=10 mV           | -     | 50                    | 500  | -        | 6                     | 300  | -        | 50                    | 500  | pA                  |
| Shunt resistance            | Rsh    | VR=10 mV           | 20    | 200                   | -    | 30       | 1700                  | -    | 20       | 200                   | -    | MΩ                  |
| Rise time                   | tr     | VR=0 V<br>RL=1 kΩ  | -     | 3                     | -    | -        | 7                     | -    | -        | 3                     | -    | μs                  |
| Terminal capacitance        | Ct     | VR=0 V<br>f=10 kHz | -     | 1300                  | -    | -        | 3200                  | -    | -        | 1300                  | -    | pF                  |
| Noise equivalent power      | NEP    | VR=0 V, λ=λp       | -     | 1.8×10 <sup>-14</sup> | -    | -        | 8.6×10 <sup>-15</sup> | -    | -        | 1.8×10 <sup>-14</sup> | -    | W/Hz <sup>1/2</sup> |

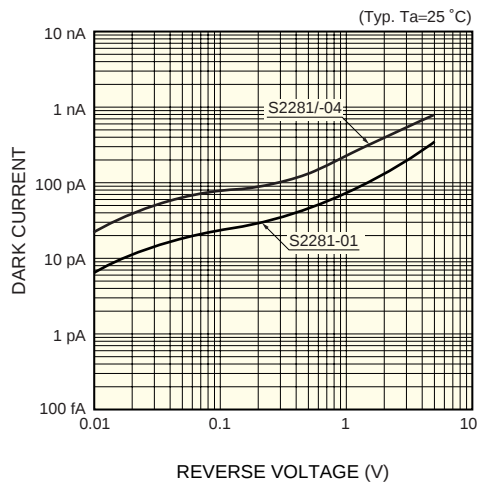
## Si photodiode S2281 series

### ■ Spectral response



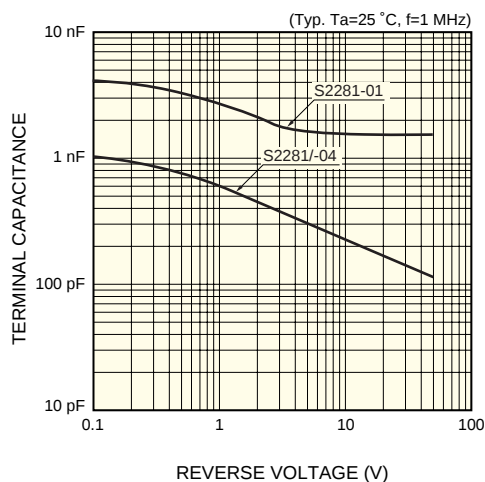
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### ■ Dark current vs. reverse voltage



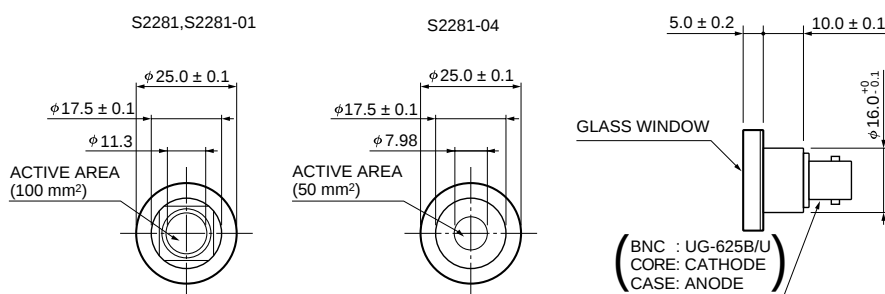
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### ■ Terminal capacitance vs. reverse voltage



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### ■ Dimensional outlines (unit: mm)



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