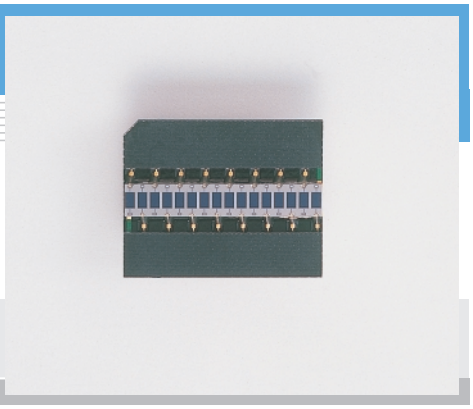
# 16-element Si photodiode array
# S5668 series



## Photodiode array ideal for light detection in a long, narrow area

S5668 series is a 16-element Si photodiode linear array. Each element has an active area of 1.175 mm (width) × 2.0 mm (height) and is arrayed at an element pitch of 1.575 mm. The entire linear array is mounted on a 25.4 mm (1 inch) long PC board. By linearly arranging two or more pieces of S5668 series, a long and narrow photodiode array can be easily configured at the same element pitch. For X-ray detection applications, S5668-11 with a CsI (Tl) scintillator and S5668-34 with a ceramic scintillator are also available.

### Features

- Active area: 1.175 × 2.0 mm per element
- Element pitch: 1.575 mm
- Mounted on a 1-inch (25.4 mm) long PC board
- Long and narrow format by multiple arrays
- High-speed response (S5668-02)
- Low capacitance (S5668-05)

### Applications

- X-ray baggage inspection
- Multichannel spectrophotometry
- Optical position detection

■ Absolute maximum ratings

| Parameter | Symbol | Value | Unit |
|---|---|---|---|
| Reverse voltage | $V_R$ Max. | 10 | V |
| Operating temperature | Topr | -20 to +60 | °C |
| Storage temperature | Tstg | -20 to +80 | °C |

■ Electrical and optical characteristics (Ta=25 °C, per 1 element)

| Parameter | Symbol | Condition | S5668-01 | | S5668-02 | | S5668-05 | | Unit |
|---|---|---|---|---|---|---|---|---|---|
| | | | Typ. | Max. | Typ. | Max. | Typ. | Max. | |
| Spectral response range | λ | | 320 to 1100 | - | 320 to 1100 | - | 320 to 1060 | - | nm |
| Peak sensitivity wavelength | λp | | 960 | - | 960 | - | 920 | - | nm |
| Photo sensitivity | S | λ=540 nm | 0.31 | - | 0.31 | - | 0.31 | - | A/W |
| | | λ=λp | 0.56 | - | 0.58 | - | 0.56 | - | |
| Dark current | $I_D$ | $V_R$=10 mV | 1 | 10 | 5 | 30 | 10 | 50 | pA |
| Rise time | tr | $V_R$=0 V<br>$R_L$=1 kΩ<br>10 to 90 % | 0.7 | - | 0.1 | - | 0.1 | - | μs |
| Terminal capacitance | Ct | $V_R$=0 V<br>f=10 kHz | 300 | 550 | 30 | 40 | 20 | 30 | pF |
| Noise equivalent power | NEP | $V_R$=0 V<br>λ=540 nm | $4.1 \times 10^{-15}$ | - | $9.3 \times 10^{-15}$ | - | $1.3 \times 10^{-14}$ | - | $W/Hz^{1/2}$ |

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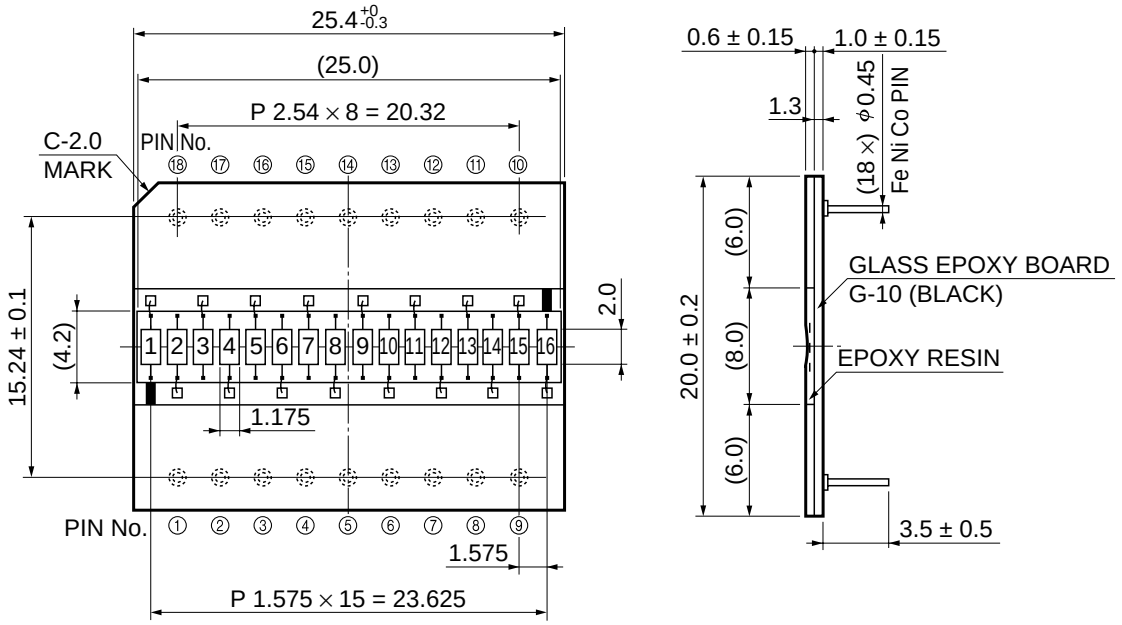
■ Dimensional outline (unit: mm)




| | |
|---|---|
| ① | CATHODE COMMON |
| ② | ANODE 2 |
| ③ | ANODE 4 |
| ④ | ANODE 6 |
| ⑤ | ANODE 8 |
| ⑥ | ANODE 10 |
| ⑦ | ANODE 12 |
| ⑧ | ANODE 14 |
| ⑨ | ANODE 16 |
| ⑩ | CATHODE COMMON |
| ⑪ | ANODE 15 |
| ⑫ | ANODE 13 |
| ⑬ | ANODE 11 |
| ⑭ | ANODE 9 |
| ⑮ | ANODE 7 |
| ⑯ | ANODE 5 |
| ⑰ | ANODE 3 |
| ⑱ | ANODE 1 |

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