

Features

- Bondable electrodes for COB mounting
- Very high sensitivity
- High durability for rugged operation

Applications

- Gas analysis
- Spectroscopy
- Process control
- Temperature control

Specification

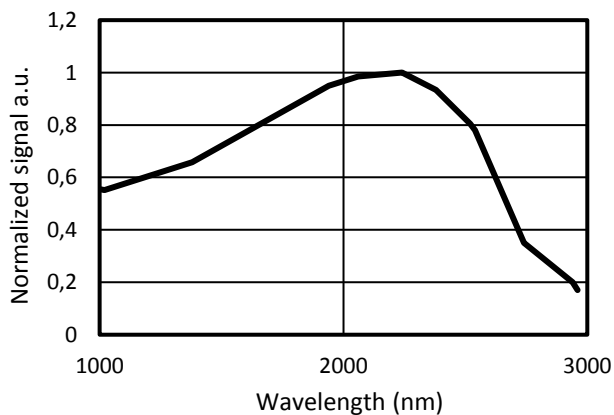
| Type No. | Package | Active area [mm x mm] | Operating temperature [°C] | Storage temperature [°C] |
|-------------|-------------------------------------|-----------------------|----------------------------|--------------------------|
| PbS100100BC | Bare chip / thin film encapsulation | 10 x 10 | -30 to +70 | -55 to +70 |

Electrical and optical characteristics

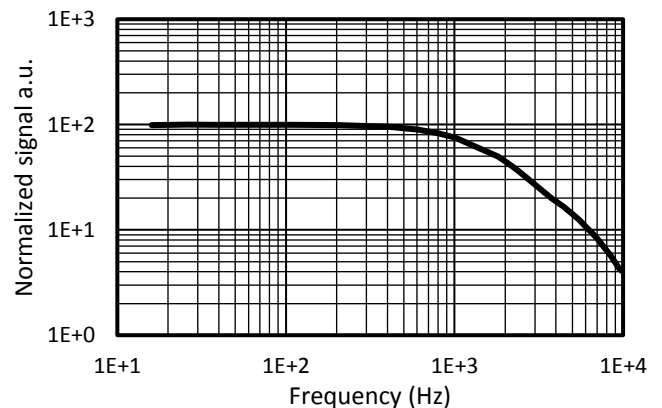
| Type No. | Element temperature [°C] | Peak wavelength λ_p [μm] | 20% cut-off wavelength λ_c [μm] | Peak responsivity S [V/W] | | Peak D* (606 Hz, 1 Hz) [$\text{cm}\cdot\text{Hz}^{1/2}/\text{W}$] | | Time constant [μs] | Dark resistance R_D [M Ω] |
|-------------|--------------------------|---|--|---------------------------|------------------|---|-------------------|---------------------------------|-------------------------------------|
| | | | | Typ. | Min. | Typ. | Min. | | |
| PbS100100BC | 26 | 2.2 | 2.9 | $6.0 \cdot 10^4$ | $4.0 \cdot 10^4$ | $1.0 \cdot 10^{11}$ | $5 \cdot 10^{10}$ | 200 | 0.3 – 3 |

- Measured with 1550 nm LED, incident power 22 $\mu\text{W}/\text{cm}^2$
- Measured in a voltage divider circuit with 10 V/mm and linearly extrapolated to 50 V/mm
- Photo responsivity and detectivity are measured with matched load resistance ($R_L = R_D$)
- Without filter or window

Typical Spectral response



Typical Frequency response



Storage

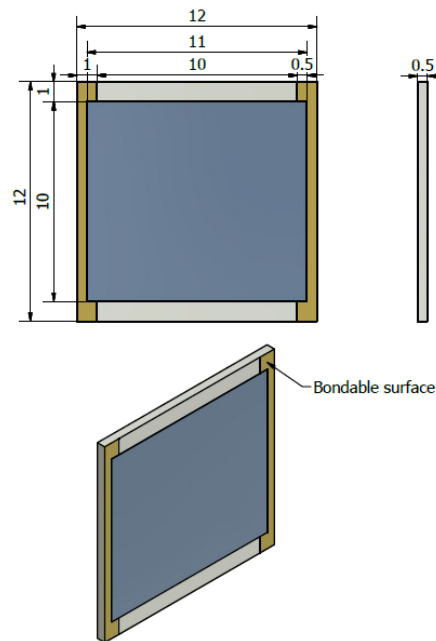
- Storage temperature: -55°C to 70°C
- Exposure to UV light results in permanent damage
- Prolonged exposure to visible light results in low dark resistance

Handling

- Active area is scratch sensitive, protect top surface from any mechanical contact
- Ensure dust-free environment for device handling

Mechanical outline (dimensions in mm)

PbS100100BC



Die attach

- Use clean, soft rubber tip for pick-and place handling
- UV-curing is not suitable due to permanent damage by UV light exposure
- Element temperature should never exceed 70°C

Wire bonding

- Electrodes are optimized for room temperature Al-wire bonding
- Element temperature should never exceed 70°C