



## PbSe near-infrared detector Single-Pixel thin-film encapsulated



### Features

- **Bare Chip**
- 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]
PbSe020020BC	Bare Chip	2 x 2	-30 to +90	-55 to +90

### Electrical and optical characteristics

Type No.	Element temperature [°C]	Peak wave-length $\lambda_p$ [ $\mu\text{m}$ ]	20% cut-off wavelength $\lambda_c$ [ $\mu\text{m}$ ]	Peak responsivity S [V/W]	Peak D* (606 Hz, 1 Hz) [ $\text{cm}\cdot\text{Hz}^{1/2}/\text{W}$ ]	Time Constant [ $\mu\text{s}$ ]	Dark resistance $R_D$ [M $\Omega$ ]
				Min.	Min.	Typ.*	
PbSe020020BC	22	3.8	4.5	$1 \cdot 10^4$	$2 \cdot 10^9$	4	0.1 - 3

- Measured with 500K blackbody
- Measured in a voltage divider circuit with 50 V/mm
- Photo responsivity and detectivity are measured with constant load resistance ( $R_L = 1 \text{ M}\Omega$ ) and calculated for matched resistance

\* Not 100% tested

### Storage

- Storage temperature: -55°C to 90°C

### Handling

- Active area is scratch sensitive, protect top surface from any mechanical contact
- Ensure dust-free environment for device handling
- Operating temperature: -55°C to 90°C

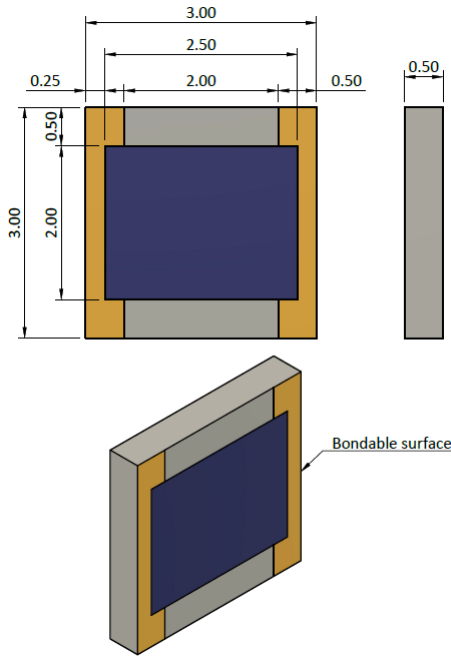
### Die attach

- Use clean, soft rubber tip for pick and place handling
- Element temperature should never exceed 90°C

### Wire-bonding

- Electrodes are optimized for room temperature Al-wire-bonding
- Element temperature should never exceed 90°C

Infrared detector  
PbSe photoconductive detector  
Double encapsulated TO-package  
Mechanical outline



Preliminary