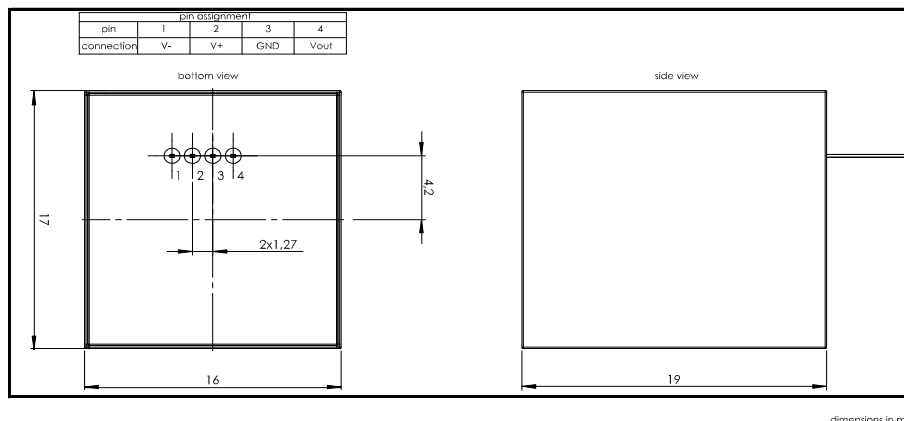




### Features

- 2-stage charge amplifier, filter amplifier and comparator
- 100 mm<sup>2</sup> PIN detector with 8 mm CsI:TI scintillator
- Very compact design
- High sensitivity for Cs137

### Description

High energy gamma radiation detector module with 100 mm<sup>2</sup> photodiode and 8 mm CsI:TI scintillator. Pulse output for easy integration in gamma radiation detection instruments.

### Application

- Ionizing radiation detector
- Medical equipment
- Personal dosimeter

### RoHS

2002/95/EC



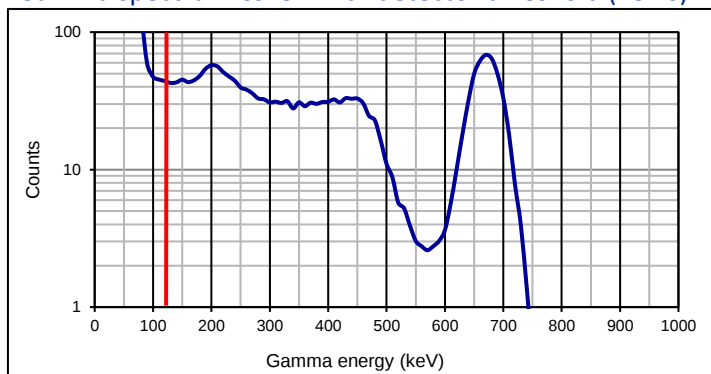
### Absolute maximum ratings

| Symbol           | Parameter      | Min | Max | Unit |
|------------------|----------------|-----|-----|------|
| T <sub>STG</sub> | Storage temp   | -20 | 65  | °C   |
| T <sub>OP</sub>  | Operating temp | 0   | 40  | °C   |

### Connector schedule

| PIN | Symbol | Connection                    |
|-----|--------|-------------------------------|
| 1   | V-     | Negative supply voltage, -5 V |
| 2   | V+     | Positive supply voltage, 5 V  |
| 3   | GND    | Ground                        |
| 4   | Vout   | Digital output voltage        |

### Gamma spectrum Cs137 with detector threshold (23 °C)



### Electro-optical characteristics of detector @ 23 °C

| Symbol         | Characteristic                                         | Test Condition                      | Min | Typ         | Max  | Unit        |
|----------------|--------------------------------------------------------|-------------------------------------|-----|-------------|------|-------------|
|                | Active area                                            |                                     |     | 10 x 10     |      | mm          |
|                | Scintillator size                                      | Material: CsI:TI                    |     | 10 x 10 x 8 |      | mm          |
|                | Detectable radiation                                   | Gamma radiation                     | 150 |             | 1500 | keV         |
|                | Dose rate sensitivity Cs137 (Count rate per dose rate) | Internal bias V <sub>R</sub> = 10 V | 800 | 900         | 1200 | cpm / μSv/h |
| I <sub>D</sub> | Dark current                                           | V <sub>R</sub> = 10 V               |     | 1           | 2.5  | nA          |
| C              | Capacitance                                            | V <sub>R</sub> = 10 V; f = 10 kHz   |     | 80          |      | pF          |

### Electrical characteristics of module @ 23 °C

|  |                           |                               |       |     |       |     |
|--|---------------------------|-------------------------------|-------|-----|-------|-----|
|  | Power supply voltage      |                               | ±4.75 |     | ±5.25 | V   |
|  | Quiescent current range   |                               | -11   |     | 14    | mA  |
|  | Output voltage            | Logic low; 3 mA sink current  |       |     | 0.2   | V   |
|  |                           | Logic high; 3 mA sink current |       | 3.1 |       | V   |
|  | Output rise time          | Load capacitance 50 pF        |       | 100 |       | ns  |
|  | Noise limit for detection |                               |       | 80  |       | keV |
|  | Pulse detection threshold |                               |       | 120 |       | keV |

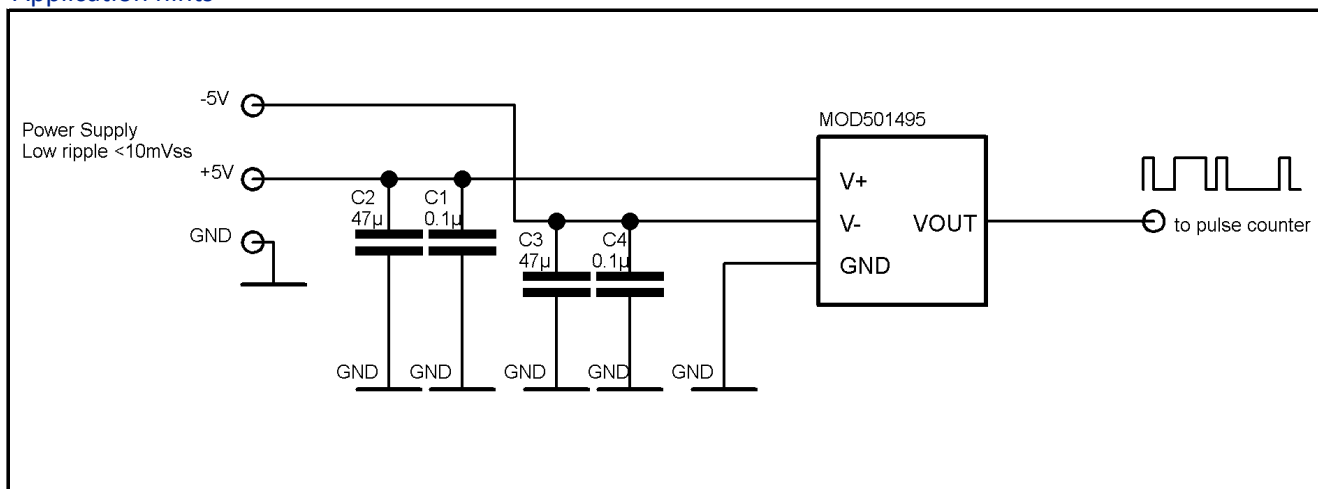
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## Application hints



## Package dimension:

Small quantities: Foam pad, boxed (12 cm x 16.5 cm)

## Handling:

Please refer to document "Instructions for handling and processing"

Only suitable for hand soldering. Keep temperature of device below 65 °C.

Disclaimer: Due to our strive for continuous improvement, specifications are subject to change within our PCN policy according to JESD46C.

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