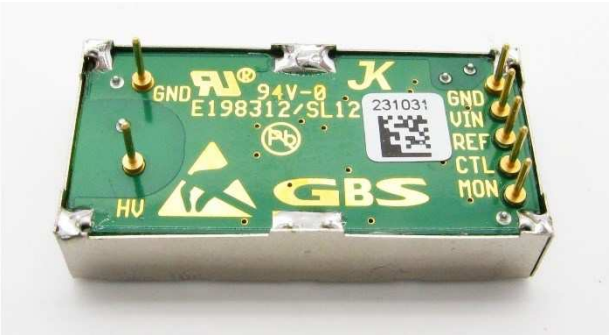
HIGH VOLTAGE POWER SUPPLY MODULE

HV2000N

The HV2000N module is a very small and ultra-low power consuming DC/DC converter, designed to be used on printed circuit boards. It is intended to supply detectors with low power consumption, such as CdZnTe-, He3- or HPGe detectors with high voltage up to −2000 V. But it may be also usable for other applications where low weight and small dimensions are very important. The technical design of the HV2000N is based on non-inductor technology, which guarantees low magnetic fields. The module can be already operated with input voltages down to 3.0 V.



KEY FEATURES	*BENEFITS*
• *Low power consumption down to 3 mW*	• *Suitable for battery-powered applications*
• *Wide input voltage range of 3 V to 18 V*	• *Can be supplied from different sources*
• *Regulated output voltage down to −2000 V*	• *Suitable for many different detector types*
• *Small dimensions of 35 mm × 17.5 mm × 7 mm*	• *Realization of particularly space-saving solutions*
• *Compatible with some of our add-on boards*	• *Easy to use with our add-on boards*

Safety Instructions

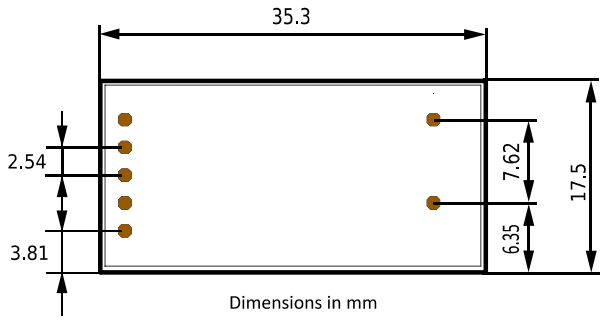
- This module is only intended for bias voltage generation for various detector types within the specified limits. Any other use is not permitted.
- Never operate the module outside the specified limit values.
- Observe the applicable regulations on accident prevention, product safety and environmental protection of the country where the final product will be used.
- You may only put the final product into operation once it has been determined that it complies with the country-specific regulations, safety regulations and standards.
- Compliance with regulations and standards must be ensured by qualified personnel who have sufficient knowledge of the relevant standards.

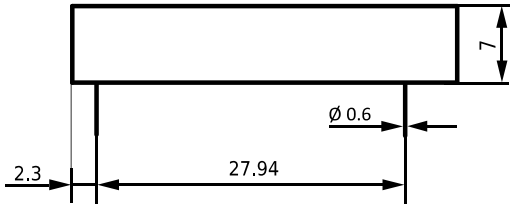
Technical Specification

Output voltage	−5 V to −2000 V
Max. output current (typical)	4 µA @ −2000 V 7 µA @ −1800 V 10 µA @ −1600 V
Input voltage range	3.0 V to 18.0 V
Output short circuit current	< 50 µA
Power consumption for 500 MΩ load | HV = −2000 V	≈ 50 mW @ 3 V ≈ 75 mW @ 5 V
Quiescent current (V_{ctrl} = 0 V, V_{IN} = 3 V to 18 V)	≈ 1 mA
Reference voltage	2.048 V
Control voltage range	0 V to 2.0 V
Control voltage transfer factor	1000 (±2 %)
Output ripple and noise voltage (0.1 Hz to 10 kHz)	< 50 mV (Peak-Peak)
Output series resistor for V_{mon}	10 kΩ
Temperature stability	±200 ppm/K
Operating temperature	−40 °C to 70 °C
Dimensions	35 × 17.5 × 7 mm³
Weight	≈ 8 g

Mechanical Dimensions

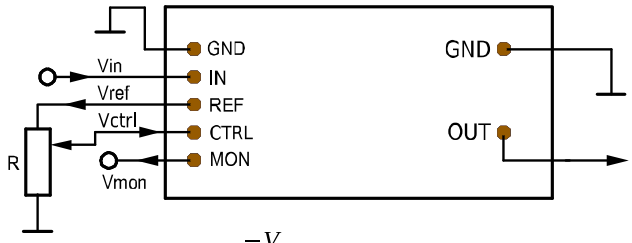
Top View





Typical Application

Top View



$$V_{MON} = \frac{-V_{OUT}}{1000} \qquad V_{OUT} = -1000 \cdot V_{CTRL}$$

Ordering

HV2000N	(HV-Module -2000V)

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