

DC/DC High Voltage Modules dBC-Series

Description

The dBC series (dBC = digital bias controller) of miniature high voltage-modules has been specially designed for avalanche photodiode (APD) operation. 3 versions are offered: The dBC-120-3x delivers a precisely controlled voltage in the range 1 – 120 V from a 3 V input voltage. This version is designed for use with InGaAs-APDs as well as very fast Si-PIN-photodiodes. The dBC-220-3x provides an output voltage range of 1 – 220 V, also from a 3 V supply, and is the ideal choice for most silicon APDs. Larger area APDs requiring higher voltages benefit from the dBC-380-5x which supplies up to 380 V from a 5 V input voltage. All three versions share a compact housing design with dimensions 21 mm x 21 mm x 8.3 mm.

The modules have integrated temperature compensation circuitry allowing both discrete APDs as well as APD modules with built-in temperature sensors to be controlled. An integrated current limiter ensures that the APD is protected against overexposure. The output voltage may be regulated using either an analog control voltage or voltage divider, or via the digital interface provided (SPI or RS-232). Suitable temperature sensors include silicon diodes or any sensor in the 2 – 10 kOhm range (at 25 °C).



Features

- Output voltage up to 380 V
- Temperature compensation
- High precision
- High stability
- Short-circuit proof
- Very low ripple
- Compact package
- Optional SPI or RS232 interface

Applications

- Avalanche photodiodes
- PIN photodiodes
- Light sources
- Piezo elements

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Technical Specifications

Part number	dBC-120-3x	dBC-220-3x	dBC-380-5x
Operating voltage	2.8 ... 12.5 V	2.8 ... 12.5 V	4.8 ... 12.5 V
Output voltage	1 ... 120 V	1 ... 220 V	1 ... 380 V
Output adjust	0 ... +2.2 VDC	0 ... +2.2 VDC	0 ... +2.2 VDC
TK adjust	0 ... +2.2 VDC	0 ... +2.2 VDC	0 ... +2.2 VDC
Temperature sensor *(default)	Si-Diode	Si-Diode	Si-Diode
Output current	0.3 mA @ 120 V max. 0.8 mA	0.15 mA @ 220 V max. 0.8 mA	0.03 mA @ 380 V max. 0.8 mA @ short-circuit
Operating temperature	-40 °C ... + 85 °C	-40 °C ... + 85 °C	-40 °C ... + 85 °C
Dimensions	21 x 21 x 8.3 mm	21 x 21 x 8.3 mm	21 x 21 x 8.3 mm
Weight	10 g	10 g	10 g

* other sensors may also be used

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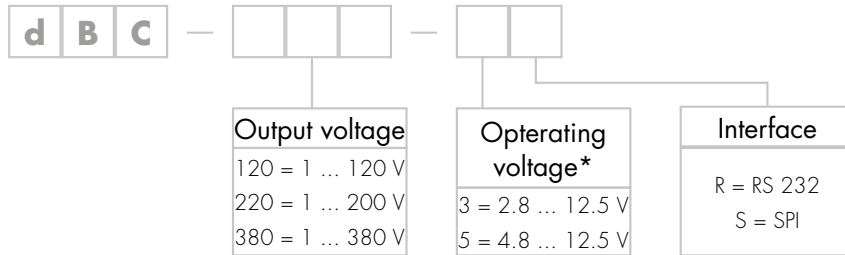
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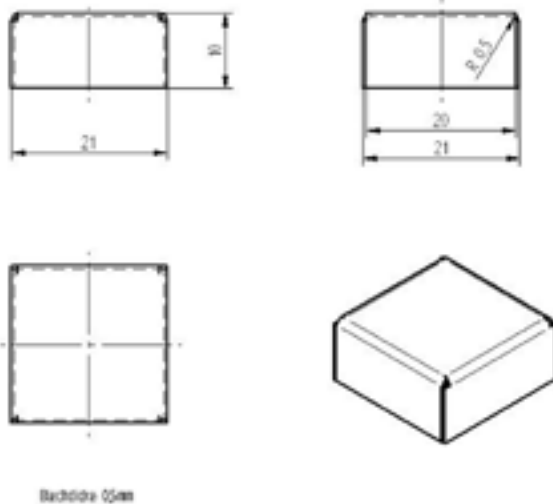
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Ordering Information



* 3 for dBC-120 and dBC-220
5 for dBC-380

Dimensions



Dimensions ~ 21 x 21 x 10 mm

Accessories

A suitable Evaluation Board dBC-EVA-Board is available upon request.