Product Brief

RCDC
Reverse conducting IGBT with diode control

The introduction of RCDC technology follows the key requirement of high power density and efficiency, long lifecycle and reliability, improved temperature behavior and reduced system costs.

RC stands for reverse conducting, a chip combining transistor and freewheeling functionality. DC stands for Diode Control, since the p-emitter efficiency of the diode function is controllable by the gate terminal. An increased current density is obtained by more active silicon in forward and reserve direction.

Scope and key figures
The RCDC technology comes in a high isolated well known package – IHV A. The robust module construction of the RCDC package offers the possibility of use in drives, traction and HVDC applications.

Key features
› 6.5 kV IGBT Module
› 125°C junction temperature
› 33 % increased current density for same footprint
› Expanded lifetime
› Increased current density due to more active silicon in forward and reserve direction
› Improvement of $R_{th}/Z_{th}$ of IGBT and Diode
› $I^2t$ improvement of the Diode
› Reduced recovery losses by diode control
› Reduction of $T_v$-ripple

Benefits

RCDC technology combines IGBT and diode function in one chip.

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RCDC
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The junction temperature is up to 125 °C and the current density of 6.5 kV increased on the same footprint by +33 %.

An important result of the monolithic integration of the IGBT and Diode functionality is a significant improvement of $R_{th}/Z_{th}$ of the IGBT & Diode and the I²t-value of the diode. By making use of the diode control functionality, an effective reduction of recovery losses can be achieved.

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**Product summary**

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Voltage class and chip technology</th>
<th>Current rating</th>
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</thead>
<tbody>
<tr>
<td>FZ1000R6SKR3</td>
<td>6500 V RCDC Technology</td>
<td>1000 A</td>
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**Additional support**

- Design in support of the new RCDC technology
- Evaluation driver board
- Application engineering support
- RCDC sample
- Documentation package
- Application note for the evaluation board

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**Additional information**

For further information on technologies, our products, the application of our products, delivery terms and conditions and/or prices, please contact your nearest Infineon Technologies office (www.infineon.com).

**Warnings**

Due to technical requirements, our products may contain dangerous substances. For information on the types in question, please contact your nearest Infineon Technologies office.

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