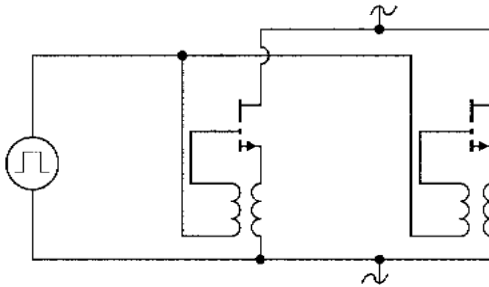


CurrentShare

Circuit for homogeneous power distribution and reduction of losses

Invention

To reduce the input resistance of power modules, single semiconductor switches are usually connected in parallel. Due to unavoidable component scattering, asymmetries in the structure or even temperature differences in the individual components, there is always an uneven current distribution with the corresponding consequences, such as locally increased losses and short circuits in the application. CurrentShare is a technology that can significantly reduce the above-mentioned disadvantages. The output currents are recoupled to the inputs, wherein in each input both a current portion which depends only on the



respective output current, and a current portion which depends on the total current through all the semiconductor switches, are fed back. With this special structure that can be easily integrated into a printed circuit board, CurrentShare reduces the asymmetry of the currents through each semiconductor switch, as well as the switching losses. At the same time, an increase in the switching speed is achieved.

Commercial Opportunities

CurrentShare can be used in a wide range of applications. CurrentShare can deliver its benefits in virtually all power electronics circuits that use parallel-connected semiconductor switches. Examples of applications for CurrentShare include power modules for solar inverters, motor control systems or traction drives for commercial and motor vehicles.

Current Status

The invention has been applied for patent. Do not hesitate to ask us for status details. The Method was verified experimentally. On behalf of the TU Dortmund University, we offer interested companies the opportunity to license and develop the technology.

An invention of the TU Dortmund University.

Competitive Advantages

- Simple construction
- Reduction of asymmetries in the output current
- Lower switching losses
- Higher switching speed
- Protection of the components

Technology Readiness Level

123456789

Technology validated in lab

Industries

- Electrical Engineering

Ref. No.

4988

Contact

Andreas Brennemann
E-Mail: ab@provendis.info
Phone: +49(0)208-94105-33

