Series Optimizing the concentration of the impurity layer in a super-junction structure greatly improved the trade-off between device withstand voltage and on-resistance compared with conventional products (Super J MOS® S1 Series). Keeping the trade-off characteristics between turn-off loss and turn-off dv/dt at the same level as conventional products enables both low-loss and low-noise characteristics, and supports enhanced efficiency and compactness of a power supply.

- Achieve highly efficient power supply: About 30% reduction in gate charge ($Q_G$) and output charge/discharge loss ($E_{oss}$) compared with conventional products
- Enable package downsizing: About 25% reduction in on-resistance ($R_{DS(on)}$) compared with conventional products
- Suppress surge voltage during turn-off
- S2FD Series: About 50% reduction in reverse recovery time ($t_{rr}$) of the built-in diode compared with the standard type (S2 Series)

Super J MOS® is a registered trademark of Fuji Electric.

Package: TO-252, TO-220F/220, TO-3P, TO-247

Application examples: Server, communication equipment, LED light, UPS, power conditioning sub-system, general-purpose power supply, quick charger for EV, etc.
2. Suppressed surge voltage during turn-off

Comparison of surge voltage during turn-off ($V_{DS}$ surge)

Comparison between S2 and S1 Series

Conditions: Booster circuit, $V_{DD}=400V$, $I_{DD}=39.4A$, $V_{DS}=100V$, $T_{case}=25^\circ C$

3. S2FD: About 50% reduction in $t_{rr}$ (compared with S2)

Comparison of reverse recovery time ($t_{rr}$)

Comparison between S2FD and S2 Series

Conditions: Booster circuit, $V_{DD}=400V$, $I_{DD}=39.4A$, $V_{DS}=180V$, $T_{case}=25^\circ C$

Product Line-up

Super J MOS® S2 Series

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<th>$I_{D(sat)}$ (mA)</th>
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Super J MOS® S2FD Series

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Safety Precautions

- Before using this product, read the "Instruction Manual" and "Specifications" carefully, and consult with the retailer from which you purchased this product as necessary to use this product correctly.
- The product must be handled by a technician with the appropriate skills.

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