



Product Brief

650V CoolMOS™ CFD2

The Market Leading 650V CoolMOS™ Technology

With the 650V CoolMOS™ CFD2 Infineon launched its second generation of its market leading high voltage CoolMOS™ MOSFET's with integrated Fast Body Diode. The CFD2 devices are the successor of 600V CFD with improved energy efficiency. The softer commutation behavior and therefore better EMI behavior gives this product a clear advantage in comparison to competitor parts. CFD2 is the first 650V MOSFET technology with integrated Fast Body Diode on the market. The product portfolio provides all benefits of fast switching Superjunction MOSFETs offering better light load efficiency, reduced gate charge, easy implementation and outstanding reliability. The CFD2 technology offers lower prices compared to its predecessor 600V CFD and is the best choice for resonant switching applications.

Key Features

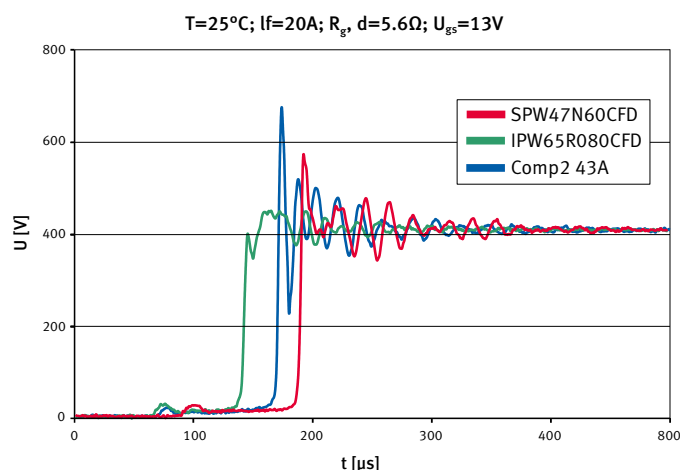
- First 650V technology with integrated Fast Body Diode on the market
- Limited voltage overshoot during hard commutation
- Significant Q_g reduction compared to 600V CFD technology
- Tighter $R_{DS(on)}$ max to $R_{DS(on)}$ typ window
- Easy to design in
- Lower price compared to 600V CFD technology

Key Benefits

- Low switching losses due to low Q_{rr} at repetitive commutation on body diode
- Self limiting di/dt and dv/dt
- Low Q_{oss}
- Reduced turn-on / turn-off delay times
- Outstanding CoolMOS™ quality

Applications

- Telecom
- Server
- Battery charging
- Solar
- HID lamp ballast



CFD2 shows limited voltage overshoot during hard commutation of conducted body diode.

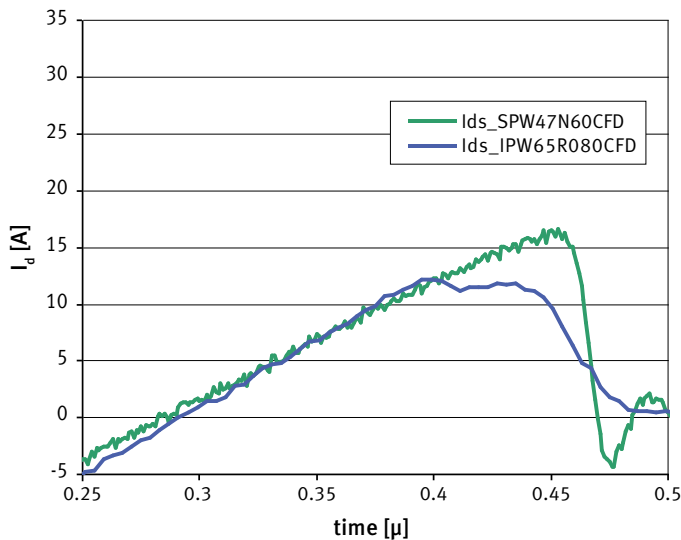
Topologies

- ZVS phase shifted full bridge
- LLC topologies
- AC/DC bridge
- 3-level inverter

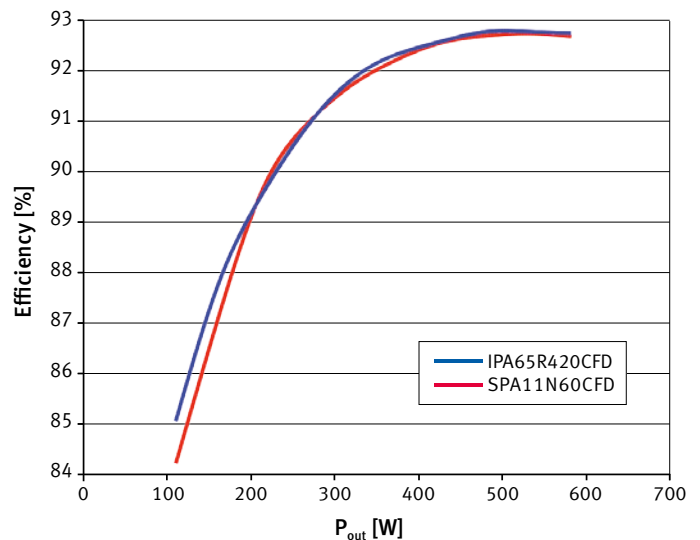
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Low Q_{tr} of CFD2 technology enables lower conduction losses and very fast switching



CFD vs. CFD2 efficiency comparison in a 12V Server SMPS used topologie ZVS FB @ 100kHz



Portfolio CoolMOS™ CFD2 650V



$R_{DS(on)}$ [mΩ]	ThinPAK 8 x 8 Halogen-Free	TO-252 DPAK Halogen-Free	TO-262 I ² PAK Halogen-Free	TO-263 D ² Pak Halogen-Free	TO-220 Halogen-Free	TO-220 FullPAK Halogen-Free	TO-247
1400		IPD65R1K4CFD					
950		IPD65R950CFD					
660/725	IPL65R725CFD	IPD65R660CFD	IPI65R660CFD	IPB65R660CFD	IPP65R660CFD	IPA65R660CFD	IPW65R660CFD
420/460	IPL65R460CFD	IPD65R420CFD	IPI65R420CFD	IPB65R420CFD	IPP65R420CFD	IPA65R420CFD	IPW65R420CFD
310/340	IPL65R340CFD		IPI65R310CFD	IPB65R310CFD	IPP65R310CFD	IPA65R310CFD	IPW65R310CFD
190/210	IPL65R210CFD		IPI65R190CFD	IPB65R190CFD	IPP65R190CFD	IPA65R190CFD	IPW65R190CFD
150/165	IPL65R165CFD		IPI65R150CFD	IPB65R150CFD	IPP65R150CFD	IPA65R150CFD	IPW65R150CFD
110			IPI65R110CFD	IPB65R110CFD	IPP65R110CFD	IPA65R110CFD	IPW65R110CFD
80							IPW65R080CFD
41							IPW65R041CFD

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