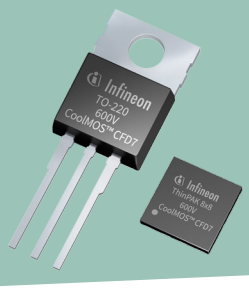


Product brief

600 V CoolMOS™ CFD7 SJ MOSFET

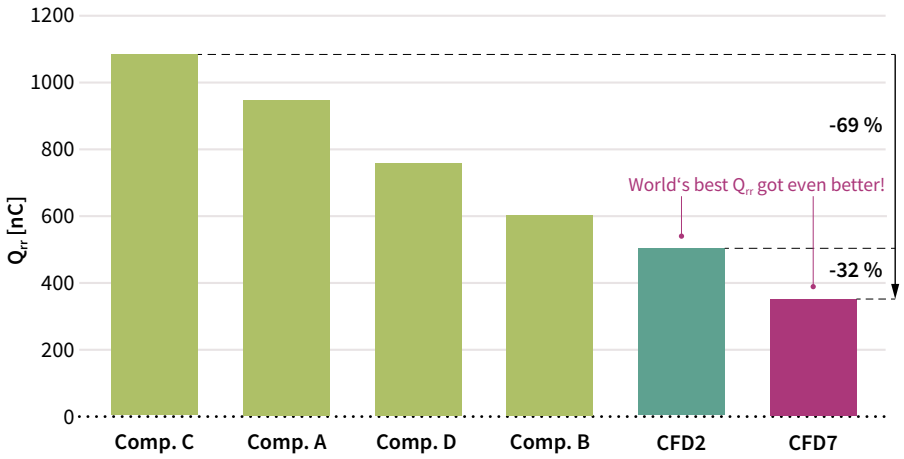
Infineon's answer to resonant high power topologies

The 600 V CoolMOS™ CFD7 is Infineon's latest high voltage superjunction MOSFET technology with integrated fast body diode, completing the CoolMOS™ 7 series. It is the ideal choice for resonant topologies in high power SMPS applications, such as server, telecom and EV charging stations.

The new CoolMOS™ CFD7 is the successor to the CoolMOS™ CFD2 family. CoolMOS™ CFD7 comes with reduced gate charge (Q_g), improved turn-off behavior and a reverse recovery charge (Q_{rr}) of up to 69 percent lower compared to the competition, as well as the lowest reverse recovery time (t_{rr}) in the market. Due to these features CoolMOS™ CFD7 offers highest efficiency and best-in-class reliability in soft switching topologies such as LLC and ZVS phase-shift full-bridge. In addition, CoolMOS™ CFD7 enables higher power density thanks to its optimized $R_{DS(on)}$.

All together, this latest fast body diode series brings clear benefits compared to competitor offerings by combining the advantages of a fast switching technology with superior commutation ruggedness without sacrificing easy implementation in the design-in process.

Q_{rr} comparison of 170 mΩ CFD vs. 190 mΩ range competition*



*Comparison based on datasheet values

Key features

- Ultra-fast body diode
- Best-in-class reverse recovery charge (Q_{rr})
- Improved reverse diode dv/dt and dif/dt ruggedness
- Lowest FOM $R_{DS(on)}$ x Q_g and E_{oss}
- Best-in-class $R_{DS(on)}$/package combinations

Key benefits

- Best-in-class hard commutation ruggedness
- Highest reliability for resonant topologies
- Highest efficiency with outstanding ease-of-use/performance trade-off
- Enabling increased power density solutions

www.infineon.com/cfd7

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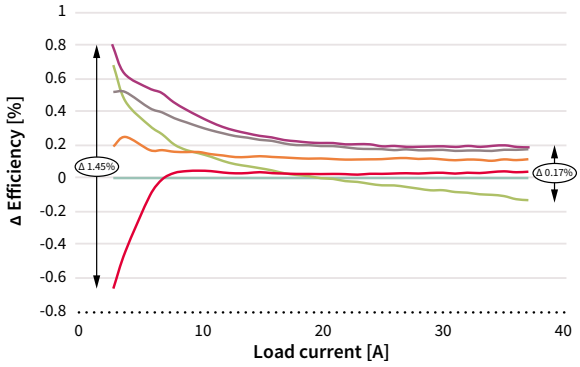
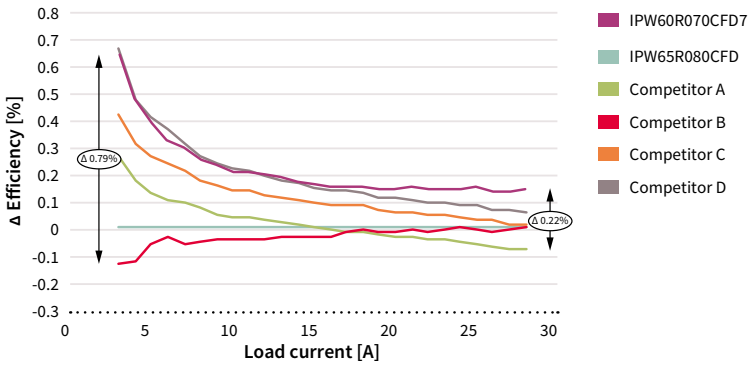
The application measurements shown below illustrate that the features of the latest CoolMOS™ CFD7 family result in significant efficiency improvements in resonant switching topologies. CoolMOS™ CFD7 offers up to 1.45 percent increased energy efficiency over the main competition on the market and exceeds the requirements of the targeted applications.

Efficiency comparison of CFD7 vs. CFD2 and competition in 2 kW ZVS



Efficiency comparison of CFD7 vs. CFD2 and competition in 3 kW LLC



600 V CoolMOS™ CFD7 portfolio

$R_{DS(on)}$ max. [mΩ]	TO-263 D^2PAK	TO-252 DPAK	ThinPAK 8x8	TO-220	TO-220 FullPAK	TO-247
360	IPB60R360CFD7	IPD60R360CFD7		IPP60R360CFD7	IPA60R360CFD7	
280	IPB60R280CFD7	IPD60R280CFD7		IPP60R280CFD7	IPA60R280CFD7	
210/225	IPB60R210CFD7	IPD60R210CFD7	IPL60R225CFD7	IPP60R210CFD7	IPA60R210CFD7	
170/185	IPB60R170CFD7	IPD60R170CFD7	IPL60R185CFD7	IPP60R170CFD7	IPA60R170CFD7	IPW60R170CFD7
145/160	IPB60R145CFD7	IPD60R145CFD7	IPL60R160CFD7	IPP60R145CFD7	IPA60R145CFD7	IPW60R145CFD7
125/140	IPB60R125CFD7		IPL60R140CFD7	IPP60R125CFD7	IPA60R125CFD7	IPW60R125CFD7
105/115	IPB60R105CFD7		IPL60R115CFD7	IPP60R105CFD7		IPW60R105CFD7
90/95	IPB60R090CFD7		IPL60R095CFD7	IPP60R090CFD7		IPW60R090CFD7
70/75	IPB60R070CFD7		IPL60R075CFD7	IPP60R070CFD7		IPW60R070CFD7
55/60	IPB60R055CFD7		IPL60R060CFD7			IPW60R055CFD7
40	IPB60R040CFD7					IPW60R040CFD7
31						IPW60R031CFD7
24						IPW60R024CFD7
18						IPW60R018CFD7

SMD portfolio extension planned for 2020

By combining the 600 V CoolMOS™ CFD7 with the 2EDN EiceDRIVER™ family, Infineon enables optimized system solutions for high power designs. For more information visit: www.infineon.com/edn

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