

Product brief

600 V CoolMOS™ PFD7 series

The next level for ultrahigh power density designs

The latest 600 V CoolMOS™ PFD7 series sets a new benchmark in 600 V superjunction (SJ) technologies, suitable for ultrahigh power density designs like chargers and adapters, but also for low-power drives and specific lighting applications.

It combines best-in-class performance with state-of-the-art ease of use, built on Infineon's superjunction technology innovation and more than 20 years of experience.

This product family offers up to 1.17 % efficiency increase compared to the CoolMOS™ P7 technologies, which leads to a power density increase of 1.8 W. This outstanding improvement is achieved by lower conduction and charge/discharge losses, as well as reduced turn-off and gate-driving losses, enabled by pushing the cutting-edge CoolMOS™ technology to new limits.

The CoolMOS™ PFD7 series is available in industrial and standard grade and comes with a broad range of on-state resistance ($R_{DS(on)}$) values. That in combination with a variety of packages eases the selection of the right part to optimize designs. Furthermore, an integrated electrostatic discharge (ESD) protection of up to 2 kV eliminates ESD related yield loss. At the same time, especially the industry-leading SMD package offering, contributes to lower bill-of-material (BOM) and PCB space savings and makes manufacturing easier.

Key system advantages

- > Supports key trend of small and light mobile products
- > Pushes the limits of affordable ultrahigh power density
- > Supports major trend of energy saving at major home appliances
- > Optimized for high efficiency especially at light-load conditions

Key features

- > Very low FOM $R_{DS(on)} \times E_{oss}$
- > Integrated robust fast body diode
- > Up to 2 kV ESD protection
- > Wide range of $R_{DS(on)}$ values
- > Excellent commutation ruggedness
- > Low EMI
- > Broad package portfolio

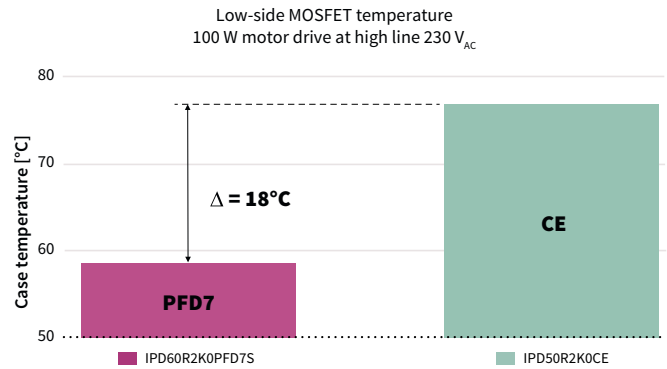
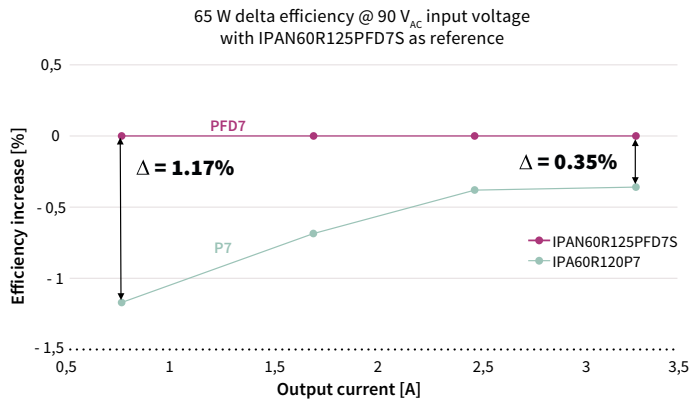
Key benefits

- > Minimized switching losses
- > Power density improvement compared to latest CoolMOS™ charger technology
- > Increased efficiency and improved thermal behavior compared to CoolMOS™ CE technology for low-power drives applications
- > BOM cost reduction and easy manufacturing
- > Robustness and reliability
- > Easy-to-select right parts for design fine-tuning



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600 V CoolMOS™ PFD7 increases efficiency in light- and full-load conditions. This results in a power density increase of 1.8 W for ultrahigh power chargers and adapters.

600 V CoolMOS™ PFD7 provides up to 2 % higher efficiency at 100 W, which results in an 18 °C thermal improvement. Considering its excellent commutation ruggedness as well as its low EMI, it is the perfect solution for low-power drives.

600 V CoolMOS™ PFD7 portfolio

R _{DS(on)} [mΩ]	TO-220 FullIPAK narrow lead	IPAK short leads	DAK	SOT-223	ThinPAK 5x6
2000			IPD60R2K0PFD7S	IPN60R2K0PFD7S	
1500			IPD60R1K5PFD7S	IPN60R1K5PFD7S	IPLK60R1K5PFD7
1000		IPS60R1K0PFD7S	IPD60R1K0PFD7S	IPN60R1K0PFD7S	IPLK60R1K0PFD7
600		IPS60R600PFD7S	IPD60R600PFD7S	IPN60R600PFD7S	IPLK60R600PFD7
360	IPAN60R360PFD7S	IPS60R360PFD7S	IPD60R360PFD7S	IPN60R360PFD7S	IPLK60R360PFD7
280	IPAN60R280PFD7S	IPS60R280PFD7S	IPD60R280PFD7S		
210	IPAN60R210PFD7S	IPS60R210PFD7S	IPD60R210PFD7S		
125	IPAN60R125PFD7S				

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