

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 applications

- › 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

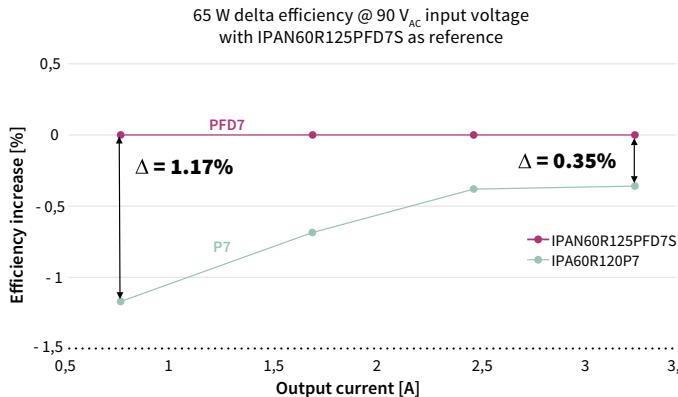
Key benefits

- › 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

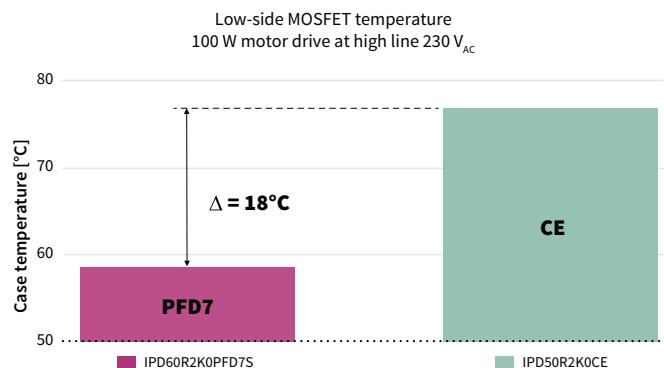


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600 V CoolMOS™ PFD7 increases efficiency in light- and full-load conditions. This results in a power density increase of 1.8 W for ultrahigh power chargers and adapters.



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 _{D(on)} [mΩ]	TO-220 FullPAK narrow lead	IPAK short leads	DPAK	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				

*Coming soon

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