

产品简介

650 V CoolMOS™ CFD7A

汽车应用快车道

电动汽车不再只是一个流行词语。汽车行业这一强劲势头反映了未来十年全球电动汽车的销量预测，并呈现出一个明显趋势：电气化普及之势已然到来。

展示技术、质量和生产方面的深厚专业知识

最新硅基 650 V CoolMOS™ SJ 功率 MOSFET CFD7A 经过专门优化，可以满足电动汽车应用（如车载充电器、HV-LV DC-DC 转换器和辅助电源）的要求。凭借其在汽车行业积累的 10 余年经验，CoolMOS™ CFD7A 不仅具有远超 AEC Q101 标准的卓越质量，还兼具无与伦比的专有技术。CoolMOS™ CFD7A 系列在高度自动化的 300 mm 生产线上制造而成，能够在批量生产中实现零缺陷目标，同时满足不断增长的市场需求。

实现更紧凑、性能更卓越的汽车应用。

1. 高功率密度成就更紧凑的设计

CoolMOS™ CFD7A 在硬开关和谐振开关拓扑中，尤其是轻负荷条件下具有较大改进，令效率更上一层楼。与之前几代产品相比，其在相同栅极损耗的水平下可实现更高的开关频率；而且，此组合极具前景，使 CFD7A 成为减少系统重量和空间以实现更紧凑设计的关键因素。

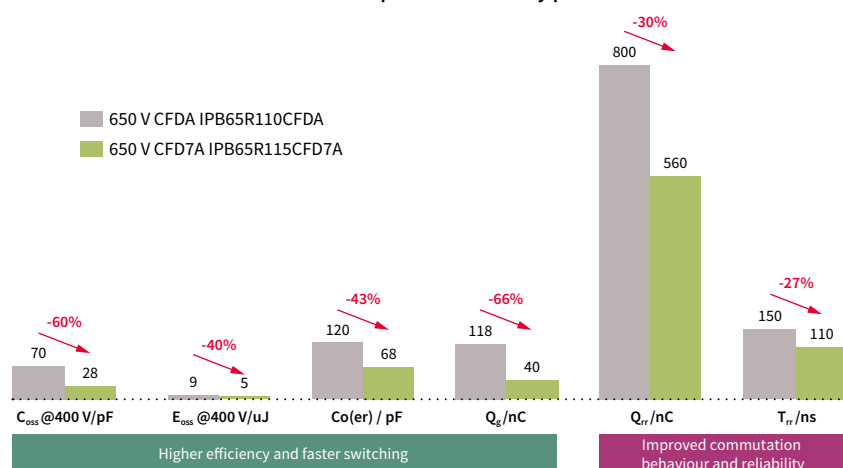
关键性能

- › 电池电压高达 475 V 且毫不影响可靠性标准
- › 硬开关和软开关拓扑效率提升高达 98.4%
- › 进一步提升效率的开尔文源极概念
- › 固有快速体二极管的 Q_{rr} 比 CoolMOS™ CFDA 低 30%

主要优点

- › 在满足汽车寿命要求方面具有出色的可靠性
- › 实现更高功率密度设计
- › 可扩展设计用于 PFC 和 DC-DC 级
- › 提供精细产品组合

Performance improvements in key parameters



www.infineon.com/cfd7a

www.infineon.com/coolmos-automotive

www.infineon.com/ev-solutions



650 V CoolMOS™ CFD7A

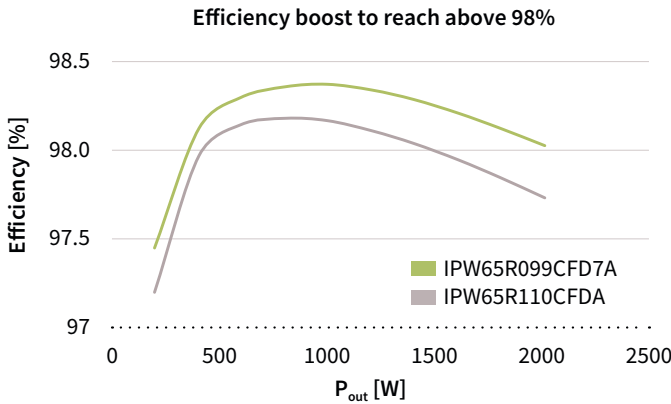
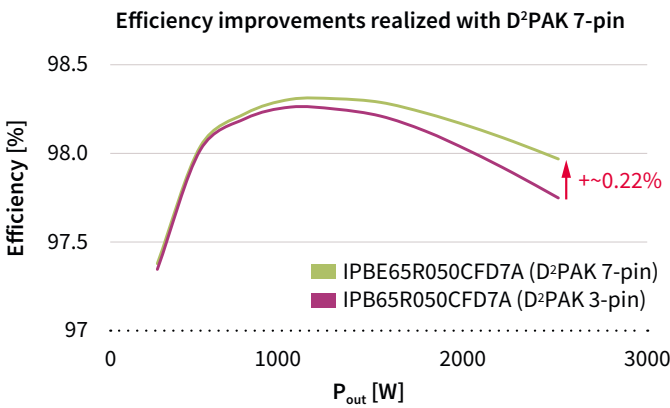
汽车应用快车道

2.符合汽车寿命要求的出色可靠性

由于宇宙辐射鲁棒性增强, CoolMOS™ CFD7A 技术能够应用更高的蓄电池电压, 同时具有与前几代产品及其他市场产品相同的可靠性。

3.更高的设计灵活性和可扩展性

得益于固有快速体二极管和广泛的产品组合, CFD7A 器件可用于 PFC 和 DC-DC 级。

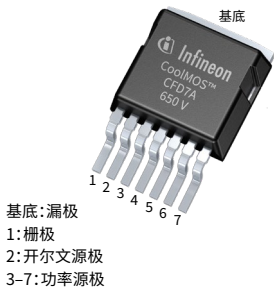


除了技术外, 我们的封装也是成就卓越效率和热性能的关键要素。结合使用英飞凌的 650 V CoolMOS™ CFD7A 技术和 D²PAK 7 引脚封装时, 更出色的效率和热性能将令客户获益匪浅。

与 D²PAK 3 引脚相比, D²PAK 7 引脚 (开尔文源极引脚) 中使用的开尔文源极概念克服了源极电感引起的局限性, 并提升了开关性能。因此, 系统级别 (特别是高电流下) 的优点是降低了开关损耗和热量。此外, 漏极和源极/栅极之间的爬电距离增加到 4.2 mm, 有助于在高达 475 V 的蓄电池电压等级下使用器件。

Product portfolio

| R _{DS(on)} 最大值 [mΩ] | TO-263 3 引脚 D ² PAK | TO-263-7 7 引脚 D ² PAK | TO-220 | TO-247 | TO-247 short leads |
|------------------------------------|-----------------------------------|-------------------------------------|----------------|----------------|-----------------------|
| 230 | IPB65R230CFD7A | IPBE65R230CFD7A | | | |
| 190 | IPB65R190CFD7A | IPBE65R190CFD7A | IPP65R190CFD7A | IPW65R190CFD7A | |
| 145 | IPB65R145CFD7A | IPBE65R145CFD7A | IPP65R145CFD7A | IPW65R145CFD7A | |
| 115 | IPB65R115CFD7A | IPBE65R115CFD7A | IPP65R115CFD7A | IPW65R115CFD7A | |
| 99 | IPB65R099CFD7A | IPBE65R099CFD7A | IPP65R099CFD7A | IPW65R099CFD7A | |
| 75 | IPB65R075CFD7A | IPBE65R075CFD7A | IPP65R075CFD7A | IPW65R075CFD7A | IPWS65R075CFD7A |
| 50 | IPB65R050CFD7A | IPBE65R050CFD7A | IPP65R050CFD7A | IPW65R050CFD7A | IPWS65R050CFD7A |
| 35 | | | | IPW65R035CFD7A | IPWS65R035CFD7A |
| 22 | | | | IPW65R022CFD7A | IPWS65R022CFD7A |



Published by
Infineon Technologies Austria AG
9500 Villach, Austria

© 2021 Infineon Technologies AG.
All Rights Reserved.

Please note!
THIS DOCUMENT IS FOR INFORMATION PURPOSES ONLY AND ANY INFORMATION GIVEN HEREIN SHALL IN NO EVENT BE REGARDED AS A WARRANTY, GUARANTEE OR DESCRIPTION OF ANY FUNCTIONALITY, CONDITIONS AND/OR QUALITY OF OUR PRODUCTS OR ANY SUITABILITY FOR A PARTICULAR PURPOSE. WITH REGARD TO THE TECHNICAL SPECIFICATIONS OF OUR PRODUCTS, WE KINDLY ASK YOU TO REFER TO THE RELEVANT PRODUCT DATA SHEETS PROVIDED BY US. OUR CUSTOMERS AND THEIR TECHNICAL DEPARTMENTS ARE REQUIRED TO EVALUATE THE SUITABILITY OF OUR PRODUCTS FOR THE INTENDED APPLICATION.

WE RESERVE THE RIGHT TO CHANGE THIS DOCUMENT AND/OR THE INFORMATION GIVEN HEREIN AT ANY TIME.

Additional information
For further information on technologies, our products, the application of our products, delivery terms and conditions and/or prices, please contact your nearest Infineon Technologies office (www.infineon.com).

Warnings
Due to technical requirements, our products may contain dangerous substances. For information on the types in question, please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by us in a written document signed by authorized representatives of Infineon Technologies, our products may not be used in any life-endangering applications, including but not limited to medical, nuclear, military, life-critical or any other applications where a failure of the product or any consequences of the use thereof can result in personal injury.