

## 产品简介

# 650 V CoolMOS™ CFD7

## 专为谐振拓扑结构量身定制

21 世纪几大趋势的兴起, 比如大数据、数字化或电动交通, 推动了工业 SMPS 应用对更高效率和更高功率密度的需求。此外, 在过去几年中, 美国的标称输入电压增高, 加之 450 V 母线电压的发展趋势, 以及对于全球适用的设计的需求, 对 650 V 击穿电压的需求显著增加, 对于谐振拓扑结构亦是如此。

650 V 器件系列在著名的英飞凌 CoolMOS™ CFD7 系列的基础上扩展了电压范围, 也是久负盛名的 CoolMOS™ CFD2 的继任产品。它新增了 50 V 击穿电压, 集成有快速体二极管, 具有更出色的开关性能 (与前几代相比) 以及卓越的热性能。得益于这些特点, 650 V CoolMOS™ CFD7 可以在软开关应用 (如 LLC 和 ZVS 移相全桥) 中提供出色的效率和功率密度级别。

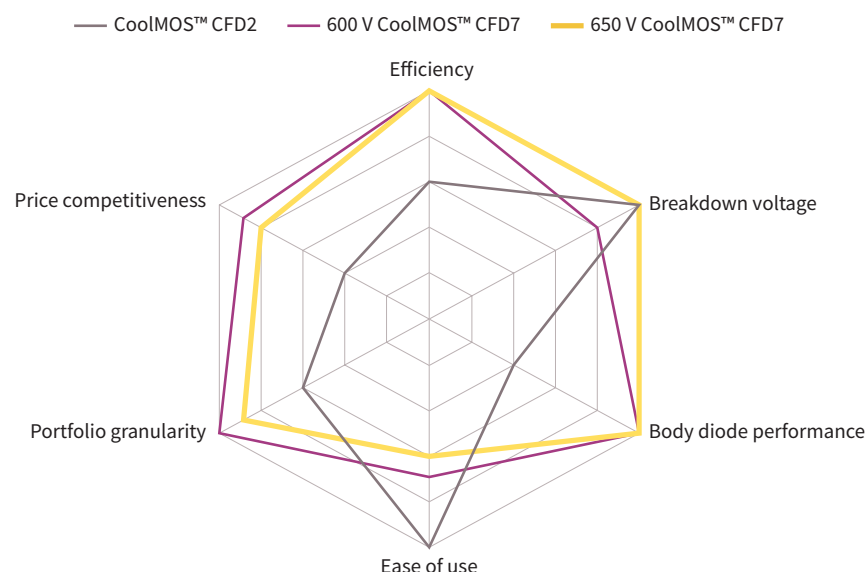
TO-247、TO-220 和 D2PAK 中一流的  $R_{DS(on)}$  让客户能够提高其设计的功率密度级别, 主要是解决电信、服务器、太阳能和 (非车载) 电动汽车充电应用。

### 关键性能

- › 超快速体二极管和非常低的  $Q_{rr}$
- › 650 V 击穿电压
- › 一流的  $R_{DS(on)}$  / 封装组合
- › 显著降低开关损耗
- › 更低的  $R_{DS(on)}$  温度依赖性

### 主要优点

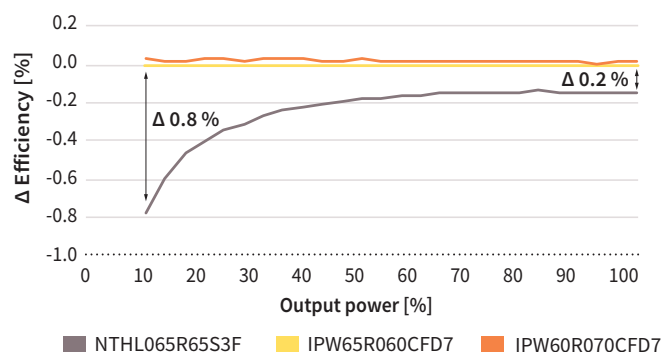
- › 出色的硬换相稳健性
- › 对于具有更高母线电压的设计提供额外的安全裕度
- › 实现更高的功率密度
- › 为工业应用提供出色的满轻载效率
- › 与竞争产品相比, 可为工业 SMPS 应用提供更高的满载效率
- › 与市场上的其他产品相比, 具有价格竞争力



# 650 V CoolMOS™ CFD7

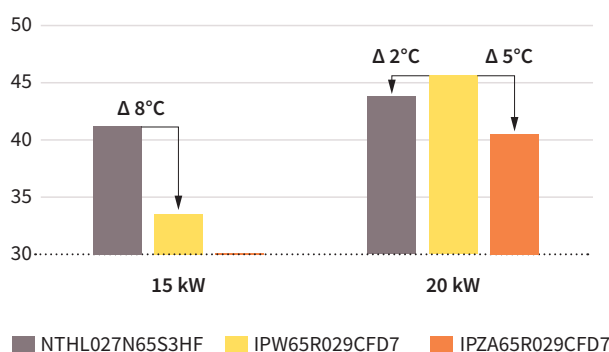
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### SMPS 应用中的效率比较



650 V CoolMOS™ CFD7 系列提高了整个负载范围的效率。由于具有更高的栅极电荷 ( $Q_g$ ) 和快速开关性能,与市场上其他产品相比,轻负载条件下的效率提高 0.8%,满负载条件下的效率提高 0.2%。

### MOSFET 温度营销亮点



650 V CoolMOS™ CFD7 也是非车载电动汽车充电站设计的理想之选。在采用 15 kW 设计的典型高电流运行条件下,650 V CoolMOS™ CFD7 比业内其他同类产品的温度最多可低 8°C。在 20 kW 电动汽车充电设计中,650 V CoolMOS™ CFD7 可以提供更出色的热性能,使用 4 引脚封装作为开尔文源连接时尤其如此(开尔文源连接功能可帮助降低寄生源极电感),它可以在高电流运行模式(电动汽车充电站设计的典型模式)下提供尽可能大优势。

### 650 V CoolMOS™ CFD7 产品组合

$R_{DS(on)}$ [mΩ]	TO-220	TO-247	TO247-4	TO-263 D <sup>2</sup> PAK	ThinPAK 8x8	TOLL	QDPAK
190/200	IPP65R190CFD7				IPL65R195CFD7	IPT65R190CFD7	
155/160	IPP65R155CFD7	IPW65R155CFD7		IPB65R155CFD7	IPL65R160CFD7	IPT65R155CFD7	
125/130		IPW65R125CFD7		IPB65R125CFD7	IPL65R130CFD7	IPT65R125CFD7	IPDQ65R125CFD7
110/115	IPP65R110CFD7	IPW65R110CFD7		IPB65R110CFD7	IPL65R115CFD7		
90/95/99	IPP65R090CFD7	IPW65R090CFD7		IPB65R090CFD7	IPL65R095CFD7	IPT65R099CFD7	IPDQ65R099CFD7
80						IPT65R080CFD7	IPDQ65R080CFD7
60/65	IPP65R060CFD7	IPW65R060CFD7			IPL65R065CFD7	IPT65R060CFD7	IPDQ65R060CFD7
40/41	IPP65R041CFD7	IPW65R041CFD7		IPB65R041CFD7		IPT65R040CFD7	IPDQ65R040CFD7
29		IPW65R029CFD7	IPZA65R029CFD7				IPDQ65R029CFD7
17/18		IPW65R018CFD7	IPZA65R018CFD7				IPDQ65R017CFD7

■ 现已上市

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