

## 产品简介

# CoolGaN™ 600 V e-mode GaN HEMT

效率最高，功率密度最高，质量最佳

增强模式概念提供了快速的开启和关闭速度，以及在芯片或封装级别上更好的集成路径。CoolGaN™可实现更简单的半桥拓扑结构。

E-mode更适合多芯片集成。随着基于增强模式的解决方案趋于成熟，易用性和解决方案成本将使它们成为更加突出的解决方案。

CoolGaN™ 600 V系列是根据特定的GaN (氮化镓) 定制认证工艺研发而成，该工艺远远优于市场上的其他GaN产品。

CoolGaN™ 600 V适用于电信，数据通信和服务器SMPS以及无线充电，充电器和适配器等。它是市场上最坚固可靠的解决方案。CoolGaN™产品系列以高性能SMD封装为基础，充分发挥了GaN的优势。

### CoolGaN™用于PFC

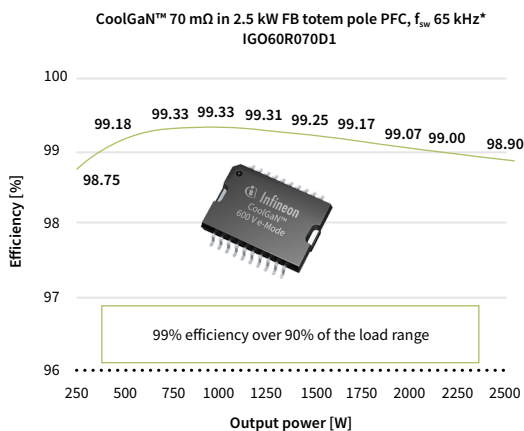
CoolGaN™可以为PFC采用更简单的半桥拓扑结构 (包括消除输入桥式整流损耗)。结果达到了创纪录的效率(>99%)，可以节约BOM。

### 关键性能

- > 600V功率器件的最佳FOM
- > 非常适合硬，软开关拓扑
- > 优化开启和关闭
- > 尖端的技术，创新的解决方案和高容量

### 主要优点

- > SMPS的最高效率
- > 最高的功率密度，小巧轻便的设计
- > 表面安装封装确保充分利用GaN的开关功能
- > 藉助强有力的驱动器IC产品组合而易于使用

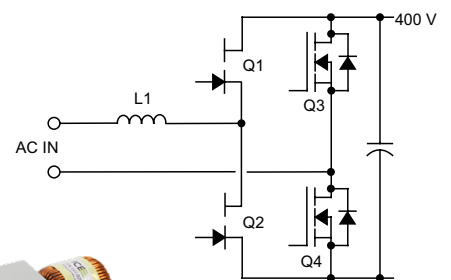


\*没有外部电源 - 一切集成。

$V_{in} = 230 V_{AC}$ ,  $V_{out} = 390 V_{DC}$ ,  $t_{环境温度} = 25^{\circ}C$

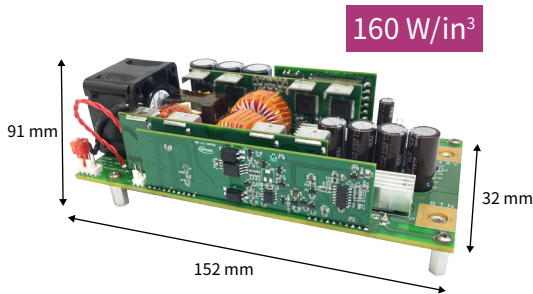
### FB图腾柱

- > 2 x 70 mΩ CoolGaN™ 在DSO-20BSC中
- > 2 x 33 mΩ CoolMOS™

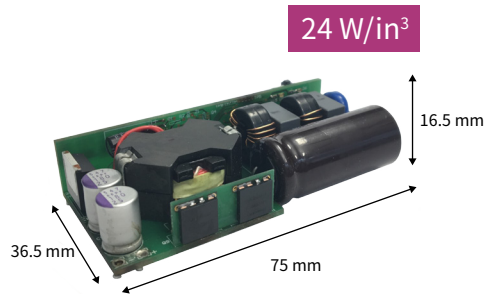


# 最大功率密度

CoolGaN™以相同的效率实现更高的功率密度



3.6 kW LLC,  $f_{sw}$  350 kHz, 380 V-54 V, 采用IGT60R070D1



65 W混合反激式,  $f_{sw}$  72-196 kHz,  $V_{in}$  90-264 V<sub>rms</sub>,  $V_{out}$  3-20 V, 采用IGLD60R190D1

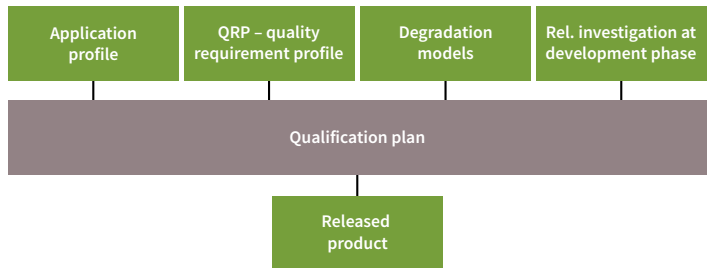
CoolGaN™用于谐振拓扑

- › 在谐振应用中,  $Q_{oss}$ 和 $Q_g$ 降低10倍, 可在最高效率水平下实现高频操作
- › 线性输出电容将停机时间缩短8到10倍
- › 设备可以并联
- › 通过优化热管理可以进一步提高功率密度
- › CoolGaN™技术将效率推向新高, 从而进一步提高功率密度, 例如, 在低功率充电器/适配器中

# 质量最佳

GaN开关的认证需要专门的方法, 远远超过市场上的其他GaN产品

- › 英飞凌的GaN设备质量远远超过标准
- › 申请资料是资格认证的一个组成部分
- › 故障模型, 根据加速测试条件进行测试, 确保满足目标生命周期和质量
- › 英飞凌设定了更高的宽带隙质量水平



CoolGaN™ 600 V e-mode GaN HEMT产品组合

$R_{DS(on)}$ max.	DSO-20-85 底部冷却	DSO-20-87 顶部冷却	HSOF-8-3 (TO-无铅)	DFN 8x8
35 mΩ	IGO60R035D1**	IGOT60R035D1**	IGT60R035D1**	
70 mΩ	IGO60R070D1	IGOT60R070D1	IGT60R070D1	IGLD60R070D1
190 mΩ			IGT60R190D1S*	IGLD60R190D1**
340 mΩ			IGT60R190D1**	
				IGLD60R340D1**

\*标准等级  
\*\*即将发布

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