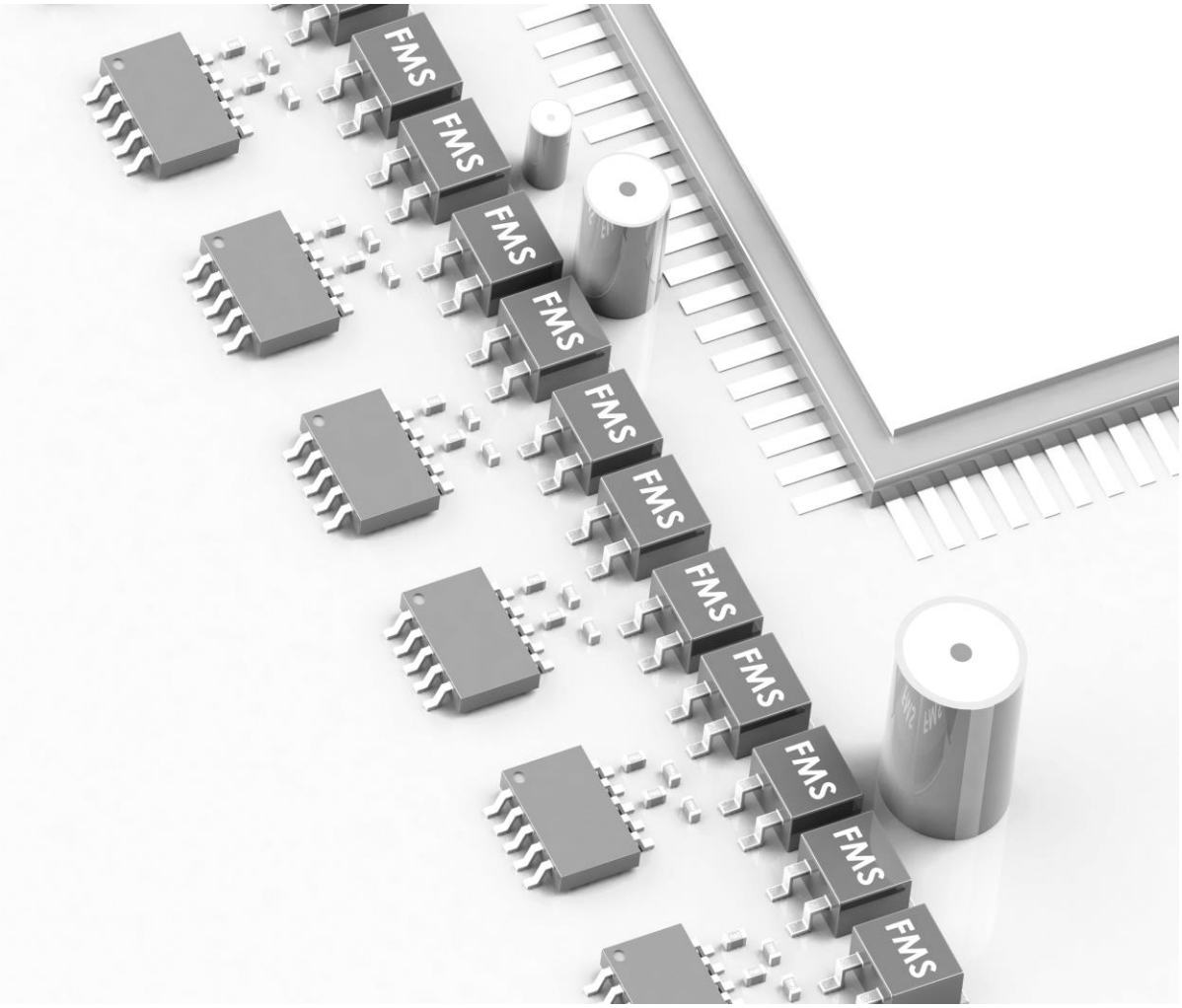
TOLL封裝 導引手冊



Formosa Microsemi CO.,LTD.

MOSFET TOLL 封裝導引手冊

- ●品質至上
- ●服務優先
- ●顧客滿意
- ●持續改善

成立時間 : 1996 年 7月

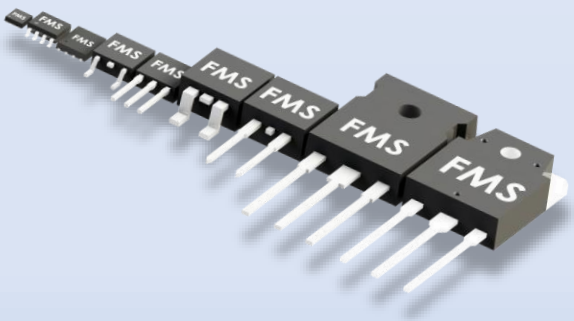
營運中心 : 臺北,臺灣

主力研發 : 功率/保護/整流/低功耗/快速切換/低導通

生產產品 : **M**OSFETs/**E**SD/**T**VS/**D**iode/**Z**ener

實施品質認證，創造顧客滿意

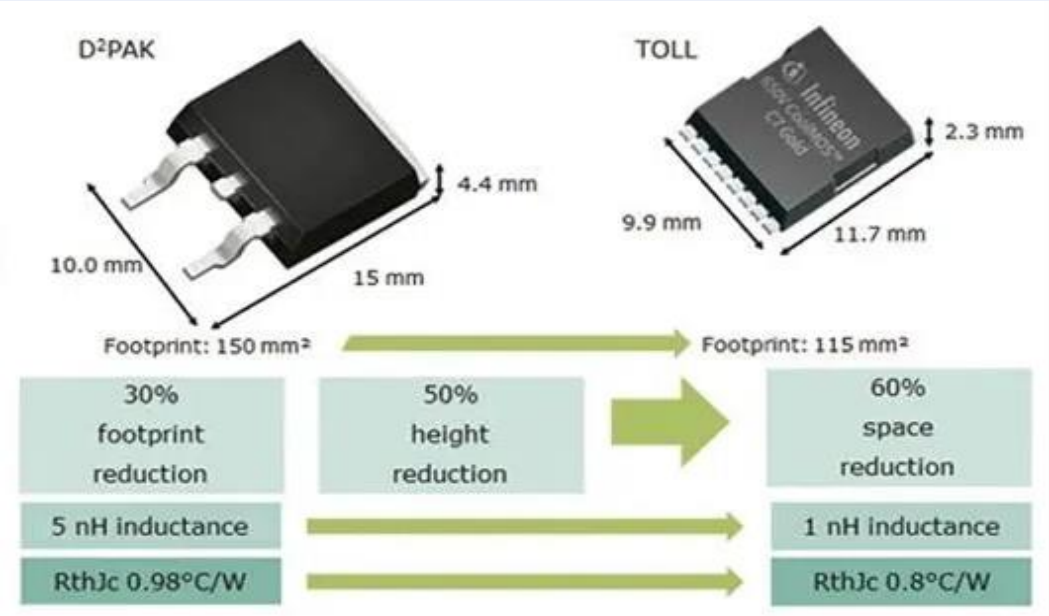
ISO 9001 Ceritifiaction:
AEC-Q101
IATF 16949 PASS
ISO 14001 PASS

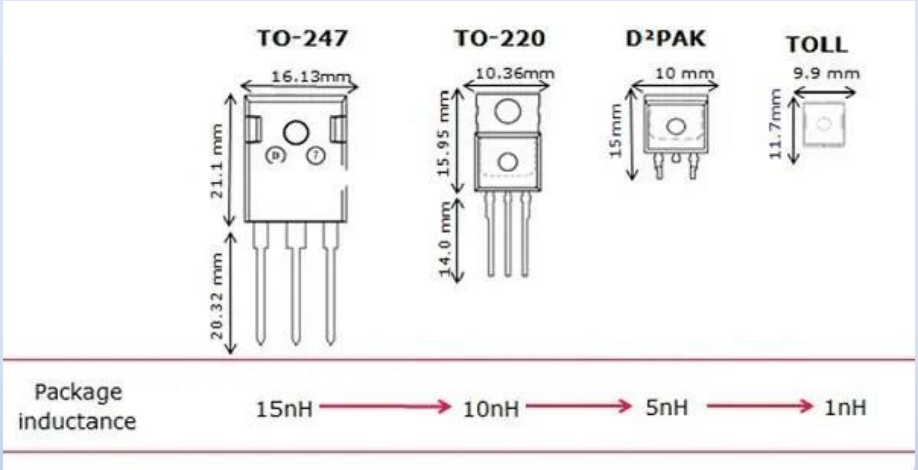


實現最佳熱性能並減少所需空間，封裝尺寸比 D2PAK 小約 30%，PCB 佈局空間減少 30%。

TOLL MOS is an excellent solution for best thermal behavior in combination with space reduction are required, the package size is smaller D2PAK around 30% and less PCB layout room reduction in footprint of 30%, offers a significant advantage in applications where compact design is required.
Low Parasitic caused by package.

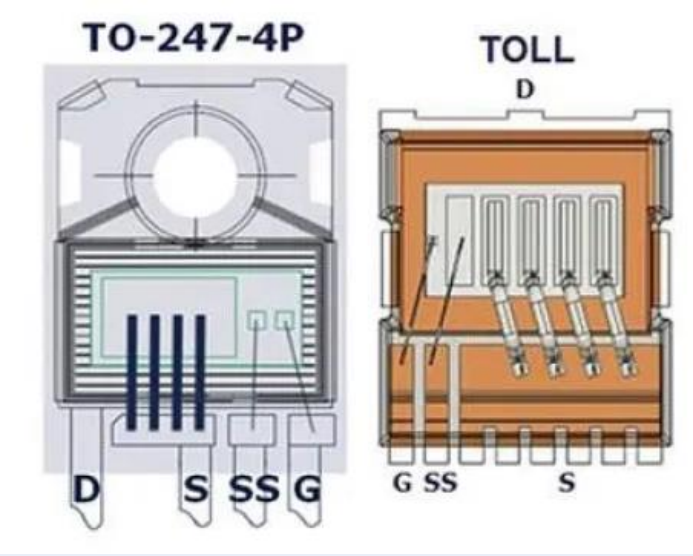
Is optimized for high currents up to 395A, the application such as BLDC, BMS and Light Electric Vehicle where parallel design is required, to improve current imbalance issue when used in parallel, and reduce cost.



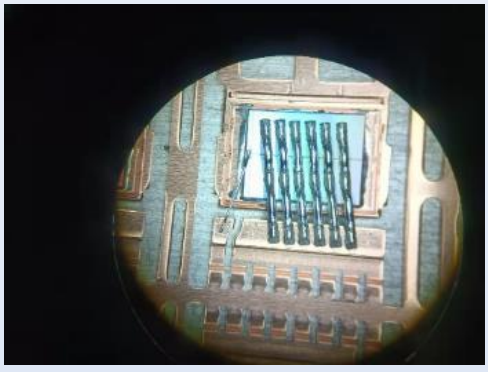


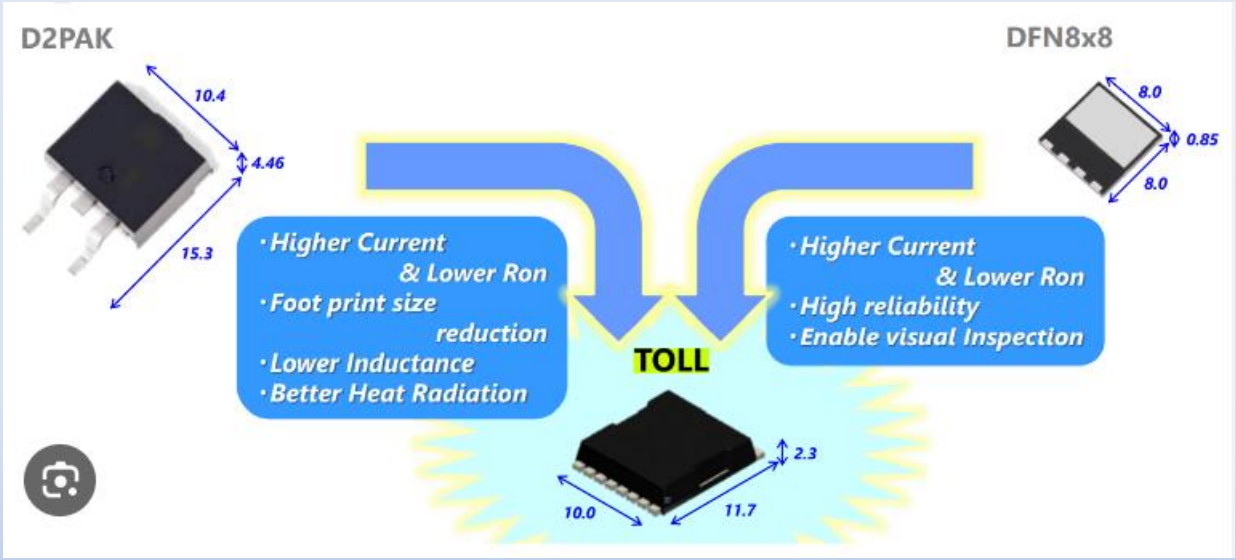
MOSFET TOLL 的技術精進

內部剖析可達到更低的內阻，可承受更高的安全操作範圍



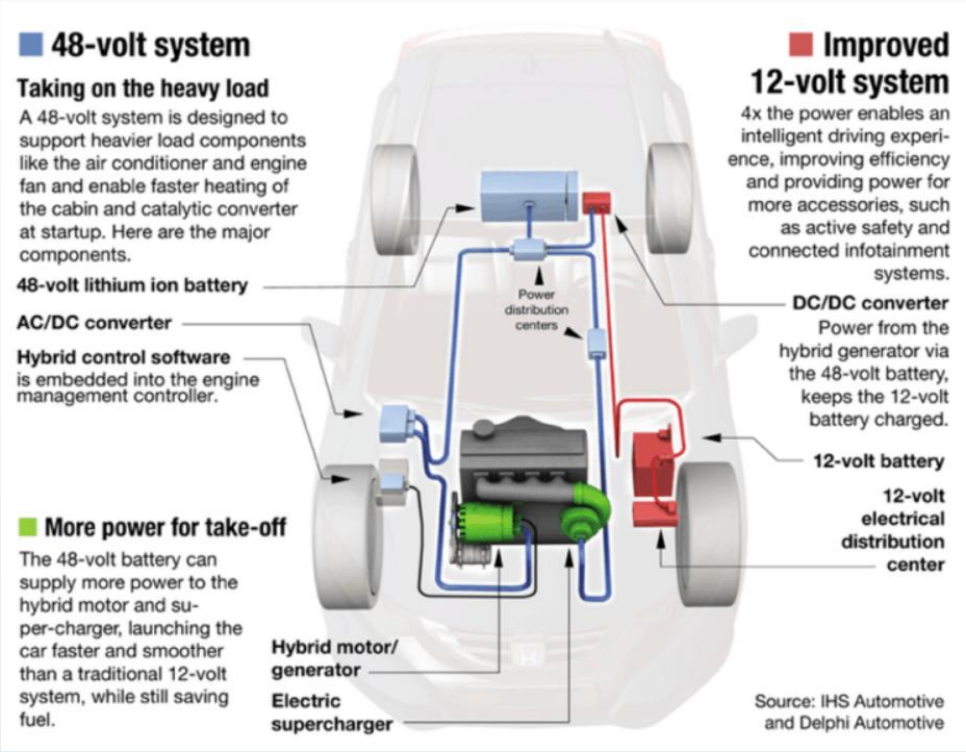
內部透視圖



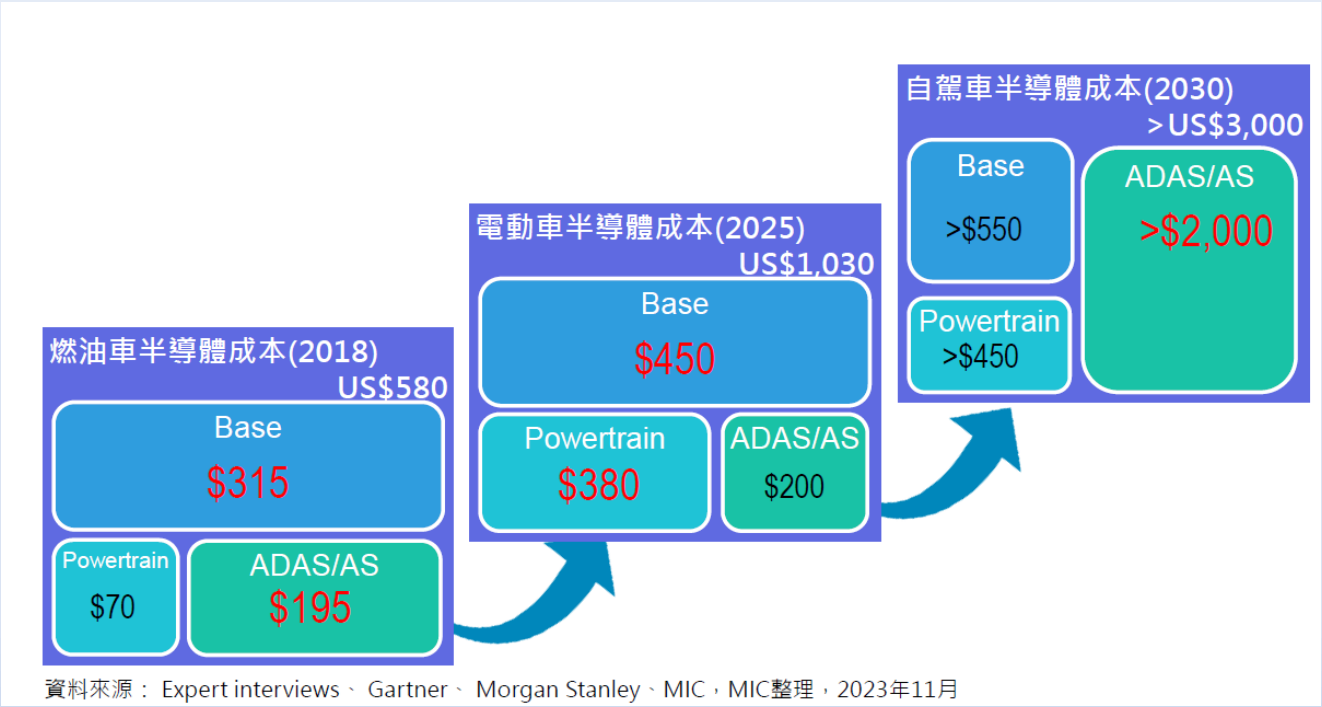


TOLL 封裝主要應用市場 (車用 BMS)

車用 BMS / ADAS 示意圖



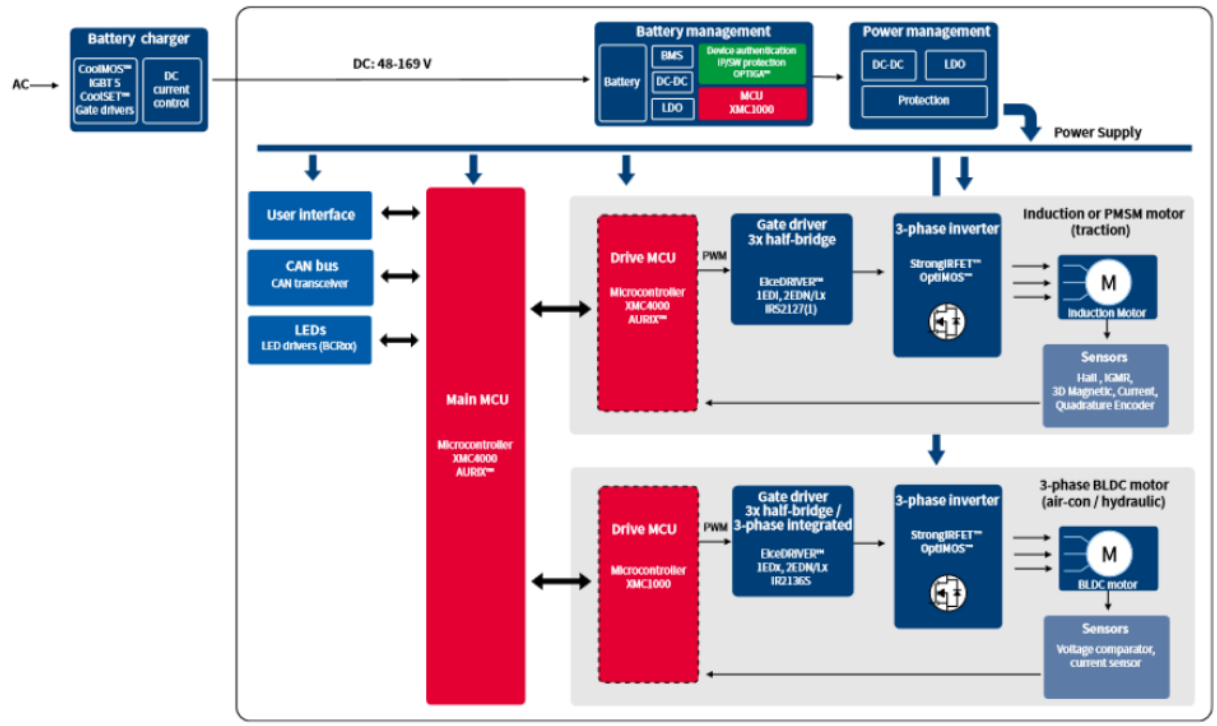
車用市場趨勢



TOLL 封裝主要應用市場 (LEV/堆高機 /高爾夫球車)

應用架構

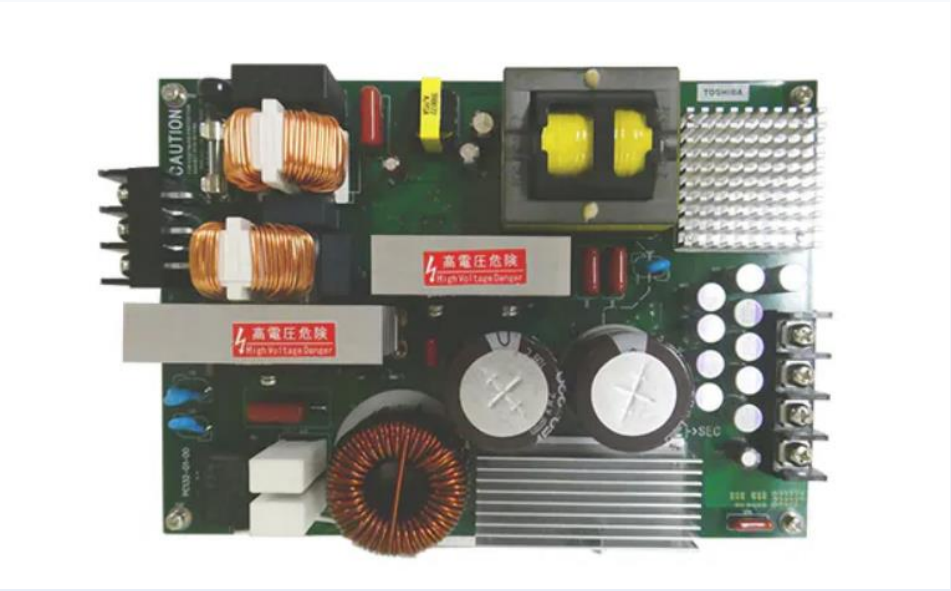
HP LEV方塊圖

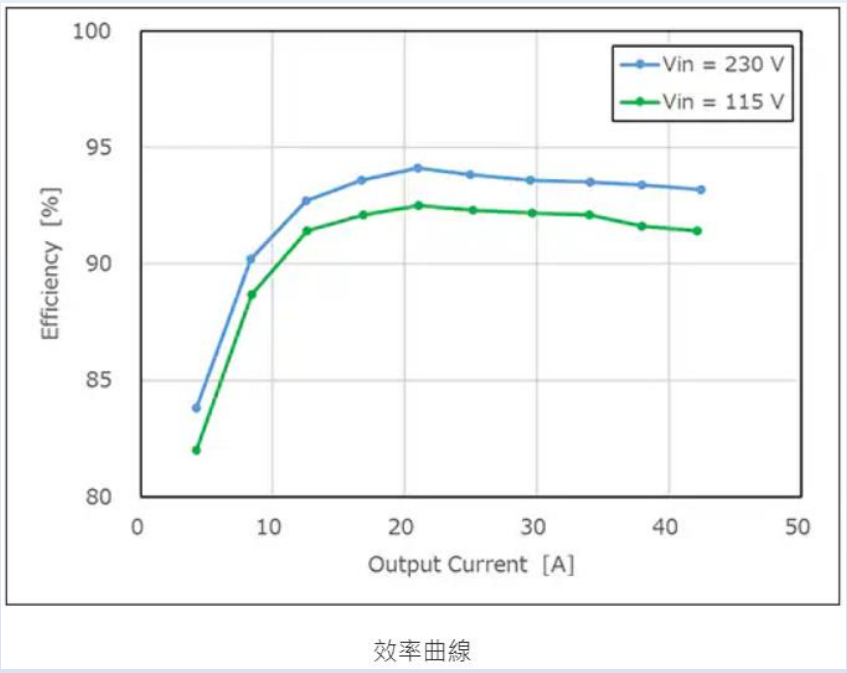


示意圖

TOLL 封裝主要應用市場 (Server Power)

大幅提升效率及設計面積





效率曲線

特性

採用TOLL封裝MOSFET，尺寸更小

1U機構尺寸和高效率電源供應器

總效率：93.2%（Vin＝230V，100%負載條件下）

外形尺寸：192mm×135mm×40mm

美麗微 TOLL 封裝產品

優於同業的規格應用,既有產品可達到 100V@1.3mΩ內阻

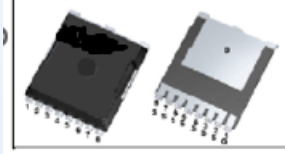
FMS P/N : FMOSQC395N10-H

N-Channel Enhancement Mode MOSFET

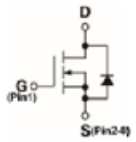
Pin Description

TOLL

Top View Bottom View



Symbol



Product Summary

Symbol	N-Channel	Unit
V_{DSS}	100	V
$R_{DS(ON)-Max}$	1.3	mΩ
ID	395	A

Feature

- Surface-mounted package
- Advanced trench cell design
- 100% UIS and Rg Tested

Applications

- Battery Management System
- Machine tool
- High power inverter system

低導通電阻設計能力已與國際水準接軌, 結合優秀的封裝水準,研發出晶片尺寸小、性價比高、大電流、大功率、超低電阻的MOSFET
超低電容電阻比，降低應用高頻切換耗損。
先進封裝製程TOLL增加上件上錫結合度與信賴性。
優化的結構提升薄膜氧化層GOX信賴度與一致性。
工規水準TJ 175度可靠度, 搭配現有供應商延伸至車規水準

美麗微 TOLL 封裝產品系列

FMS P/N	FMS Package	規格						
		BVDSS	ID	IDSS	RDSON1(Ω)			Ciss
		(V	(A	VDS:	Typ	Ma	VGS	Typ.(p
FMOSQC479N10-Q1-H	TOLL-8L (MO-299A)	100	479	80	1.3m	1.6m	10	9623
FMOSQC471N10	TOLL-8L (MO-299A)	100	471	100	1.3m	1.6m	10	13489
FMOSQC320N085	TOLL-8L (MO-299A)	85	320	80	1.3m	1.6m	10	8920
FMOSQC246N10	TOLL-8L (MO-299A)	100	246	80	2.0m	2.6m	10	9256
FMOSQC426N08	TOLL-8L (MO-299A)	80	113	64	1m	1.25m	10	12230
FMOSQC395N10-H	TOLL-8L (MO-299A)	100	395	80	1.05m	1.3m	10	13000
FMOSQC395N10-Q1-H	TOLL-8L (MO-299A)	100	395	80	1.05m	1.3m	10	13000
FMOSQC300N10	TOLL-8L (MO-299A)	100	300	80	1.2m	1.4m	10	13574
FMOSQC500N10	TOLL-8L (MO-299A)	100	500	100	1.4m	1.6m	10	14390

- 兼具商規/車規的產品規格及開發計畫
- 80V到100V的完整規格與各個市場應用
- 預計開發更低的RDSon節省設計成本及小型化
- 後續會延伸到200V的應用區間給予更多元選擇