Discover Infineon's verified chipset for 12 V automotive motor control with MOTIX™ MCU (SoC) TLE987x and OptiMOS™ MOSFETs

Infineon Technologies AG

Automotive Smart Power | Motor Control Solutions
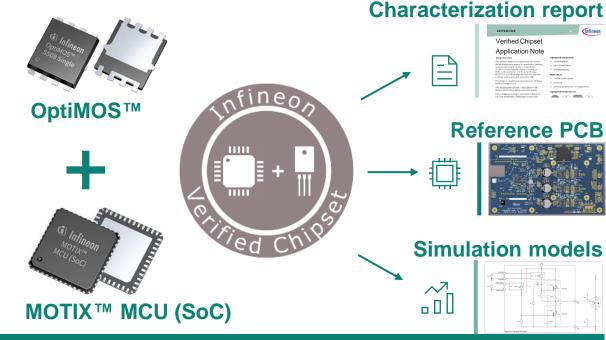
Verified chipset for 12 V automotive motor control

This verified chipset offers

– Preselected driver/MOSFET combination → plug & play
  – MOTIX™ TLE987x 32-bit motor control SoC based on Arm® Cortex®-M3 with integrated 3-phase bridge driver
  – OptiMOS™ 6 40 V SSO8 MOSFETs
– Generic power evaluation board (12 V automotive motor control)
– Extensive documentation (application note)
  – Reference for inverter switching characteristics
  – Indication of EMC and thermal performance
  – Detailed characterization over wide application conditions:
    – 8 A – 30 A load current
    – 9 V – 18 V supply voltage
    – -40°C - +150°C temperature
    – Driver and MOSFET samples from different production lots
– Simulation models (TLE987x and 4 different MOSFETs, HS & LS)

Proven hardware & expert know-how

OptiMOS™

MOTIX™ MCU (SoC)

Characterization report

Reference PCB

Simulation models

Key benefits

– Less fine-tuning needed during development
– Switching characteristics already known before start of development
– Less driver/MOSFET expertise needed
– Less surprises during design-in process (in EMC & thermal performance)
– Self-explanatory documentation

Target applications

– Automotive pumps and fans
– Thermal management
– BLDC motor drive up to 400 W

Verified chipset for 12 V automotive motor control
Our value proposition

Key features	Key benefits	Value
Reference for inverter switching characteristics	– Less fine-tuning needed during development	Fast time to market
Indication of EMC and thermal performance influencing factors	– Switching characteristics already known before start of development	Easy to design system
Preselected driver/MOSFET combination → plug & play	– Less driver/MOSFET expertise needed	Reduced effort
Extensive documentation	– Less surprises during design-in process (in EMC and thermal performance)	
	– Self-explanatory documentation	

Verified chipset MOTIX™ MCU (SoC) TLE987x & OptiMOS™ MOSFETs Product combinations

Verified chipset for automotive motor control applications	MOTIX™ 32-bit motor control SoC with integrated 3-phase bridge driver	OptiMOS™ MOSFET	$R_{ds(on)}$	Status application note	Status online simulation
MOTIX™ TLE987x + OptiMOS™ 6 - 1.0 mΩ	TLE9879QXA40	IAUC120N04S6N010	1.0 mΩ	coming soon	released
MOTIX™ TLE987x + OptiMOS™ 6 - 1.5 mΩ	TLE9879QXA40	IAUC100N04S6N015	1.5 mΩ	coming soon	released
MOTIX™ TLE987x + OptiMOS™ 6 - 2.2 mΩ	**TLE9879QXA40**	**IAUC100N04S6N022**	**2.2 mΩ**	**released**	**released**
MOTIX™ TLE987x + OptiMOS™ 6 – 2.8 mΩ	TLE9879QXA40	IAUC100N04S6N028	2.8 mΩ	coming soon	released

www.infineon.com/TLE987x / www.infineon.com/automotivemosfet

Verified chipset for 12 V automotive motor control
Design support

Technical documents	Status
Verified Chipset TLE987x and IAUC100N04S6N022 Rev. 1.0 Application Note	available
Verified Chipset TLE987x and IAUC120N04S6N010 / IAUC100N04S6N015 / IAUC100N04S6N028 Application Notes	coming soon
Generic Power Evaluation Board User Guide (Preview)	available
Generic Power Evaluation Board User Guide (Full version) (access after product registration)	available

Design and simulation tools	Status
System SPICE simulation on Infineon Designer – Simulation for high-side MOSFET – Simulation for low-side MOSFET	available

Boards	Status
Generic Power Evaluation Board (12 V automotive motor control)	available

More info about products & design support:
www.infineon.com/TLE987x
www.infineon.com/automotivemosfet

Download and manage software & tools in the
Infineon Developer Center (IDC):
www.infineon.com/idc

Ask the community:
MOTIX™ MCU | 32-bit motor control SoC

All about MOTIX™ motor control ICs
www.infineon.com/motor-control-ics