



New Products Introduction

June2018

Application Kit for relay driven DC motor applications

TLE9844-2QX_APPKIT

TLS1 – New family for Automotive sensor supply

TLS102B0MB / TLS105B0MB

650 V TRENCHSTOP™ 5 in D2Pak (TO-263-3)

Unique, highest power density 650V IGBT in SMD package

Linear Voltage Regulators for Automotive Applications

TLS835D2ELVSE, TLS835B2ELVSE, TLS835B2ELV, TLS820B2ELVSE

LTE LNA with gain control

BGAU1A10, BGAU1A10

CoolMOS™ G7 and CoolSiC™ G6 in Double DPAK (DDPAK) package

IPDD60R190G7, IPDD60R150G7, IPDD60R125G7, IPDD60R102G7, IPDD60R080G7, IPDD60R050G7, IDDD04G65C6, IDDD06G65C6, IDDD08G65C6, IDDD10G65C6, IDDD12G65C6, IDDD16G65C6, IDDD20G65C6

Application Kit for relay driven DC motor applications

TLE9844-2QX_APPKIT



The TLE9844-2QX is part of our Embedded Power Products and belongs to the relay driver IC family. The TLE9844-2QX Appkit is designed to evaluate relay driven DC Motor applications. The space and cost optimized two layers PCB supports you to demonstrate an application near solution.

Features

- > 2-channel relay
- > Onboard debug interface
- > Automotive qualified relay driver IC (TLE9844-2QX) with integrated high-side switches

Benefits

- > Application near circuit for application software evaluation
- > The application kit includes an application near code example.

Competitive advantage

- > ARM M0 based SoC microcontroller with integrated LS and HS switches

Qualification

- > Automotive

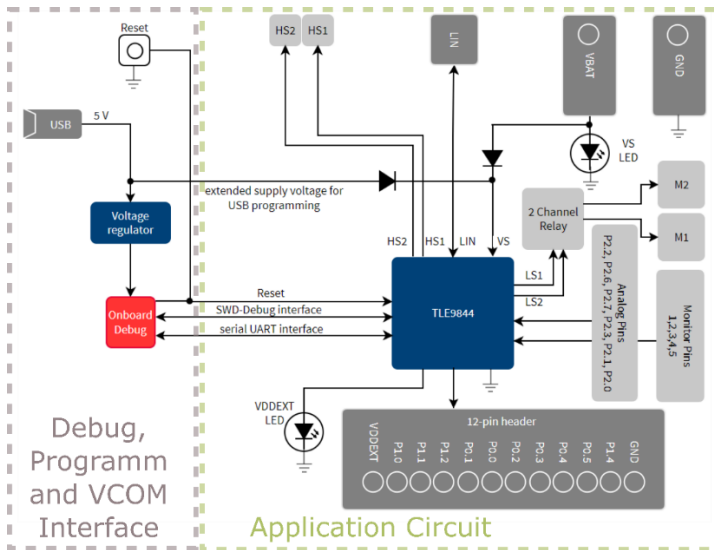
Target applications

Automotive Body and Comfort applications

Application examples:

- > Window lift
- > Sun roof

Block diagram



Products collaterals / Online support

- > Smart Window Lift Module [application](#)
- > User [manual](#)
- > TLE984x product family [page](#)
- > TLE984x product [brief](#)

Product overview

OPN	SP Number	Package
TLE98442QXAPPKITTOBO1	SP002235152	N/A

TLS1 – New family for Automotive sensor supply

TLS102B0MB / TLS105B0MB

The TLS10xB0 is a monolithic integrated low-dropout voltage tracking regulator. It provides an output voltage with 0,01% accuracy to respect of the ref voltage in a small SCT595-5 package.

The TLS10xB0 is designed to supply off-board systems, for example, sensors in powertrain management systems under the severe conditions of automotive applications. Therefore, the TLS10xB0 is equipped with additional protection functions against reverse polarity and short circuit to GND and battery. The TLS105M0BM is able to drive loads up to 50 mA and TLS102M0BM is able to drive loads up to 20 mA



Features

- > Very tight output tracking tolerance to reference. Maximum 5mV
- > Output voltage adjustable down to 2.0 V
- > Very low dropout voltage of typ. 250 mV at 50 mA
- > Very low current consumption of typ. 3 μ A in off mode
- > Only a small 1 μ F ceramic capacitor is required due to the improved control loop of the device which allows for an extreme fast regulation providing very good stability characteristics.

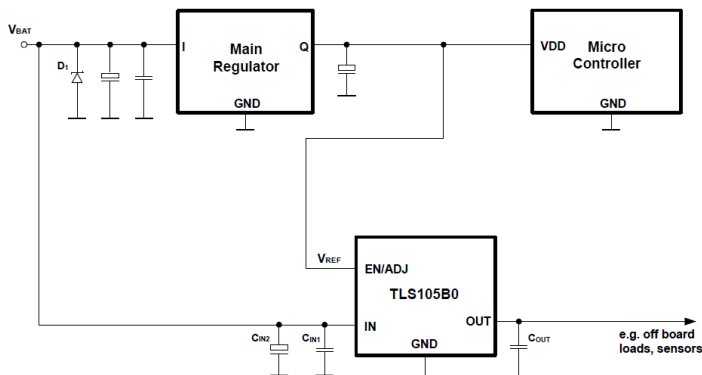
Internal protections make the device robust against immediate damage:

- > Short circuit protected output (to GND and to battery)
- > Reverse polarity protected input
- > Over temperature protection
- > Output current limitation

Competitive advantage

TLS10xB0MB devices have a best in class dynamic response to load and line transients. It provides full protection for the ECU and the sensors when those are placed off board, Short circuit protected output (to GND and to battery), reverse polarity protected input, over temperature protection and output current limitation.

Block diagram



Benefits

- > Reliable protection for ECU/sensor
- > Easy and accurate voltage replication
- > High flexibility/scalability
- > Lower design effort → design cost saving
- > Pin to pin compatible to TLE4250-2G

Qualification

- > Automotive

Target applications

The features make the TLS10xB0MB voltage tracking regulators perfectly suitable as automotive sensor supply and as high precision supply for off-board loads.

Application examples:

- > Protected off board sensor supply in HVAC, EMS, TCU, EPS, Braking, Transmission, Transfer case.
- > Heat/Voltage distribution
- > μ C controller supply

Products collaterals / Online support

- > Product [presentation](#)
- > Product [brief](#)

Product overview incl. data sheet link

OPN	SP Number	Package
TLS102B0MBHTSA1	SP001649012	PG-SCT595-5
TLS105B0MBHTSA1	SP001588610	PG-SCT595-5

650 V TRENCHSTOP™ 5 in D2Pak (TO-263-3)

Unique, highest power density 650 V IGBT in SMD package

Ultra-thin TRENCHSTOP™ 5 IGBT technology from Infineon allows higher power density in smaller chip size. Infineon is the first on the market able to fit 40 A 650 V IGBT with 40 A diode in D2Pak package – 25% higher than any other competitor offering maximum 30 A Duopack IGBT in D2Pak.

The new TRENCHSTOP™ 5 IGBT in D2Pak expands the limits of surface mounted devices to the higher power range competing now with D3Pak and through hole TO-247 packages.



Features

- > Highest power density 650 V IGBT in D2Pak footprint
- > Unique 40 A 650 V IGBT Duopack in D2Pak footprint– 25% higher than any other competitor
- > Best –in-class fast speed switching H5 or medium-speed optimized S5 TRENCHSTOP™ 5 IGBT technology

Benefits

- > Higher power design with D2Pak package
- > Upgrade of the available designs for higher power output
- > Less paralleling - > higher reliability
- > Smaller PCB, more compact system design, smaller weight

Competitive advantage

Unique 40 A 650 V IGBT Duopack in D2Pak footprint– 25% higher than any other competitor

Target applications

- > Welding
- > UPS
- > Battery Chargers
- > Solar
- > Drives

Value propositions

- > Higher power density in SDM D2Pak package – 25% higher than any competitor
- > 40 A IGBT co-packed with 40 A diode vs maximum 30 A IGBT + 30 A diode from competitor

Application examples:

- > Welding machine inverter HB topology
- > motor drive B6 topology

Completing products (P2S)

- > Gate driver: [EiceDRIVER™](#) 1ED Compact gate driver ICs

Products collaterals / Online support

- > Product [presentation](#)
- > Product family [page](#)
- > Product [brief](#)
- > PLECS Discrete IGBT Library – simulation [model](#)
- > IGBT TRENCHSTOP™ 5 650 V family D2PAK [training](#)

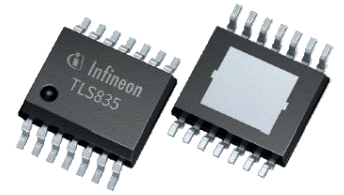
Product overview incl. data sheet link

OPN	SP Number	Package
IGB15N65S5ATMA1	SP001502560	PG-TO263-3
IGB20N65S5ATMA1	SP001502564	PG-TO263-3
IGB50N65S5ATMA1	SP001502566	PG-TO263-3
IGB50N65H5ATMA1	SP001509614	PG-TO263-3
IKB15N65EH5ATMA1	SP001502570	PG-TO263-3
IKB30N65ES5ATMA1	SP001502572	PG-TO263-3
IKB40N65ES5ATMA1	SP001502574	PG-TO263-3
IKB20N65EH5ATMA1	SP001502642	PG-TO263-3
IKB30N65EH5ATMA1	SP001502648	PG-TO263-3
IKB40N65EH5ATMA1	SP001502650	PG-TO263-3
IKB40N65EF5ATMA1	SP001509612	PG-TO263-3

Linear Voltage Regulators for Automotive Applications

TLS835D2ELVSE, TLS835B2ELVSE, TLS835B2ELV, TLS820B2ELVSE

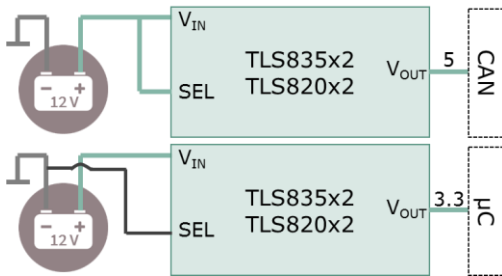
With current consumption of typically 20 μA the latest TLS820B2, TLS835B2 & TLS835D2 products are perfectly suited for use as supplies in BCM and HVAC applications and belong to the OPTIREG™ Linear product family. The ultra-low quiescent current helps our customers to meet the requirements given by OEMs.



Features

- > Enable and reset
- > Output voltage options: ADJ or Selectable (3.3 V or 5 V)
- > Maximum output current:
- > TLS835x2: 350 mA
- > TLS820x2: 200 mA
- > Current consumption: 20 μA typically
- > Drop voltage: 100 mV @ 100mA
- > Available in SSOP-14 package

Selectable Output Feature



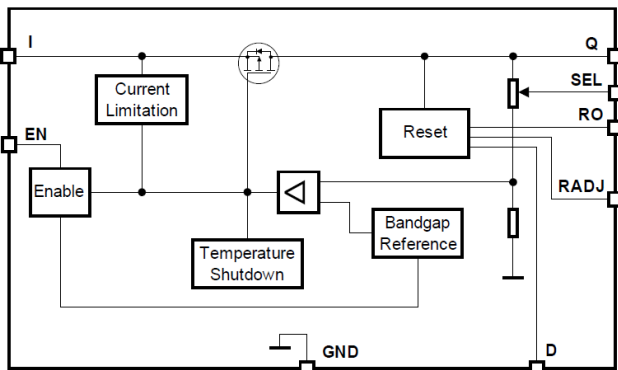
Competitive advantage

- > Selectable output voltage via SEL pin is a unique feature offering customers flexibility in their application
- > Scalable family with further products in TO-252 package planned in the future

Value proposition

- > System level cost saving due to excellent transient performance coupled with small ceramic output capacitor usage
- > Low failure rates in the field and less maintenance costs for customers due to extensive pre & post silicon application level verification

Block diagram



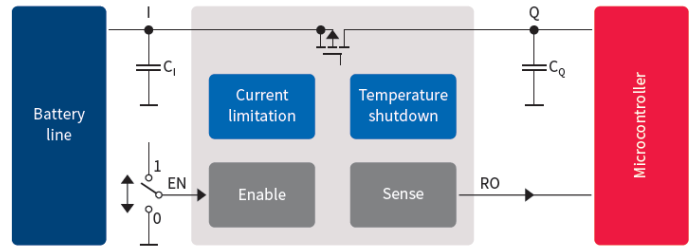
Benefits

- > Excellent transient robustness: Smaller input capacitors hence lower input filtering costs
- > Functional input voltage range starts at 3 V and very low dropout voltage: suitable for cranking applications
- > Stable with 1 μF output capacitor: PCB space and cost savings
- > Ultra-low quiescent current and current consumption: Power saving for battery

Target applications

- > Applications with direct battery connection
- > Automotive general ECUs
- > Dashboard, cluster, Infotainment
- > Body control modules
- > HVAC

Application schematic



Qualification

- > Automotive

Evaluation boards

- > TLS835D2ELVSE [BOARD](#)
- > TLS835B2ELVSE [BOARD](#)
- > TLS835B2ELV [BOARD](#)
- > TLS820B2ELVSE [BOARD](#)

Products collaterals / Online support

- > Product [presentation](#)
- > TLS820B2EL VSE product [page](#)
- > TLS835B2EL VSE product [page](#)
- > TLS835B2EL V product [page](#)
- > TLS835D2EL VSE product [page](#)

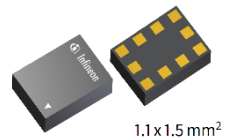
Product overview incl. data sheet link

OPN	SP Number	Package
TLS820B2ELVSEXUMA1	SP001589356	PG-SSOP-14
TLS835B2ELVSEXUMA1	SP001589358	PG-SSOP-14
TLS835B2ELVXUMA1	SP001589360	PG-SSOP-14
TLS835D2ELVSEXUMA1	SP001589362	PG-SSOP-14

LTE LNA with gain control

BGAU1A10, BGAU1A10

BGAU1A10 is a high gain LTE LNA family designed to significantly improve data rate. It includes an integrated gain control and bypass function that offers higher flexibility in the front-end. In high gain mode the BGAU1A10 offers best Noise Figure to ensure high data rates even on the LTE cell edge. Closer to the base station the bypass mode can be activated reducing current consumption. Thanks to the MIPI control interface, control lines are reduced to a minimum.



Features

- > Operating frequencies: 5.15 - 5.925 GHz
- > Insertion power gain: 20.5 dB
- > Gain dynamic range: 27 dB
- > Low noise figure: 1.6 dB
- > Low current consumption: 5.0 mA
- > Multi-state control: Gain- and Bypass-Modes
- > Small ATSLP leadless package

Benefits

- > Ensures higher LTE data rates due to high gain feature
- > Higher system flexibility due to integrated gain control
- > MIPI controlled device helps saving control lines in the system

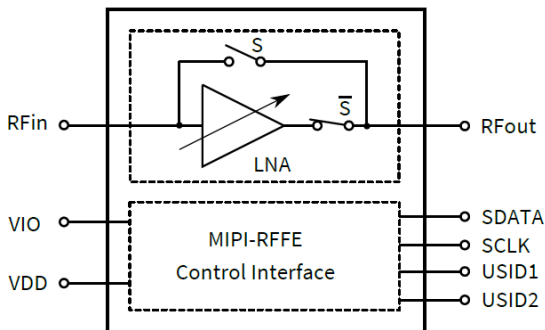
Competitive advantage

- > Multi gain LNA for 5GHz / 3.5GHz/ B41

Value proposition

- > LNA is a must at higher frequency
- > Moving LNA out to save ports and shrink RF IC
- > Adding additional Rx path on selected bands to further boost data rate

Block diagram

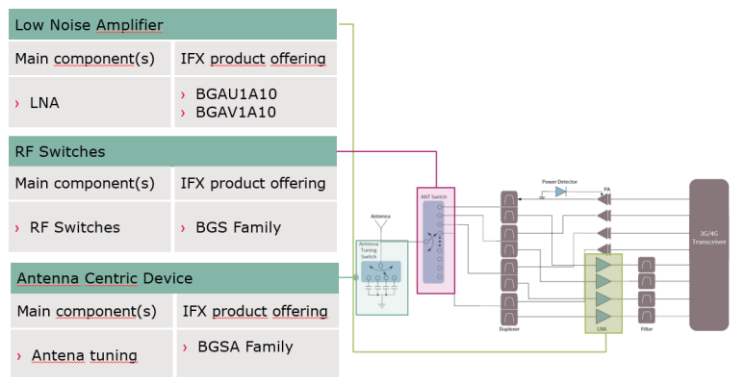


*Applicable to both devices

Target application with Completing products

- > Smart Phones

Application block diagram for RF front-end in a mobile phone



Products collaterals / Online support

- > Product [presentation](#)
- > BGAU1A10 product [page](#)
- > BGAU1A10 product [page](#)

Product overview incl. data sheet link

OPN	SP Number	Package
BGAU1A10E6327XTSA1	SP001628070	PG-ATSLP-10
BGAU1A10E6327XTSA1	SP001628074	PG-ATSLP-10

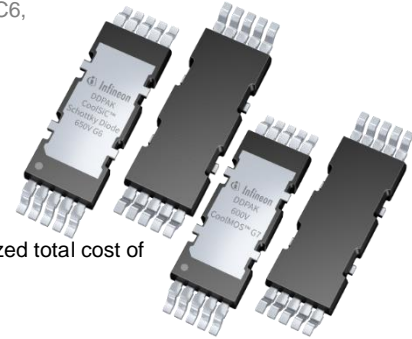
CoolMOS™ G7 and CoolSiC™ G6 in Double DPAK (DDPAK) package

IPDD60R190G7, IPDD60R150G7, IPDD60R125G7, IPDD60R102G7, IPDD60R080G7, IPDD60R050G7, IDDD04G65C6, IDDD06G65C6, IDDD08G65C6, IDDD10G65C6, IDDD12G65C6, IDDD16G65C6, IDDD20G65C6

Innovative top-side cooled SMD solution for high power applications

The benefits of the already existing high voltage technologies 600 V CoolMOS™ G7 superjunction (SJ) MOSFET and CoolSiC™ Schottky diode 650 V G6 get combined with the innovative concept of top-side cooling, providing a system solution of high current hard switching topologies and a high-end efficiency solution for LLCs.

This brand new packaging solution enables fast switching and high efficiency in reduced size and weight with a minimized total cost of ownership (TCO).



Features

Package related features:

- > First top side cooled SMD solution/innovative cooling concept
- > Inbuilt 4th pin Kelvin source configuration and low parasitic inductance
- > TCOB capability of >> 2.000 cycles, MSL1 compliant and total Pb free

CoolMOS™ G7 and CoolSiC™ G6 related features:

- > CoolMOS™ G7 offers BiC FOM $R_{DS(on)} \times E_{OSS}$ and $R_{DS(on)} \times Q_G$
- > CoolSiC™ G6 offers BiC V_F and FOM $Q_G \times V_F$

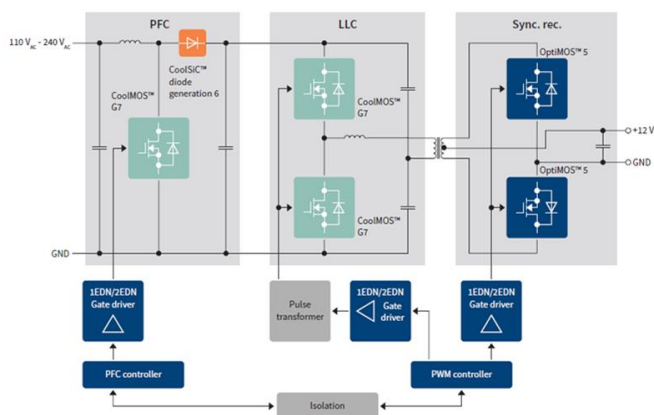
Competitive advantage

- > DDPAK enables innovative cooling concept
- > DDPAK further shapes the trend of using SMD packages in high power SMPS applications, highest efficiency and power density

Evaluation board

1600 W Server PSU Board: [EVAL_1K6W_PSU_G7_DD](#)

Block diagram



Benefits

Package related benefits:

- > Thermal decoupling of board and semiconductor allows to overcome thermal PCB limits
- > Reduced parasitic source inductance improves efficiency and ease-of-use
- > Enables higher power density solutions Exceeding the highest quality standards

CoolMOS™ G7 and CoolSiC™ G6 related benefit:

- > CoolMOS™ G7 and CoolSiC™ G6 as effective combination of the high-end efficiency market segment

Target applications

- > High power SMPS applications:
- > Server
- > Telecom
- > PC Power
- > Solar

Completing products

- > EiceDRIVER™ 1EDN TDI: [1END7550 and 1EDN8550](#)

Products collaterals / Online support

- > Product [presentation](#)
- > Double DPAK (DDPAK) package - product [brief](#)
- > Product family [page](#)
- > CoolMOS™ 7 - CoolSiC™ - CoolGaN™ [Selection guide](#)
- > Application [note](#)
- > Simulation [models](#)
- > 1600W PSU board – application [note](#)
- > [3d model](#)

Product overview incl. data sheet link

OPN	SP Number	Package
IPDD60R190G7XTMA1	SP001632844	PG-HDSOP-10
IPDD60R150G7XTMA1	SP001632838	PG-HDSOP-10
IPDD60R125G7XTMA1	SP001632876	PG-HDSOP-10
IPDD60R102G7XTMA1	SP001632832	PG-HDSOP-10
IPDD60R080G7XTMA1	SP001632824	PG-HDSOP-10
IPDD60R050G7XTMA1	SP001632818	PG-HDSOP-10
IDDD04G65C6XTMA1	SP001679784	PG-HDSOP-10
IDDD06G65C6XTMA1	SP001679786	PG-HDSOP-10
IDDD08G65C6XTMA1	SP001679788	PG-HDSOP-10
IDDD10G65C6XTMA1	SP001679790	PG-HDSOP-10
IDDD12G65C6XTMA1	SP001679792	PG-HDSOP-10
IDDD16G65C6XTMA1	SP001679794	PG-HDSOP-10
IDDD20G65C6XTMA1	SP001679796	PG-HDSOP-10