



Infineon Constant Current Control ICs and new TLE92464EDHP

Q1 FY2021/22



Infineon Constant Current Control ICs

NEW

TLE92464EDHP

- › 4 Low side Channels
- › Temperature T_j up to 175 °C
- › ICC-Control
- › <1%, initial ±3mA
- › R_{shunt} = 140mΩ / R_{DSon} = 150mΩ



TLE92464ED

- › 4 Low side Channels
- › Temperature T_j up to 175 °C
- › ICC-Control
- › <1% Accuracy
- › R_{shunt} = 140mΩ / R_{DSon} = 150mΩ



TLE92466ED


- › 6 Low side Channels
- › Temperature T_j up to 175 °C
- › ICC-Control
- › <1% Accuracy
- › R_{shunt} = 140mΩ / R_{DSon} = 150mΩ



Infiniteon Constant Control IC family is growing with new solutions for all transmission types



	TLE92464ED	TLE92466ED	TLE92464EDHP
Number of Channels	4	6	4
Accuracy	$\pm 1\%$		$< 1\%$, initial $\pm 3\text{mA}$
Drive Type	Low Side		
Switching FET	integrated		
Shunt	integrated		
Functional Safety	ISO26262 ASIL-C		
AEC Q100	Grade 0		
$T_{J(\text{max})}$	175°C		
Current Measurement Range	2A		
Parallel Mode	3.2A		
Diagnostic	Over current		
	Open Load		
	Short to BAT		
	Short to GND		
Protection	Supplies Out of Range		
	Over current Shutdown		
	Over Temperature Shutdown		
	Overvoltage Shutdown: VIO, VDD		

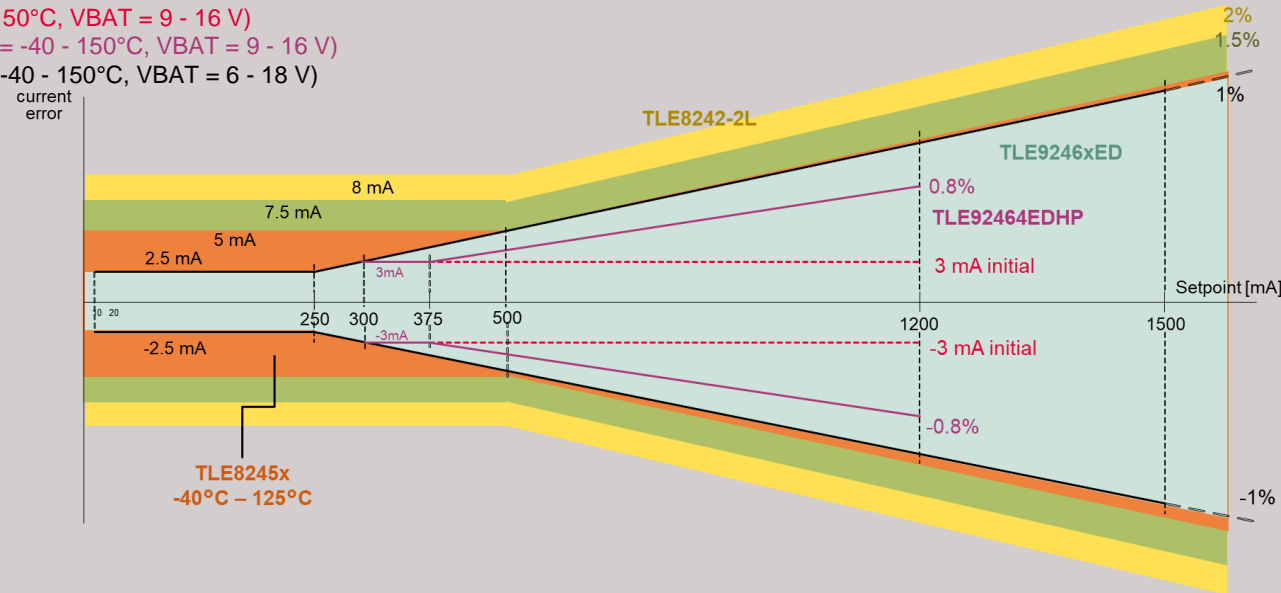
Package	
PG-DSO-36-72	
Body Size	
10mm x 10mm	



TLE92464EDHP offers higher current measurement accuracy to reduce TCU calibration efforts and to enable new requirements

TLE92464EDHP

- <±3 mA up to 1200 mA initially ($T_J = -40 - 150^\circ\text{C}$, $V_{BAT} = 9 - 16\text{ V}$)
- <±0.8% up to 1200 mA including aging ($T_J = -40 - 150^\circ\text{C}$, $V_{BAT} = 9 - 16\text{ V}$)
- <±1% up to 1500 mA including aging ($T_J = -40 - 150^\circ\text{C}$, $V_{BAT} = 6 - 18\text{ V}$)



Higher accuracy compared to previous generation solenoid drivers, that enables:

- Reduction of TCU calibration efforts saving cost and time
 - Savings due to elimination of end of line temperature calibration equipment
- Fulfilling OEM's requirements
- New TCU applications that require higher accuracy

Benefits of Infineon TLE9246xED and TLE92464EDHP

High level of integration and System cost reduction

- › MOSFET and Shunt integrated into single package
- › Reduces external components and PCB space → Lower System Cost

High performances

- › High current measurement accuracy reduces transmission control unit calibration efforts
- › Supporting extreme harsh environments thanks to AEC-Q100 Grade 0 qualified ($T_j = -40^{\circ}\text{C}$ to 175°C)

Ease of design & scalability

- › 4-channel and 6-channel devices available in same package
- › Same PCB footprint can be shared between the 4-channel and 6-channel devices by using zero-ohm jumpers

Long term availability

- › Long term production plans to support automotive production cycles

Developed according to ISO 26262

- › Enables development of ASIL D systems
- › Integrated redundant current feedback path
- › Significantly reduces external components → Lower System Cost



Four Channel Constant Current Solenoid Driver TLE92464EDHP


Features

- Four low side channels with integrated FETs
- Integrated sense resistors 140 mΩ
- Avg. load current per channel up to 1.5A, in parallel channel configuration 2.7A
- Dither generator allows up to 1.8A peak average current
- Current measurement range 0 mA to 2000 mA
- Temperature range $T_j = -40^{\circ}\text{C}$ to 175°C
- <1%, initial $\pm 3\text{mA}$**
- 15bit set-point resolution
- Integrated dither generator
- Direct Drive

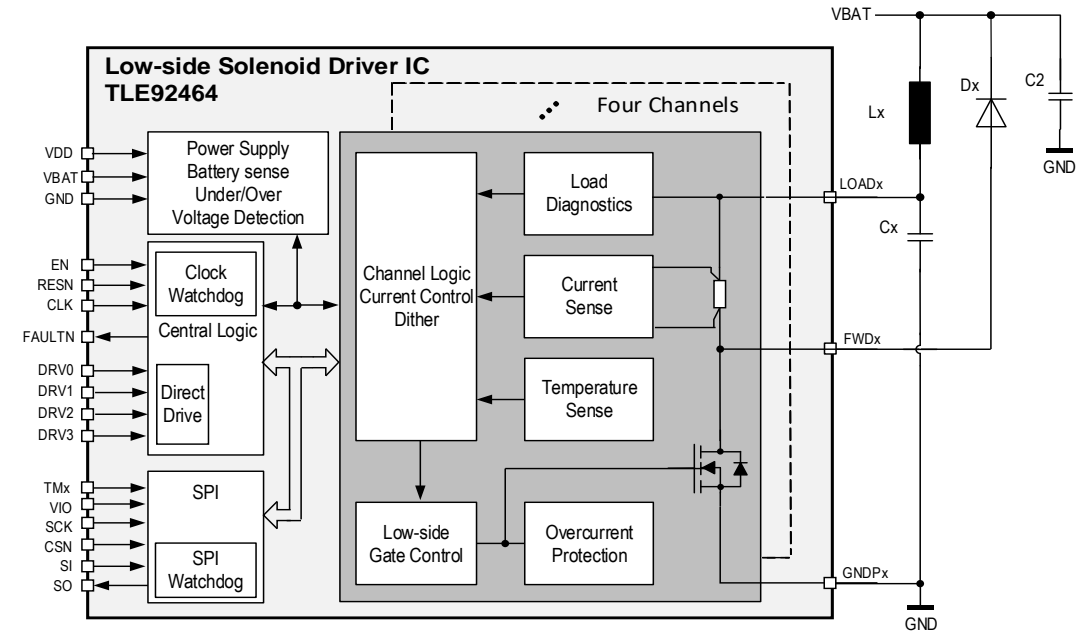


Safety Features:

- ISO26262 compliant, ASIL C (D)
- AEC-Q100 Grade 0 qualified
- Integrated 2nd current feedback path
- 32 bit SPI with 8 bit CRC and SPI watchdog
- Diagnostic functions in ON and OFF state
- Battery voltage measurement and overvoltage shutdown
- PLL for external clock input and CLK watchdog

Package	 In development
PG-DSO-36-72	
Body Size	
10mm x 10mm	

Block Diagram



Potential applications

- Variable force solenoids (e.g. automatic transmission solenoids and e-Axle)
- Exhaust gas recirculation
- Idle air control
- Vapor management valve
- Suspension control
- Relay driver



Datasheet available and productive material available

TLE92464ED and TLE92466ED are online and evaluation boards are available for ordering



On infineon.com you will find: product datasheet, evaluation board, user manual and software

Home > Products > Automotive System IC > Constant Current Control IC for Transmission > TLE92464ED

TLE92464ED NEW

Overview
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The TLE92464ED is a flexible, monolithic four channel solenoid driver IC designed for the control of four linear solenoids in automatic transmission, electronic stability control, and active suspension applications.

The device controls the current through inductive loads programmed from 0 to 1500mA with a resolution of 1800mA. The dither generator superimposes a dither on the programmed current setpoint and frequency on the programmed current setpoint. The device includes the drive transistors and the dither generator. TLE92464ED is ISO 26262 compliant.

Summary of Features

- Four independent low side channels with integrated MOSFETs (RDSon = 115 mΩ)
- <1% current control accuracy
- Programmable setpoint from 0mA to 1.5A
- Load current including dither 1.8A
- Current in parallel channel mode 2.7A

TLE92464ED Data Sheet
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TLE92464ED EVALBOARD

Overview
Parametrics
Documents
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Support

TLE92464ED evaluation board provides a quick pick and place solution for customer's lab evaluations.

The Evaluation board comes with the Solenoid Driver TLE92464ED and all required external components. The Evaluation PCB is designed on an Arduino Formfactor which makes it controlled by all Arduino compatible microcontroller boards, e.g.: Infineon XMC1100 Boot Kit, Infineon XMC4700 Delay Kit, Arduino Shield Boards, Arduino Uno. Please note that the microcontroller board is not included in the evaluation board.

Summary of Features

- Four independent low side channels with integrated MOSFETs (RDSon = 115 mΩ)
- <1% current control accuracy
- Programmable setpoint from 0mA to 1.5A
- Load current including dither 1.8A

TLE92464ED/TLE92466ED Evalboard User Manual
> EN < Share
01_00 | 2021-05-25 | pdf |
2.8 MB

ICC Tool

Design in tool for Infineon's new solenoid driver family





Part of your life. Part of tomorrow.