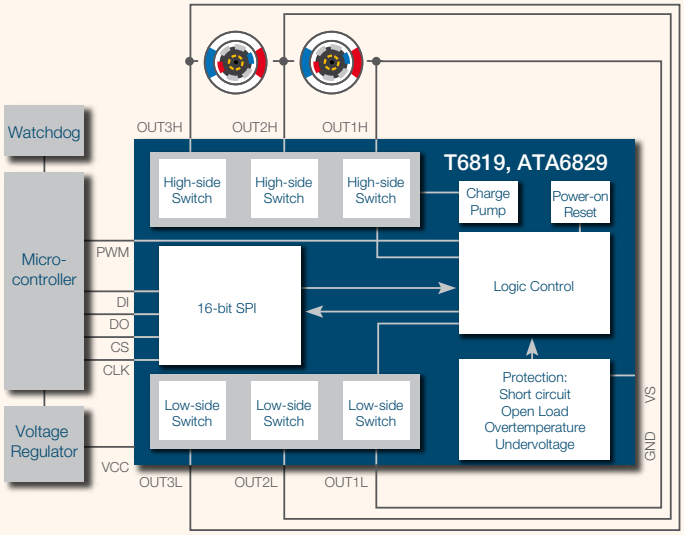
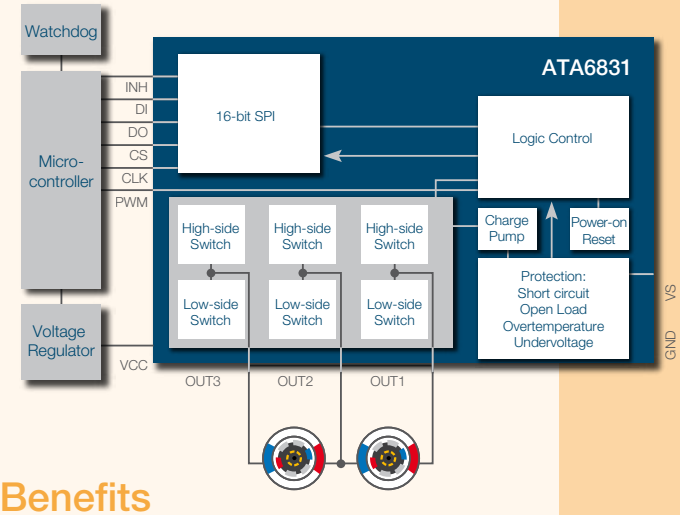
Dual Triple DMOS Output Drivers with Serial Input and PWM Control

T6819, ATA6829, ATA6831

The T6819/ATA6829/ATA6831 are fully protected driver interfaces designed in smart power BCDMOS technology. They are used to control different loads by a microcontroller in automotive and industrial applications. Each driver of the T6819/ATA6829 is freely configurable and can be PWM controlled separately from a standard serial data interface. The power stages of the ATA6831 are combined to 3 half bridges. Due to the ATA6831's enhanced PWM signal of up to 25 kHz, the DC motor control is carried out without any audible noise caused by the PWM signal. All kinds of loads such as bulbs, resistors, and inductors can be combined.





Features

- Supply Voltage up to 40V
- T6819/ATA6829: 3 High-side and 3 Low-side Drivers Usable as Single Outputs or Half Bridges
- ATA6831: 3 Half Bridges
- Output Currents up to 1A/1.5A
- Various Diagnostic Functions
- SPI up to 2 MHz Clock Frequency
- SO16/QFN18 Power Package with Heat Slug

Benefits

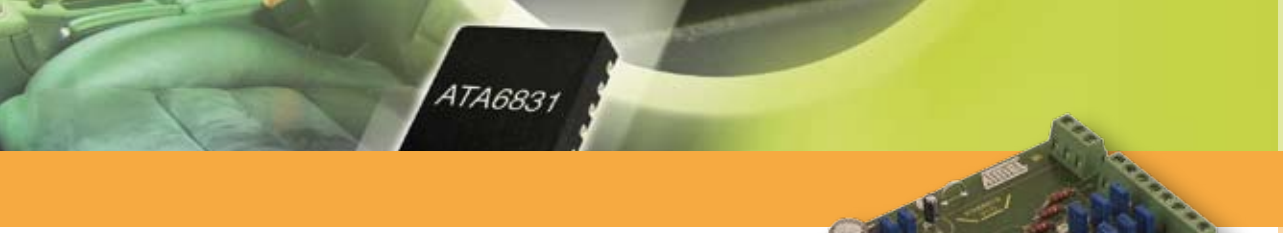
- No Shoot-through Current
- Selective Overtemperature Prewarning and Protection for Each Switch
- PWM Capability for Each Output Controlled by External PWM Signal
- ATA6831: Enhanced PWM Frequency of up to 25 kHz for Noise Elimination
- Capability to Control 3-phase Motors

Applications

- Various Automotive and Industrial Applications Such as Flap Control or Light Dimming
- Switches all Kinds of Loads Such as DC Motors, Bulbs, Resistors and Inductors

DC Motor Control Systems

The IC design especially supports the application of H-bridges to drive brush/brushless DC motors. Protection is guaranteed regarding short-circuit conditions, overtemperature and undervoltage.



Tools

PC-controlled application boards ATAB6819/29/31 are available. Due to the pin compatibility of ATA6829 and T6819, the same board can be used for both ICs. Using the application board, loads can easily be adapted via row connector pins. The design software controls the application board's SPI interface via the PC parallel port. The design kits also include everything else needed to start operation: a PC link cable 25-lead 1:1, an application note, and the datasheet. The application board can be ordered online at http://www.atmel.com/products/Auto/ (go to tools; ATA6819 and ATA6831).

Ordering Information

Extended Part Number	Driver Type	Package	Remarks
T6819-TBQY	Dual Triple	SO16	4k Power Package, Tape & Reel, Pb-free
T6819-TBSY	Dual Triple	SO16	560 Power Package, Tube, Pb-free
ATA6829-TS3QY	Dual Triple	PSO16	4k Power Package with Heat Slug, Tape & Reel, Pb-free
ATA6829-TS3SY	Dual Triple	PSO16	560 Power Package with Heat Slug, Tube, Pb-free
ATA6831- PIQW	Tripe Half Bridge	QFN18	6k Power Package with Heat Slug, Tape & Reel, Pb-free
ATA6831-PIPW	Tripe Half Bridge	QFN18	1.5k Power Package with Heat Slug, Tape & Reel, Pb-free
ATA6831-PISW	Tripe Half Bridge	QFN18	750 Power Package with Heat Slug, Tape & Reel, Pb-free

Driver Family Overview

Part Number	Description	Remark	Min. Current per Output (mA)	Supply/ Operating Voltage (V)	R_{dson} HS/LS (Ohm)	Over-voltage Detection	Open Load Detection	Package
U6815BM	Dual Hex 6HS/6LS		600	40/18	2.0/1.5	Yes	Off	SO28
T6816	Dual Hex 6HS/6LS		600	40/40	2.0/1.5	No	Off	SO28
T6817	Dual Triple 3HS/3LS		600	40/18	2.0/1.5	Yes	Off	SSO20
T6818	Triple Half-bridge 3HS/3LS		1500	40/40	1.1/1.1	No	On	SO14
T6819	Dual Triple 3HS/3LS	PWM	1500	40/40	1.1/1.1	No	Off	SO16
U6820BM	Dual Quad 4HS/4LS		27	45/18	10/7	No	Off	SO16
ATA6824	H-bridge 2HS/2LS	Ext. MOSFET Driver	(Ext.)	40/18	(Ext.)	Yes	(Ext.)	QFN32
ATA6826	Triple Half-bridge 3HS/3LS		1000	40/40	1.5/1.5	No	On	SO14
ATA6827	Triple Half-bridge 3HS/3LS	High Temperature (up to T_J=200°C)	1000	40/40	1.5/1.5	No	On	QFN18
ATA6828	Triple Half-bridge 3HS/3LS	Power Package	1500	40/40	1.1/1.1	No	On	SO14 with Exposed Die
ATA6829	Dual Triple 3HS/3LS	PWM Power Package	1500	40/40	1.1/1.1	No	Off	SO16 with Exposed Die
ATA6831	Triple Half-bridge 3HS/3LS	PWM (25 kHz)	1000	40/40	1.5/1.5	No	Off	QFN18
ATA6832	Triple Half-bridge 3HS/3LS	PWM (25 kHz) High Temperature (up to T_J=200°C)	1000	40/40	1.5/1.5	No	Off	QFN18

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