PRODUCT BRIEF

SPOC™ Smart Guard 6ch 12V

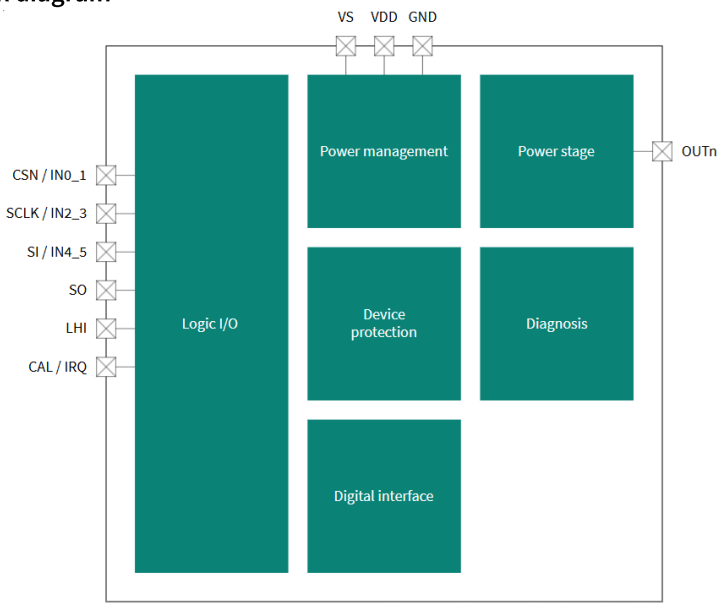
6-channel high-side switches with SPI, tailored for low current loads in Zone Control and ADAS applications

Modern, decentralized, and zonal power distribution architectures are increasingly demanding in terms of complexity, reliability, and efficiency. In this context, the SPOC™ Smart Guard devices emerge as a highly integrated and cost-effective solution. Its two fully compatible variants (with $R_{DS(on)}$ 133 mΩ and 500 mΩ) are tailored to meet the requirements of low current loads, particularly in Zone Control and ADAS applications.

With its feature and channel integration minimizing system cost, the SPOC™ Smart Guard family offers a highly integrated solution in a very small TFDSO-16 package, allowing for significant optimization of the system layout. The devices' precise, per-channel configurable current limitation, and their ability to address loads up to 1 A per channel (BTS81000-SSGI-6ET), or up to 3x 2 A with parallel mode, make them an ideal choice for modern automotive power distribution systems. The devices offer a daisy-chain capable 8-bit SPI interface, allowing for full software configurability and advanced diagnosis, while also meeting the ISO 26262 standard for functional safety. This ensures a high level of reliability and safety in applications that require advanced power management.

In summary, The SPOC™ Smart Guard's high integration of features, which can be independently configured per channel, provides a unique set of benefits, enabling designers to create more efficient, reliable, and cost-effective power distribution systems.

Block diagram





Key features

- $R_{DS(on)}$ range 133-500 mΩ
- Up to 28 V operating voltage
- 6 channels
- Automotive qualified, AEC-Q100
- ISO 26262-compliant
- Capacitive Load Switching
- Adjustable current limitation (per channel)
- System & self-protection
- Digital diagnosis incl. current sense
- Limp home mode & idle mode
- Configurable restart strategy
- Small TFDSO-16 package

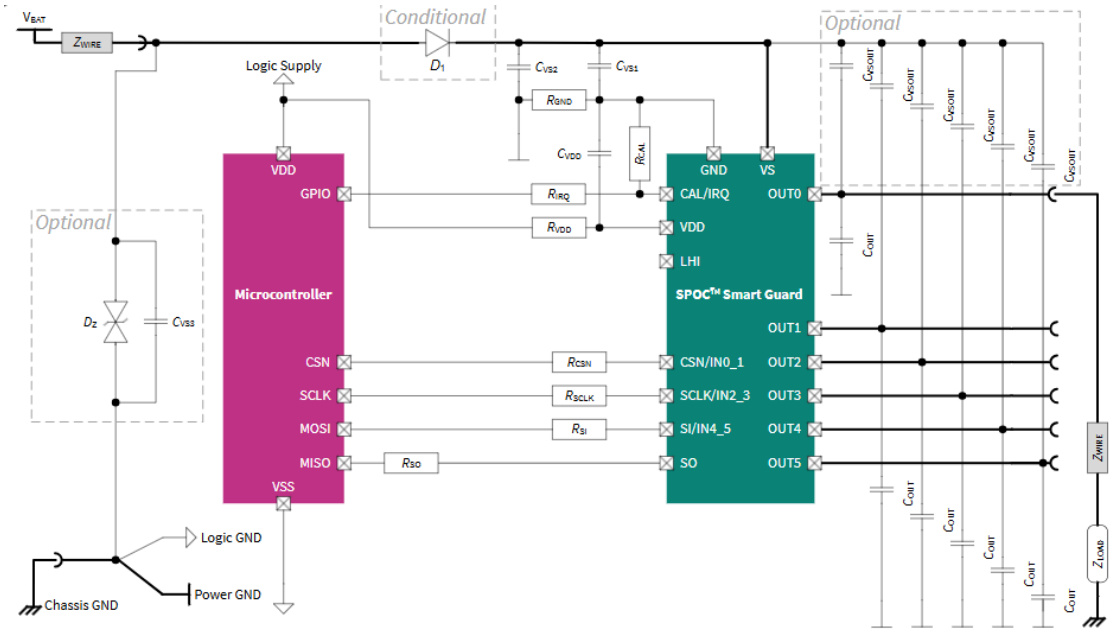
Key benefits

- High flexibility and configurability
- PCB area savings
- Support of active during parking
- Support of predictive maintenance
- Pin and footprint compatibility



www.infineon.com/spocsmartguard

Application diagram



SPOC™ Smart Guard 6ch product family

Product name	RDS(on) (typ) [mΩ]	R DS(on) (max) @ Tj = 150°C [mΩ]	Nominal load current per channel [A]	Typical adjustable overcurrent protection range @ Tj = -40°C [mA]	EAS [mJ]	Nominal operating voltage range [V]	Extended operating voltage range [V]	Package
BTS81000-SSGI-6ET	133	230	1	136 – 1850	12	5 – 18	3.5 - 28	TFDSO-16 (4.4 x 2.8 mm)
BTS85000-SSGI-6ET*	600	1000	0.45	75 – 1050	tbd	5 – 18	3.5 - 28	TFDSO-16 (4.4 x 2.8 mm)

*product under development, specs based on target data sheet v.0.40

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