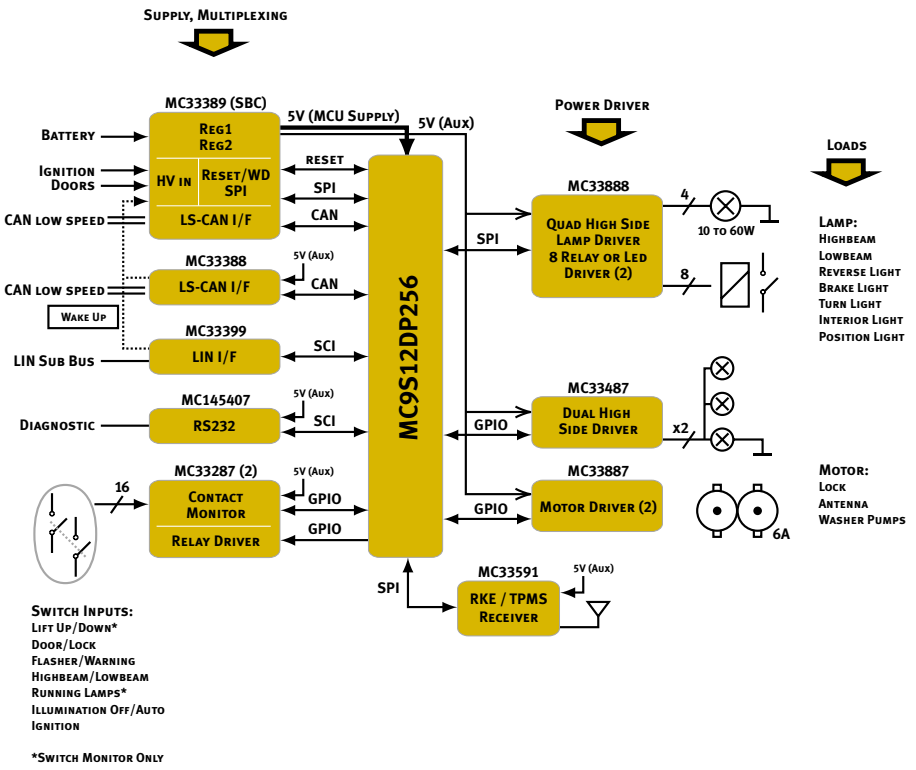
MOTOROLA

Automotive Body Control

- Ease of System Design
- Diagnostic Capabilities
- Reduced Part Counts



Innovative Automotive Products Demonstrated in Body Control System

The Body Control System showcases new and innovative Motorola devices in a powerful, reliable solution with enhanced diagnostic capabilities. These innovative products allow automotive engineers to design faster, more cost-efficiently, and to make an easy transition from mechanical to electrical systems. Motorola's leading-edge body control IC solutions are "smart" products providing designers with superior diagnostic abilities, high reliability and reduced part counts. The system capabilities of these ICs are optimized for the rugged automotive environment. Motorola's first advanced, high performance HC12, 16-bit MCU with automotive FLASH and six multiplex network modules is the master governing unit in a system where all the ICs have intelligence. Designed to demonstrate the expanding demands of body control architecture, the Body Control System includes a hub for 2 CAN networks, a LIN sub-bus, a short range RF receiver, high current silicon switches, and up to 30 switch inputs. This reliable, low-power solution has self-protected switching devices that meet the high power demands of lighting. To find out more about the design features and devices of this high-performance, scalable solution, visit our automotive home page at **motorola.com/semiconductors/automotive**.

MOTOROLA digital dna™

intelligence everywhere™

High Performance Microcontroller

Features	Suggested Device	Benefits
• Next generation HC12 core, 25 MHz operation • 256K Flash • 12K RAM • 4K EEPROM • 2-5 x MSCAN 2.0, J1850 • 8-Ch Timer • 2 SCI, 3 SCI, IIC • 2 x 8-CH, 10-bit ATD converters	MC9S12DP256	• First device in full family, ranging from 32K to 256K • Improved performance with automated program/erase algorithm • Ideal for CAN, J1850, and LIN gateway applications • Expanded instruction set and addressing modes improves code efficiency • Single 5V power supply • Background debug mode module allows full speed in-circuit device analysis

High Performance Analog

Application	Suggested Device	Key Features/Benefits
Quad High Side, Octal Low Side Switch	MC33888	• Network controllable • On-board diagnostics & ability to communicate faults to MCU • Soft-fail: balance of system continues to work in the event of a single (bulb) failure • Small footprint • On-board protection (thermal, over-voltage, over-current) • Integral jump start, reverse battery protection • Ground disconnect protection • Current sensing with high accuracy for bulb failure detection or loads monitoring
System Base Chip	MC33389	• Dual voltage regulator • Low speed CAN • 3 wakeup inputs • Integral system protection functions
Low Speed CAN Interface	MC33388	• CAN low speed fault tolerant physical interface • Wakeup input • 5V & 12V battery supply • Control of external voltage regulator • Very low power, 15µA standby
LIN Interface	MC33399	• LIN single wire physical interface • Wakeup input pin • Control of external voltage regulator • Very low power, 20µA standby
Contact Monitor	MC33287	• Contact monitoring • Dual 500µA low side switch • 8 High voltage input triggers
Dual High Side Driver	MC33487	• Dual 20m ohm High side driver with current sense • Two 4.5A outputs • Very low power, 10µA standby • Integral jump start, reverse battery protection • Ground disconnect protection • Current sensing with high accuracy for bulb failure detection or loads monitoring
Automotive H-Bridge	MC33887	• H-Bridge with sleep mode and current sense • Short-circuit shutdown for output currents over 8A • Small footprint, 9mm 44-Lead QFN • Very low power, 25µA standby
RKE / Tire Pressure Monitoring System (TPMS) UHF Receiver	MC33591	• 315 / 434 / 868 MHz • PLL tuned UHF receiver • ASK/FSK operation • Low power operation

BR1871/D

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