

Power management system IC

Data brief

Features

- One 5 V low-drop voltage regulator (100 mA, continuous mode)
- Low standby current: V_{BAT} -standby, 7 μ A; V_1 -standby, 45 μ A
- Window watchdog and fail-safe functionality
- Configurable fail safe output
- Programmable reset threshold (4.6 V, 3.5 V)
- VS monitoring / temperature measurement
- LIN 2.1 compliant (SAEJ2602 compatible) transceiver
- High-speed LIN Flash mode up to 100 kbit/s
- ST SPI interface for mode control and diagnostic
- 2 high-side drivers for e.g. LED or HALL ($R_{DSon,typ} = 7 \Omega$)
- 2 relay drivers ($R_{DSon,typ} = 2 \Omega$)
- Outputs are short-circuit protected
- Direct drive feature for high-sides
- Temperature warning and thermal shutdown



Applications

- Automotive ECU such as door zone and body control modules.

Description

The L99PM60J is a power management system IC containing one low-drop regulator direct drive feature for high-side drivers and a LIN 2.1 compliant SAEJ602 transceiver.

The integrated standard serial peripheral interface (SPI) controls all L99PM60J operation modes and provides driver diagnostic functions.

Table 1. Device summary

| Package | Order codes | |
|-------------|-------------|---------------|
| | Tube | Tape and reel |
| PowerSSO-16 | L99PM60J | L99PM60JTR |

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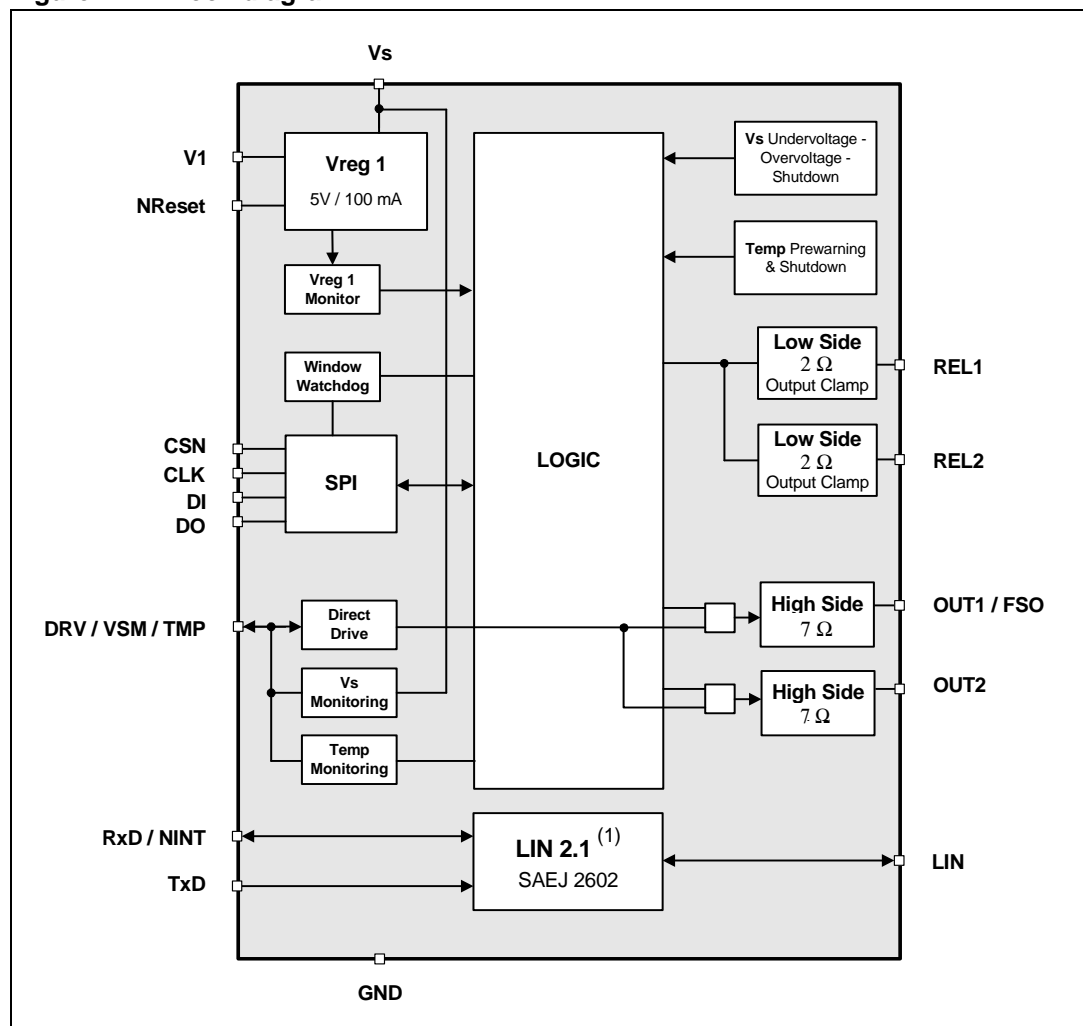
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1 Block diagram

Figure 1. Block diagram



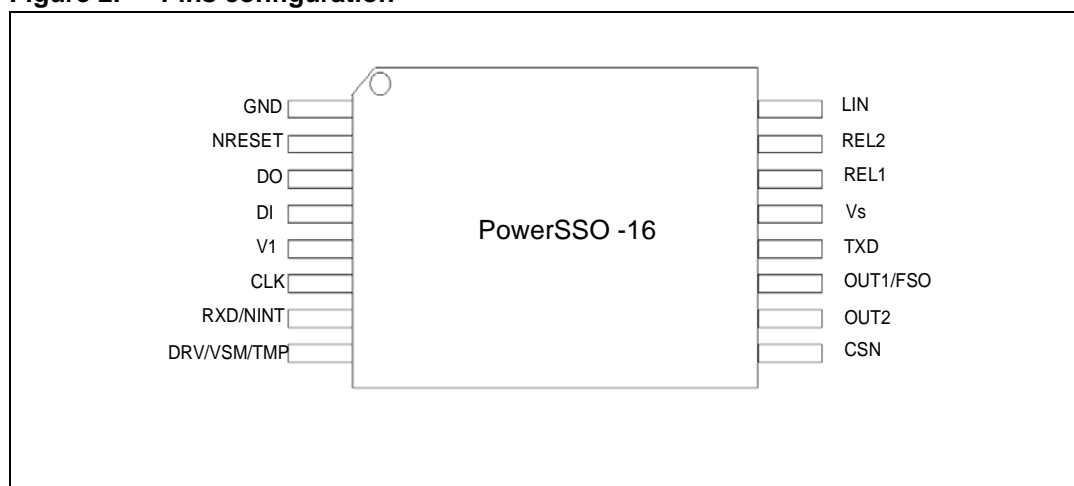
1. LIN 2.1 compliant

2 Pin definitions and functions

Table 2. Pins definitions and functions

| Pin | Symbol | Function |
|-----|----------------|--|
| 1 | GND | Ground |
| 2 | NRESET | NRESET output to microcontroller; internal pull-up of typ. 100 K Ω (reset state = low) |
| 3 | DO | SPI: serial data output |
| 4 | DI | SPI: serial data input |
| 5 | V ₁ | Voltage regulator 1 output: 5 V supply e.g. microcontroller |
| 6 | CLK | SPI: serial clock input |
| 7 | RXD/NINT | Receiver output of the LIN 2.1 transceiver or interrupt: |
| 8 | DRV/VSM/TMP | Direct drive for high-side drivers OUT1/OUT2; V _S and temperature monitoring |
| 9 | CSN | SPI: chip select not input |
| 10 | OUT2 | High-side drivers (7 Ω , typ.) : to supply e.g. LED's, HALL sensors, external contacts |
| 11 | OUT1/FSO | High-side driver (7 Ω , typ.) : to supply e.g. LED's, HALL sensors, external contacts. Default configuration is Fail Safe output. |
| 12 | TXD | Transmitter input of the LIN 2.1 transceiver |
| 13 | V _S | Power supply voltage |
| 14 | REL1 | Low-side driver (2 Ω typ.): e.g. relay |
| 15 | REL2 | Low-side driver (2 Ω typ.): e.g. relay |
| 16 | LIN | LIN bus line |

Figure 2. Pins configuration



3 Revision history

Table 3. Document revision history

| Date | Revision | Description of changes |
|-------------|----------|------------------------|
| 08-Feb-2010 | 1 | Initial release. |
| 24-Sep-2013 | 2 | Updated disclaimer. |

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