

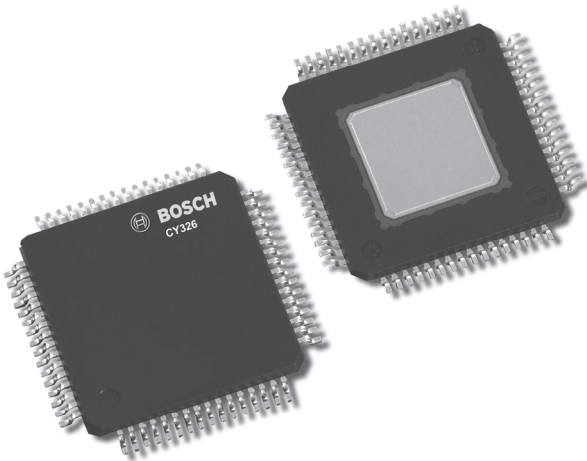
Automotive Electronics

Product Information

CY326 – System Basis Chip



BOSCH
Invented for life



Customer benefits:

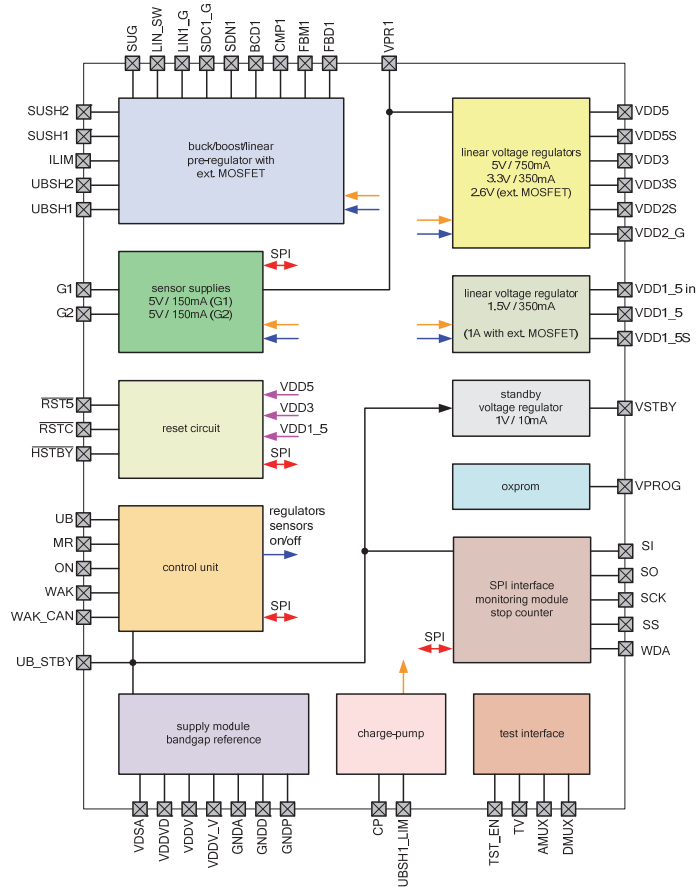
- ▶ VDA level 3 watchdog
- ▶ 5V independent sensor supplies
- ▶ Designed for Freescale or Infineon μ C Families

CY326 is designed for use either in a permanently supplied system or in a non-permanently supplied system. With a configurable step-up/step-down/linear pre-regulator, two linear power regulators, one linear regulator for the μ C core voltage, extendible for high current application via external power MOS cascade including 2.6V linear regulator and several peripheral inputs and outputs, the CY326 is a highly integrated power circuit designed for supply engine management controllers and signal processors. The 1V standby regulator also enables the use of Freescale μ Cs. An SPI interface enables simple communication with the μ C.

Features

- ▶ 550KHz step-up/step-down converter as pre-regulator with external transistors, step-down converter also configurable as linear regulator.
- ▶ 5.0V \pm 2% linear regulator 750mA (includes the 350mA of 3.3V)
- ▶ 3.3V \pm 2% linear regulator 350mA
- ▶ 2.6V \pm 3% linear regulator with external MOS transistor
- ▶ 1.5V \pm 2% linear regulator 350mA (extendible to 1A with external MOS cascode)
- ▶ Two independent sensor power supplies 150mA (tracking to VDD5 \pm 5mV)
- ▶ Co-ordinated soft start-up of all regulators
- ▶ Main relay output stage with integrated clamping and diagnosis
- ▶ Controlling of voltage regulators, sensor power supplies and main relay drive
- ▶ Reset circuit with additional external reset
- ▶ 1.0V \pm 10% standby linear regulator 10mA
- ▶ Low quiescent current
- ▶ VDA level 3 watchdog
- ▶ SPI interface
- ▶ 22 bit stop counter with 1s resolution (incl. wake-up capability)
- ▶ Wake-up input
- ▶ Ignition input (T.15 input)
- ▶ Wake-up input for CAN signal (compatible to TJA 1041)
- ▶ Packages: TQFP64 w/ exposed pad, bare die

Block diagram



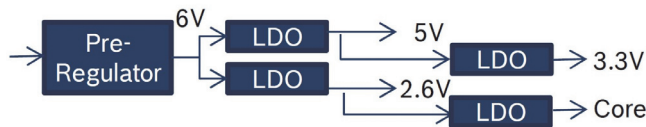
Maximum ratings

| Parameter | Min | Max | Unit |
|--------------------------------|------|------|------|
| Battery voltage | -0.3 | 40 | V |
| Sensor supply outputs | -1 | 32 | V |
| Main relay control | -0.3 | 36 | V |
| Operating junction temperature | -40 | 150* | °C |
| ESD HBM | -2 | 2 | KV |
| ESD MM | -200 | 200 | V |
| Storage temperature | -55 | 125* | °C |

* Bare die 170°C

Typical operating conditions

| Pre-regulator in linear mode | |
|--|-----------------------------|
| Battery Voltage | 5.5V...40V |
| Pre-regulator in buck converter mode (1 inductivity) | |
| Battery Voltage | 5.5V...40V |
| Maximum output current | 1.4A |
| Switching frequency | 550kHz |
| Pre-regulator in buck/boost mode (2 inductivities) | |
| Battery Voltage | 4V...40V |
| 5V regulator VDD5 | |
| Output voltage | 5V ±2% |
| Undervoltage reset level | 4.52V |
| Maximum current | 750mA |
| 3.3V regulator VDD3 | |
| Output voltage | 3.3V ±2% |
| Maximum current | 350mA |
| 2V regulator (external transistor) | |
| Output voltage | 2.64V ±3% |
| Maximum current | 1.2A |
| Core voltage regulator | |
| Output voltage | 1.2V / 1.3V / 1.525 V ±30mV |
| Undervoltage reset level | -7.5% |
| Maximum current w/ external transistor | 350mA 1A |
| Standby voltage regulator (external transistor) | |
| Output voltage | 1.05V ±3% |
| Maximum current | 10mA |
| Sensor supplies | |
| Output voltage | VDD5 ±5mV |
| Maximum current per channel | 150mA |
| Max. capacitive load (100mA) | 1.6µF |
| Standby current | |
| Stop counter off | 53µA |
| Stop counter on | 85µA |



Regional sales contacts

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