► LIN transceiver with voltage regulator and watchdog E910.48

FEATURES

- ► Operating voltage range (VS) 3V to 27V
- ► Two selectable output voltages: 5V and 3.3V ±2.0%
- ► Output current 150mA
- ► Reset impulse durations (10ms, 100ms) and threshold levels are programmable
- ► Selectable watchdog windows:
  Fixed: 37ms or 75ms
  Variable: 3ms to 50ms
- ► LIN-bus interface, LIN specification 2.0
- ► Output slew rate control to reduce EMI
- ► Input voltage bus ranges from −36V to +40V
- ► Wake up via bus
- ► Standby current <30µA typical
- ► Over temperature and output current protection
- ► BUS pin protected of ESD voltage level 4kV
- ► SO16 package

APPLICATION

- ► Bus interface for Local Interconnect Network (LIN) communication including µC supervisory especially in automotive applications

DESCRIPTION

The IC is used as a voltage regulator with an integrated LIN-interface in automotive applications. The voltage regulator supplies an µC in the application.

Providing an integrated watchdog with adjustable window duration the IC offers the best performance as a "System Basic Chip".

When the EN pin is active (high), the voltage regulator is turned on and the output voltage VCC is available. Its quality is regulated by sensing with the VCCS pin. The regulator is switched on by LIN-Bus wake up request or by µC directly at pin EN.
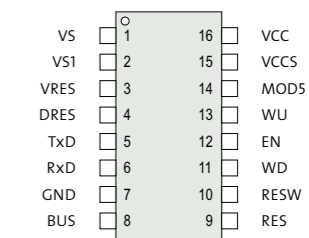
The external resistor between VS and VS1 keeps the internal power dissipation low without compromising low supply operation. Both 5V and 3.3V applications are possible by selecting the output voltage on pin MOD with a digital signal. No precision feedback resistors are required.

The reset output is active (low) at VCC low, power on, power off and with watchdog timed out. The reset threshold of VCC as well as the reset impuls duration have two programmable levels .
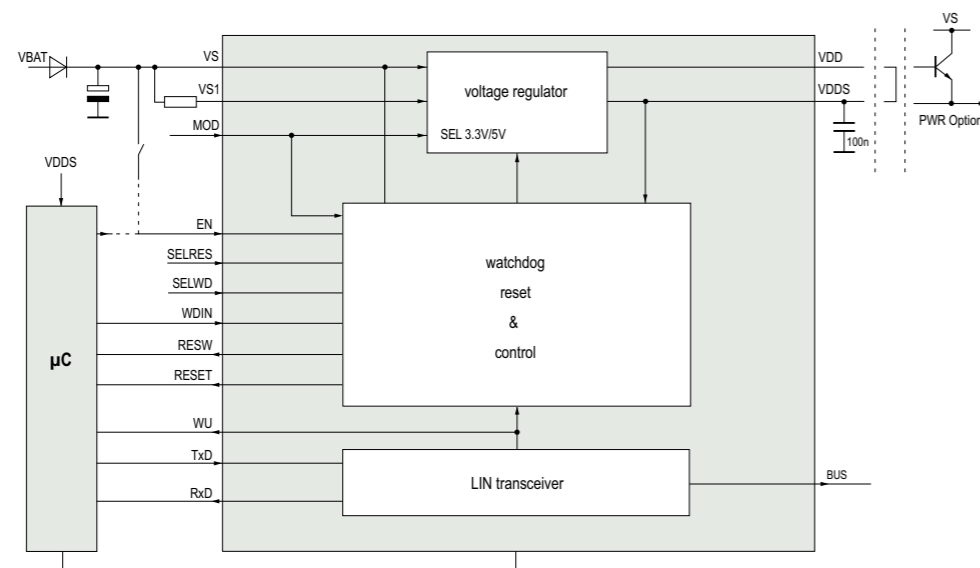
PINNING

Pin	Name	Description
1	VS	Battery supply + 12V
2	VS1	Battery supply through external resistor (e.g. RVS1=140Ω for Ivcc=100mA)
3	VRES	Reset threshold select, weak pull up (VRES=H/L --> thresold high / threshold low)
4	DRES	Reset duration and watchdog window select, weak pull up (DRES=H/L --> reset duration 10ms / 100ms)
5	TxD	Transmitted serial data, pull up
6	RxD	Received serial data
7	GND	Ground
8	BUS	LIN-Bus Pin
9	RES	Reset output, active Low
10	RESW	Reset additional output with threshold higher on 200mV than RES threshold
11	WD	Watchdog input impulses from µC, pull down
12	EN	Enable input, active high, pull down
13	WU	Wake up via LIN-Bus
14	MOD	Voltage regulator output voltage mode, weak pull down (MOD=H/L-->VCC=5V/3.3V)
15	VCCS	Output voltage sense input
16	VCC	Voltage regulator output (VCC=5V 3.3V, Iload=0...100mA)

PACKAGE

BLOCK DIAGRAM