► Step down converter, fully integrated

E910.27

FEATURES

- Wide input range of 5V to 40V
- Wide, adjustable output voltage of 1.25V to (VIN-0.5V)
- Output current range of 0mA to 2.8 A peak
- Fully integrated, minimum external components required
- Very high efficiency over the whole load current range (up to 90%)
- Very low shutdown current with internal supply off (12 µA typical)
- Low standby current with internal supply on for fast start up (<200µA typical)
- 100% duty cycle possible
- Easy to use chaotic regulation behaviour
- Fast multi-loop-regulation
- Adaptive frequency selection up to 300kHz
- No compensation necessary
- Reference voltage input available, for e.g. DAC control of Vout
- ON and sleep control-input with TTL threshold but accepting up to 40V
- Open load stable
- Temperature range –40°C to +125°C.
- TSSOP24 package

APPLICATION

- Automotive electronics
- Controller and sensor supply
- LED supply
- General supply applications

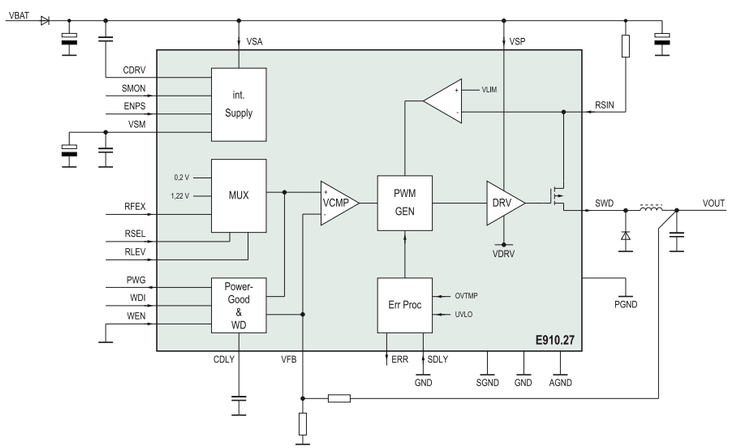
DESCRIPTION

The IC is developed and optimized for automotive applications where it can be used to supply controllers, sensors, power-LEDs and many other devices. The reference input allows it to control the output voltage (or current) with e.g. an external DAC. That makes it easy to build LED-dimmer or any application that needs variable supply.

For fast load and line regulation a multi-loop regulation is implemented using a chaotic current mode regulator which re-quires no compensation components.

The possibility to generate a duty cycle of 100% enables the minimum possible voltage drop and therefore the best utilization of components and input voltage range. With the ENPS and SMON pins the converter can be started and stopped. Due to their wide input voltage range the pins can be driven by TTL- and CMOS-level as well as CAN-controller output or a (filtered) KI15 signal.

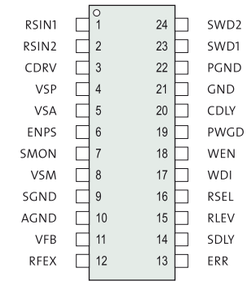
BLOCK DIAGRAM



PINNING

Pin	Name	Description
1	RSIN1	PFM current sense comparator input
2	RSIN2	PFM current sense comparator input
3	CDRV	High side linear regulator output
4	VSP	Positive power stage supply input
5	VSA	Positive analog power supply input
6	ENPS	Shutdown input
7	SMON	SMON control input, Active-high
8	VSM	Internal linear regulator output
9	SGND	Signal ground
10	AGND	Analog ground
11	VFB	Feedback input
12	RFEX	External reference input
13	ERR	Error output
14	SDLY	Delayed restart PFM after fault, high active
15	RLEV	Internal high-reference low-active
16	RSEL	Reference select, low=internal, high=external
17	WDI	Watchdog trigger input
18	WEN	Watchdog enable input
19	PWGD	Power good, Open drain output
20	CDLY	Delay timing capacitor input
21	GND	Ground
22	PGND	Power ground
23	SWD1	Drain output of the internal power P-MOSFET
24	SWD2	Drain output of the internal power P-MOSFET

PACKAGE



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