

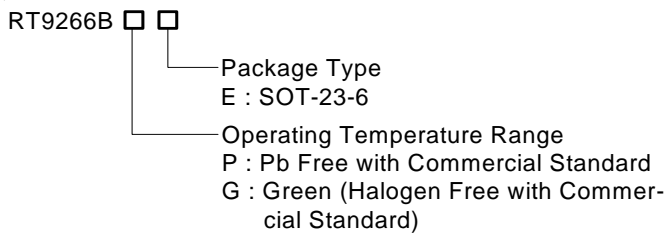
# RT9266B

## General Description

The RT9266B is a compact, high efficiency, and low voltage step-up DC/DC converter with an Adaptive Current Mode PWM control loop, includes an error amplifier, ramp generator, comparator, switch pass element and driver in which providing a stable and high efficient operation over a wide range of load currents. It operates in stable waveforms without external compensation.

The low start-up input voltage below 1V makes RT9266B suitable for 1 to 4 battery cells applications with a 500mA internal switch. The 550kHz high switching rate minimized the size of external components. Besides, the 25µA low quiescent current together with high efficiency maintains long battery lifetime.

## Ordering Information



## Marking Information

For marking information, contact our sales representative directly or through a RichTek distributor located in your area, otherwise visit our website for detail.

## Features

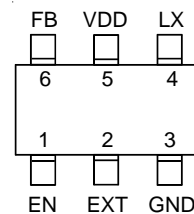
- 1.0V Low Start-up Input Voltage at 1mA Load
- 25µA Quiescent (Switch-off) Supply Current
- Zero Shutdown Mode Supply Current
- 90% Efficiency
- 550kHz Switching Frequency at 3.3V V<sub>DD</sub>
- Providing Flexibility for Using Internal and External Power Switches
- Small SOT-23-6 Package
- RoHS Compliant and 100% Lead (Pb)-Free

## Applications

- PDA
- DSC
- LCD Panel
- RF-Tags
- MP3
- Portable Instrument
- Wireless Equipment

## Pin Configurations

(TOP VIEW)



SOT-23-6

**Note :** There is no pin1 indicator on top mark for SOT-23-6 type, and pin 1 will be lower left pin when reading top mark from left to right.

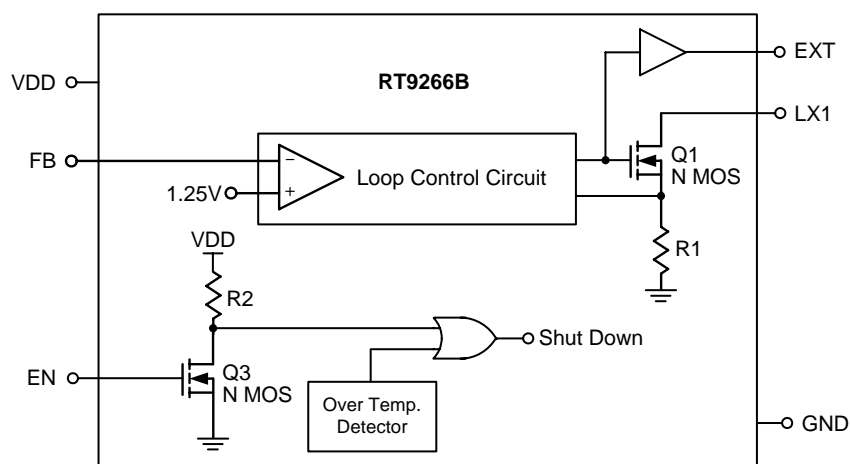


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## Functional Pin Description

Pin Name	Pin Function
EN	Chip Enable (Active High)
EXT	Output Pin for Driving External NMOS
GND	Ground
LX	Pin for Switching
VDD	Input Positive Power Pin of RT9266B
FB	Feedback Input Pin Internal Reference Voltage for the Error Amplifier is 1.25V.

## Function Block Diagram



# RT9266B

## Absolute Maximum Ratings

- Supply Voltage ----- -0.3V to 7V
- LX Pin Switch Voltage ----- -0.3V to 6.5V
- Other I/O Pin Voltages ----- -0.3V to ( $V_{DD} + 0.3V$ )
- LX Pin Switch Current ----- 2.5A
- EXT Pin Driver Current ----- 200mA
- Package Thermal Resistance  
SOT-23-6,  $\theta_{JC}$  ----- 145°C/W
- Operating Junction Temperature ----- 125°C
- Storage Temperature Range ----- -65°C to +150°C

## Electrical Characteristics

( $V_{IN} = 1.5V$ ,  $V_{DD}$  set to 3.3V, Load Current = 0,  $T_A = 25^\circ C$ , unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Start-UP Voltage	$V_{ST}$	$I_L = 1mA$	--	0.98	1.05	V
Operating VDD Range	$V_{DD}$	VDD pin voltage	2	--	6.5	V
No Load Current I ( $V_{IN}$ )	$I_{NO\ LOAD}$	$V_{IN} = 1.5V$ , $V_{OUT} = 3.3V$	--	150	--	$\mu A$
Switch-off Current I ( $V_{DD}$ )	$I_{SWITCH\ OFF}$	$V_{IN} = 6V$	--	25	--	$\mu A$
Shutdown Current I ( $V_{IN}$ )	$I_{OFF}$	EN Pin = 0V, $V_{IN} = 4.5V$	--	0.01	1	$\mu A$
Feedback Reference Voltage	$V_{REF}$	Close Loop, $V_{DD} = 3.3V$	1.225	1.25	1.275	V
Switching Frequency	$F_S$	$V_{DD} = 3.3V$	--	550	--	kHz
Maximum Duty	$D_{MAX}$	$V_{DD} = 3.3V$	--	95	--	%
LX ON Resistance		$V_{DD} = 3.3V$	--	0.35	--	$\Omega$
Current Limit Setting	$I_{LIMIT}$	$V_{DD} = 3.3V$	--	0.5	--	A
Current Limit Delay Time		$V_{DD} = 3.3V$	--	300	--	ns
EXT ON Resistance to $V_{DD}$		$V_{DD} = 3.3V$	--	5	--	$\Omega$
EXT ON Resistance to GND		$V_{DD} = 3.3V$	--	5	--	$\Omega$
Line Regulation (refer to $V_{FB}$ )	$\Delta V_{LINE}$	$V_{IN} = 1.5 \sim 2.5V$ , $I_L = 50mA$	--	12	--	mV/V
Load Regulation (refer to $V_{FB}$ )	$\Delta V_{LOAD}$	$V_{IN} = 2.5V$ , $I_L = 1 \sim 100mA$	--	0.25	--	mV/mA
EN Pin Trip Level		$V_{DD} = 3.3V$	0.4	0.8	1.2	V
Temperature Stability for $V_{out}$	$T_S$		--	50	--	ppm/ $^\circ C$
Thermal Shutdown	$T_{SD}$		--	165	--	$^\circ C$
Thermal Shutdown Hysterises	$\Delta T_{SD}$		--	10	--	$^\circ C$