

# XC9301/9302 Series

PWM, PWM/PFM Switching  
Step-Up & Down DC/DC Controller

## General Description

The XC9301/02 series are step-up/down DC/DC converter controller ICs with fast, low ON resistance drivers built-in. A versatile, large output current, step-up/down DC/DC converter can be realised using only 4 basic external components - transistors, coils, diodes and capacitors.

Output voltage is selectable in 0.1V steps within a 2.4V ~ 6.0V ( $\pm 2.5\%$  accuracy) range and switching frequency is set at 180kHz.

The XC9302 series switches from PWM to PFM control during light loads and the series offers high efficiencies from light loads through to large output currents.

Soft-start time is internally set to 10 msec which offers protection against rush currents when the power is switched on and also against voltage overshoot.

During shutdown (CE pin = L), consumption current can be reduced to as little as 0.5 $\mu$ A or less.

## Features

Input Voltage Range: 2.0V ~ 10V

Output Voltage Range: 2.4V ~ 6.0V ( $\pm 2.5\%$  accuracy)  
(selectable in 0.1V steps)

Oscillation Frequency: 180KHz ( $\pm 15\%$  accuracy)

Output Current: more than 250mA ( $V_{IN}=2.4V, V_{OUT}=3.3V$ )

Efficiency: 81% (typ) at 5.0V

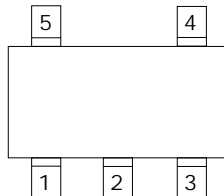
78% (typ) at 3.3V

Stand-By: ISTB = 0.5 $\mu$ A (max)

Output Voltage Internal Set-Up

SOT-25 Package

## Pin Configuration

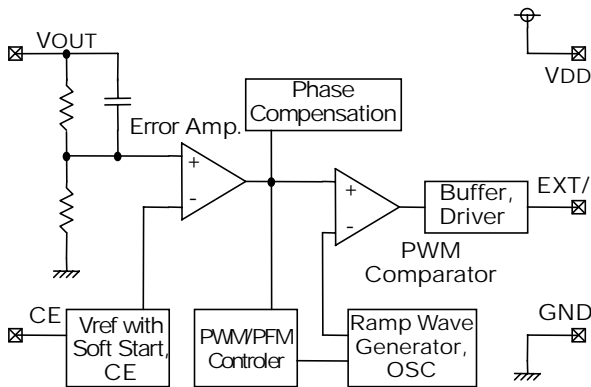


SOT-25  
<SOT-23-5>  
(TOP VIEW)

## Pin Assignment

PIN NUMBER	PIN NAME	FUNCTION
1	GND	Ground
2	VDD	Power Supply
3	EXT/	External Transistor Connection
4	VOUT	Output Voltage Monitor
5	CE	Chip Enable

## Block Diagram



## Ordering Information

XC9301

	FUNCTION		FUNCTION
	A : Standard (5-pin)		Package M : SOT-25 (1reel = 3000pcs)
	Output Voltage : 2.4 ~ 6.0 e.g. 3.0V =        3,        0		
	Oscillator frequency 2 : 180kHz		Embossed Tape R : standard loading L : reverse loading

\* XC9302 Series PWM/PFM switching control (same as XC9301 series)