

Preliminary

- ◆ **Input Voltage Range** : 2.0V ~ 10V
- ◆ **Output Voltage Range** : 2.4V ~ 6.0V (± 2.5% accuracy)
- ◆ **Oscillation Frequency** : 180KHz (± 15% accuracy)
- ◆ **Maximum Duty Ratio** : 85% (typ)
- ◆ **PWM/PFM Switching Step-Up & Down Control (XC9302)**
- ◆ **Efficiency** : 75% (typ)
- ◆ **SOT-25 Package**

■ Applications

- Mobile phones
- PDAs
- Palmtop computers
- Portable audio equipment
- Various power supplies

■ 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 (± 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 μA or less.

■ Features

Input Voltage Range : 2.0V ~ 10V

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

Oscillation Frequency : 180KHz (± 15% accuracy)

Output Current : more than 200mA (VIN=2.4V, VOUT=3.3V)

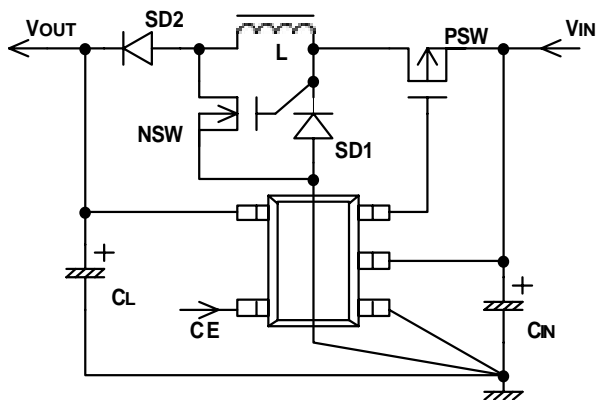
Efficiency : 75% (typ)

Stand-By : ISTB = 0.5μA (max)

Output Voltage Internal Set-Up

SOT-25 Package

■ Circuit Connection Example



External Components

PSW : XP162A12A6PR (SOT-89 PKG)

NSW : XP161A1265PR (SOT-89 PKG)

L : 22 μh (Sumida CD54)

SD : MA737 (Schottky Diode, Matsushita)

CL : 16V, 47 μF x 2 (Tantalum Capacitor, Nichicon F93)

CIN : 16V, 22 μF (Tantalum Capacitor, Nichicon F93)

Note

Please use PSW, NSW with a drive voltage of less than 2.5V with applications where VIN is 2.5V or less.