XC9801 Series Step-Up Charge Pump ICs

Preliminary

◆ **Input Voltage Range : 1.8V ~ 5.5V**
◆ **Small Input Current : 80 μA (PFM mode)**
◆ **Maximum Output Current : 80mA (3.6V → 5V step-up)**
◆ **Low Ripple**
◆ **PFM (pulse skip) Operation During Light Loads**
◆ **CE (chip enable) Function**
◆ **Ultra Small MSOP-8 Package**

■ Applications
● Palm top computers, PDAs
● On Board Local Power Supplies
● Various Battery Powered Devices

■ General Description

The XC9801 series are step-up charge pump ICs which provide stable, highly efficient, positive voltages with the only external components required being 2 capacitors. Output voltage is selectable in 0.1V steps within a 2.5V ~ 5.2V range and with output stabilised through the control of the charge pump's output impedance, ripple is minimal. Control switches to PFM (pulse skip) during light loads without affecting output impedance or ripple so that the IC is protected against drops in efficiency.

As well as the ultra small MSOP-8 package, the small consumption current and high efficiencies of the series make the XC9801 suitable for use with all types of battery operated applications.
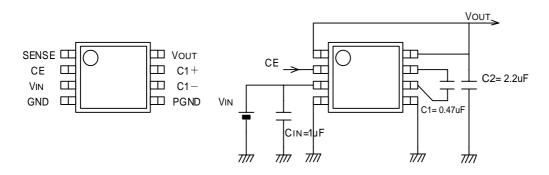
■ Features

Input Voltage Range : 1.8V ~ 5.5V
Output Voltage Range : 2.5V ~ 5.2V
Small Input Current : 80μA (no load)
Output Current : 80mA (3.6V → 5V step-up)
Oscillation Frequency : 300kHz
Stand-By Current (CE 'L') : 2.0 μA (max)
Can be used as a Step-Up Doubler (sense = 0V)
MSOP-8 Package

■ Pin Assignment

PIN NUMBER	PIN NAME	FUNCTION
1	SENSE	Output Voltage Monitor
2	CE	Chip Enable
3	V_{IN}	Input (power supply)
4	GND	Ground
5	PGND	Power Ground
6	C1−	External Capacitor -
7	C1+	External Capacitor +
8	V_{OUT}	Output

■ Absolute Maximum Ratings

Ta = 25°C, GND = 0V

PARAMETER	SYMBOL	CONDITIONS	UNITS
V_{IN} pin voltage	V_{IN}	-0.3 ~ 6	V
V_{OUT} pin voltage	V_{OUT}	-0.3 ~ 12	V
C1+ pin voltage	C1+	-0.3 ~ V_{OUT} + 0.3	V
C1- pin voltage	C1−	-0.3 ~ V_{OUT} + 0.3	V
CE pin voltage	V_{CE}	-0.3 ~ V_{IN} + 0.3	V
V_{OUT} pin output current	I_{OUT}	200	mA
Power dissipation	Pd	150	mW
Operating Temperature	Topr	- 30 ~ + 80	°C
Storage Temperature	Tstg	- 40 ~ + 125	°C

■ Pin Configuration, Circuit Connection Example