XC6372 Series

Dual Mode [PWM/PFM] Step-up DC/DC Converters

DETAILS

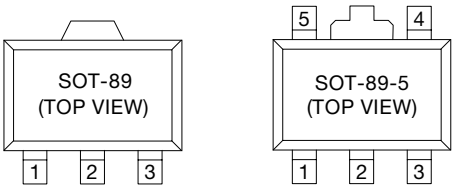
General Description

The XC6372 series, unlike the conventional PWM controlled converters, are a group of step-up DC/DC converters that automatically change their operation modes into PFM modes while loads are light, such as when the duty ratios are less than 10%.
When loads are light, as in the stand-by mode, the XC6372 changes to PFM control so as to decrease oscillator frequencies, resulting in reduced supply current.
Therefore, the XC6372 is suitable for use with portable equipment that requires the PWM controlled performance of low ripple and high output proprietary phase compensation and slow start-up circuits ensure excellent transient response and improved performance.
Output voltage can be selected from 2.0V to 7.0V in 0.1V increments (accuracy: ±2.5%). Oscillator frequency is also selectable from three frequencies; 50, 100, and 180kHz (accuracy: ±15%).
Every built-in switching transistor type enables a step-up circuit to be configured using only three external components; a coil, a diode, and a capacitor. External transistor versions are available to accommodate high output current applications.
SOT-89 small package.

Features

Operating (start-up) voltage range: 0.9V ~ 10V
Output voltage range: 2.0V ~ 7.0V in 0.1V increments
Highly accurate: Set-up voltage ±2.5%
Oscillator frequency: 50kHz, 100kHz, 180kHz (±15%) selectable
Maximum output currents (Tr built-in):
Typ. 100mA at VIN=3.0, VOUT=5.0V.....Note(1)
Built-in switching transistor type and an external Tr type available.
Five-lead packaged units offer either Chip Enable or independent Vout pin option.
Phase compensation and slow startup circuits included.
Small package: SOT-89 mini-power mold (3-pin, 5-pin)
Note(1) : Performance depends on external components and PCB layout.

Pin Configuration



Pin Assignment

(1) XC6372A, XC6372B

PIN NUMBER		PIN NAME	FUNCTION
XC6372A	XC6372B		
1	1	VSS	Ground
2	2	VOUT	Output voltage monitor / IC internal power supply
3	-	LX	Switch
-	3	EXT	External switch transistor drive

Pin Assignment

(2) XC6372C, XC6372D

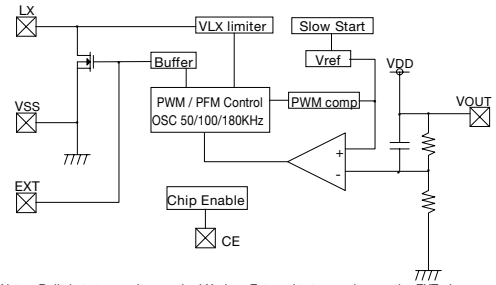
PIN NUMBER		PIN NAME	FUNCTION
XC6372C	XC6372D		
5	5	VSS	Ground
2	2	VOUT	Output voltage monitor / IC internal power supply
4	-	LX	Switch
-	4	EXT	External switch transistor drive
3	3	CE	Chip Enable
1	1	NC	No Connection

(3) XC6372E, XC6372F

PIN NUMBER		PIN NAME	FUNCTION
XC6372E	XC6372F		
5	5	VSS	Ground
2	2	VDD	IC internal power supply
4	-	LX	Switch
-	4	EXT	External switch transistor drive
3	3	VOUT	Output voltage monitor
1	1	NC	No Connection

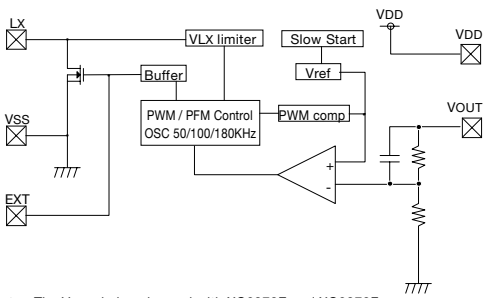
Block Diagram

(1) XC6372A ~ XC6372D
(The VOUT pin serves also as VDD .)



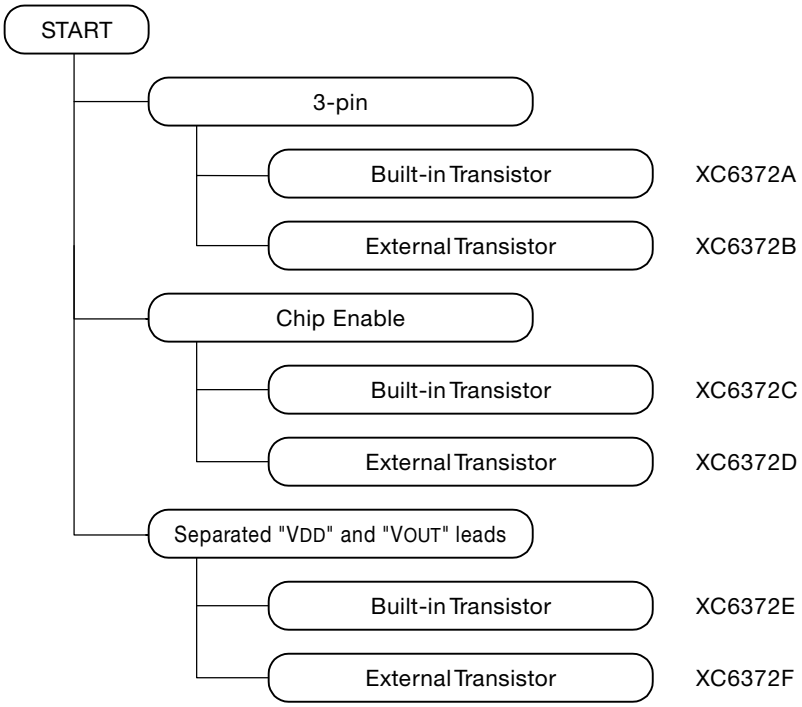
Note : Built-in tr.type units use the LX pin. External tr.type units use the EXT pin.
The CE pin is only used with the XC6372C and XC6372D.

(2) XC6372E and XC6372F



Note : The VDD pin is only used with XC6372E and XC6372F.
Buiot-in tr.type units use the LX pin. External tr.type units use the EXT pin.

Selection Guide



Ordering Information

XC6372①②③④⑤⑥

XC6372series PWM/PFM switching control

①	A	3-pin, Built-in switching transistor
	B	3-pin, External switching transistor
	C	Stand-by capability, Built-in switching transistor
	D	Stand-by capability, External switching transistor
	E	Separated VDD and VOUT, Built-in switching transistor
	F	Separated VDD and VOUT, External switching transistor
② ③		Output Voltage e.g., VOUT=3.5V → ②=3, ③=5
④	0	OSC Frequency 50kHz
	1	OSC Frequency 100kHz
	2	OSC Frequency 180kHz
⑤	P	Package A ~ B → SOT-89-3 C ~ F → SOT-89-5
⑥	R	Embossed tape. Orientation of device : Right
	L	Embossed tape. Orientation of device : Left