

XC6383 Series

PFM Controlled, Step-up DC/DC Converters (Variable Duty Ratio)

General Description

The XC6383 series is a group of PFM controlled step-up DC/DC converters. Unlike conventional PFMs, the XC6383 automatically switches duty ratio (55% / 75%) when it senses changes in load and can support both large and small currents.

The XC6383 series employs CMOS process and laser trimming technologies so as to attain low power and high accuracy. Max. oscillator frequency is trimmed to 100kHz (accuracy : $\pm 15\%$).

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.

Both built-in and external transistor types include 5-pin and 3-pin packages, which are provided with either a CE (chip enable) function that reduces power consumption during shut-down mode, or a VDD pin function (separated power and voltage detect pins).

SOT-23, SOT-25, and SOT-89-5 super mini-mold packages.

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 $\pm 2.5\%$

Maximum oscillator frequency: 100kHz ($\pm 15\%$)

Duty Ratio: 55% / 75% ($\pm 5\%$)

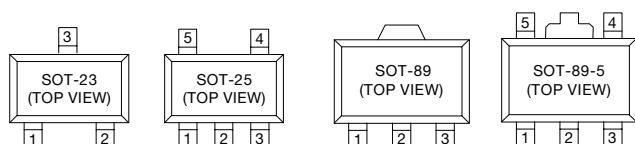
Both built-in switching transistor and external types are available.

Five-lead packaged units offer either Chip Enable or independent VOUT pin option.

Small package: SOT-23, 25 mini-mold (3-pin, 5-pin)

SOT-89, 89-5 mini-power mold (3-pin, 5-pin)

Pin Configuration



Pin Assignment

(1) XC6383A, XC6383B

PIN NUMBER				PIN NAME	FUNCTION
XC6383A		XC6383B			
SOT-23	SOT-89	SOT-23	SOT-89		
1	1	1	1	VSS	Ground
3	2	3	2	VOUT	Output voltage monitor / IC internal power supply
2	3	-	-	LX	Switch
-	-	2	3	EXT	External switch transistor drive

Pin Assignment

(2) XC6383C, XC6383D

PIN NUMBER				PIN NAME	FUNCTION
XC6383C		XC6383D			
SOT-25	SOT-89-5	SOT-25	SOT-89-5		
4	5	4	5	VSS	Ground
2	2	2	2	VOUT	Output voltage monitor / IC internal power supply
5	4	-	-	LX	Switch
-	-	5	4	EXT	External switch transistor drive
1	3	1	3	CE	Chip enable
3	1	3	1	NC	No Connection

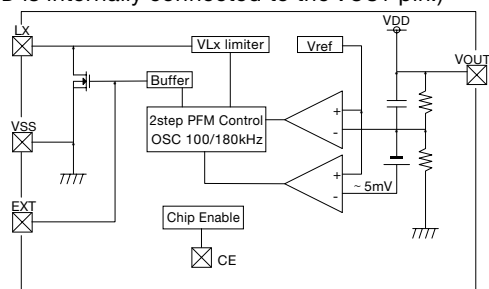
(3) XC6383E, XC6383F

PIN NUMBER				PIN NAME	FUNCTION
XC6383E		XC6383F			
SOT-25	SOT-89-5	SOT-25	SOT-89-5		
4	5	4	5	VSS	Ground
2	2	2	2	VDD	IC internal power supply
5	4	-	-	LX	Switch
-	-	5	4	EXT	External switch transistor drive
1	3	1	3	VOUT	Output voltage monitor
3	1	3	1	NC	No Connection

Block Diagram

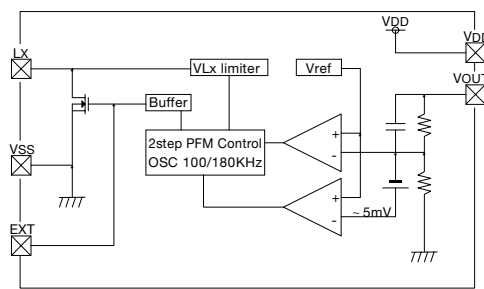
(1) XC6383A ~ XC6383D

(VDD is internally connected to the VOUT pin.)



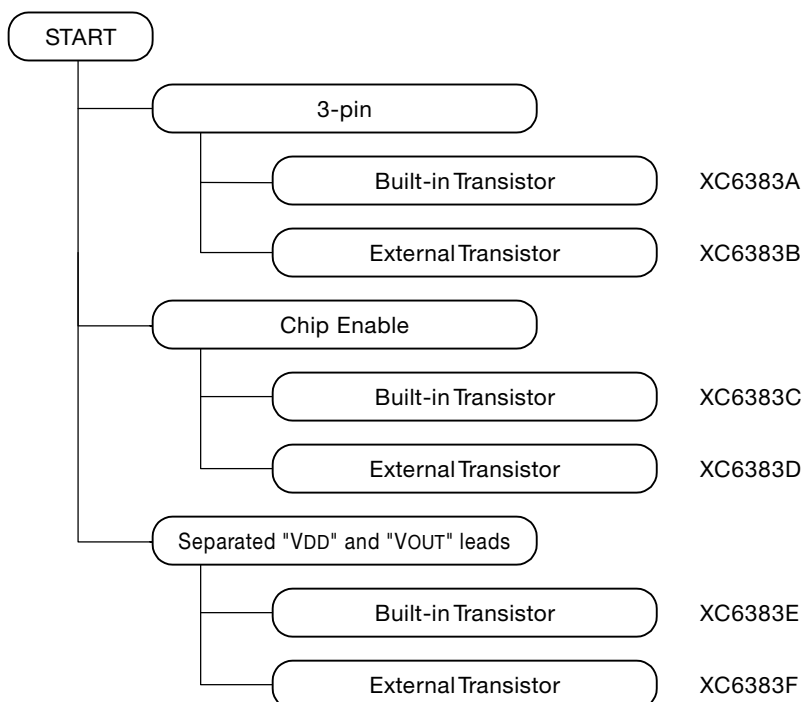
Notes : Built-in Tr.types use the Lx pin, external Tr.types use the EXT pin.
The CE pin is only used with the XC6383C and XC6383D.

(2) XC6383E and XC6383F



Notes : Built-in Tr.type use the Lx pin, external Tr.types use the EXT pin.
The CE pin is only used with the XC6383C and XC6383D.

Selection Guide



Ordering Information

XC6383①②③④⑤⑥

XC6383series PFM control 2step

①	A	3-pin, Built-in switching transistor
	B	3-pin, External switching transistor
	C	Stand-by capability, (5-pin) Built-in switching transistor
	D	Stand-by capability, (5-pin) External switching transistor
	E	Separated VDD and VOUT, (5-pin) Built-in switching transistor
	F	Separated VDD and VOUT, (5-pin) External switching transistor
②	Output Voltage	
③	e.g., VOUT=3.5V → ②=3, ③=5	
④	1	OSC Frequency 100kHz
⑤	M	Package A ~ B → SOT-23 C ~ F → SOT-25
	P	Package A ~ B → SOT-89 C ~ F → SOT-89-5
⑥	R	Embossed tape. Orientation of device : Right
	L	Embossed tape. Orientation of device : Left