XC6385 Series

PFM (Frequency)Controlled, Step-Up DC/DC Converters

◆**Pager Use** : **Low Noise**
◆**Duty Ratio** : **75%**
◆**CMOS Structure** : **Small Supply Current**
◆**Operating Voltage Range** : **0.9~10.0V**
◆**Output Voltage Range** : **2.0~7.0V**
◆**Output Voltage Accuracy** : **±2.5%**

■Applications

●Pagers
●Palmtops
●Cameras, Video cameras
●Various portable products

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■General Description

The XC6385 series are a group of PFM (frequency) controlled step-up DC/DC converters.
The XC6385 series employs CMOS process and laser trimming technologies to attain low power and high accuracy.
A common problem among pagers is one of noise, but with the XC6385, high frequency noise that occurs during switching is reduced.
Output voltage is selectable in 0.1V steps within 2.0V ~ 7.0V and maximum frequency is 100kHz (Typ.)
With a built-in switching transistor, a step-up circuit can be configured using a coil, diode and capacitor connected externally.
Also available is a CE (chip enable) function that reduces power consumption during shut-down mode, and an independent V_{DD} pin function (separated power supply and voltage detect pins) for fly-back circuits.
SOT-89-5 and SOT-23/25 small packages.

■Features

Low noise
Operating voltage range : 0.9V~10V
Output voltage range : 2.0V~7.0V (programmable in 0.1V steps)
Output voltage accuracy : ±2.5%
Maximum oscillator frequency : 100kHz (±15%)
Built-in switching transistor
CE function and/or separated V_{DD}/V_{OUT} types selectable with 5 pin packages
Small package : SOT-23/25 mini-mold (3pin, 5pin)
SOT-89/89-5 mini-power mold (3 pin, 5 pin)

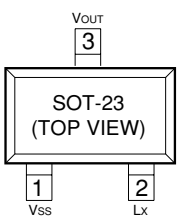
■Typical Application Circuit

■Electrical Characteristics

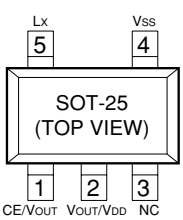
For typical application circuit and electrical characteristics of XC6385 series, please refer to that of XC6382 series.
For more detail, please contact Torex sales offices or sales person.

■Pin Configuration

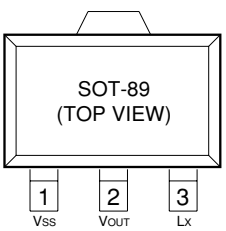
XC6385A



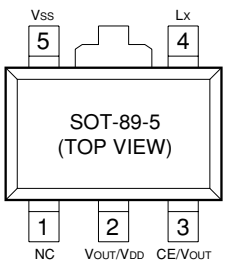
XC6385C/E



XC6385A



XC6385C/E



■Product Classification

●Selection Guide

PARAT TYPE	DUTY RATIO	PACKAGE	SWITCHING TRANSISTOR	CE FUNCTION	V_{DD} PIN	FEATURES
XC6385A	75%	SOT-23 SOT-89	Built-in	NO	NO	Duty Ratio 75%
XC6385C	75%	SOT-23 SOT-89-5	Built-in	YES	NO	Stand-by (CE) function During stand-by (CE pin "Low"), Supply current = 0.50μA (max)
XC6385E	75%	SOT-23 SOT-89-5	Built-in	NO	YES	Since the power supply (V_{DD}) pin and the voltage sensor (V_{OUT}) pin are separated, use as a PFM controller is possible.

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●Ordering Information

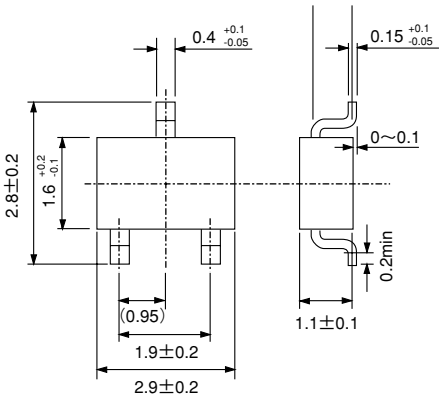
XC6385①②③④⑤⑥

XC6385 Series PFM Controlled Duty 75%

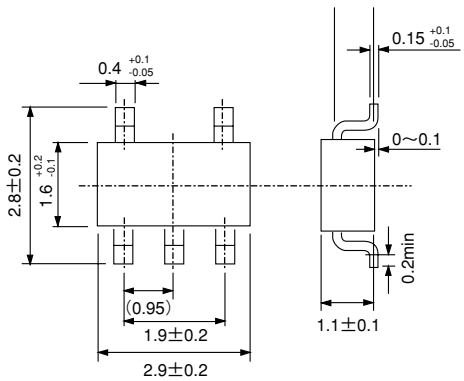
①	A	3-pin. Built-in switching transistor
	C	Stand-by capability. (5-pin) Built-in switching transistor
	E	Stand-by capability. (5-pin) Built-in switching transistor
② ③	Output Voltage e.g.V_{OUT}=3.5V ➔ ②=3, ③=5	
④	1	Maximum Oscillator Frequency 100kHz
⑤	M	Package ①=A SOT-23 ①=C, E SOT-25
	P	Package ①=A SOT-89 ①=C, E SOT-89-5
⑥	R	Embossed tape: Standard Feed
	L	Embossed tape: Reverse Feed

■Packaging Information

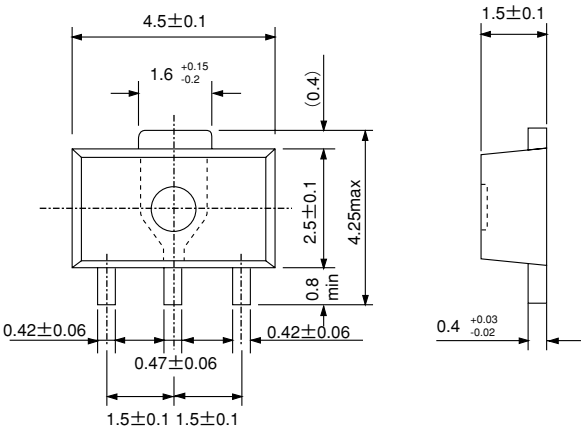
●SOT-23



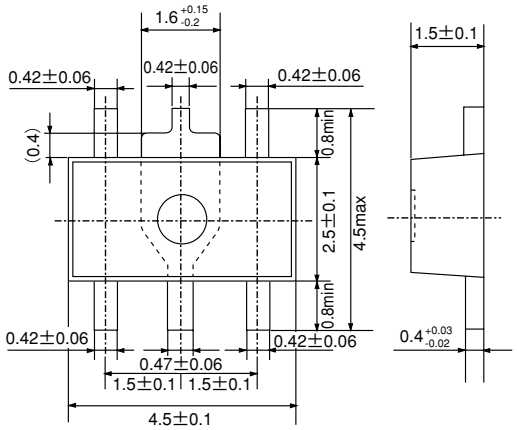
●SOT-25



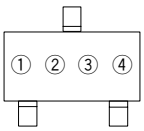
●SOT-89



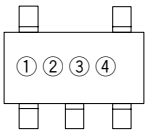
●SOT-89-5



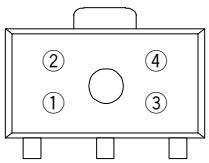
■Marking



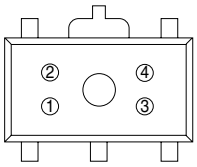
SOT-23
(TOP VIEW)



SOT-25
(TOP VIEW)



SOT-89
(TOP VIEW)



SOT-89-5
(TOP VIEW)

① Represents the Product Classification

DESIGNATOR	FUNCTION		PRODUCT NAME
$\overline{E}$	—	Built-in Transistor	XC6385A＊＊＊＊＊
$\overline{L}$	CE	Built-in Transistor	XC6385C＊＊＊＊＊
$\overline{N}$	VDD/VIN	Built-in Transistor	XC6385E＊＊＊＊＊

② Represents the integer of the Output Voltage and Oscillator Frequency

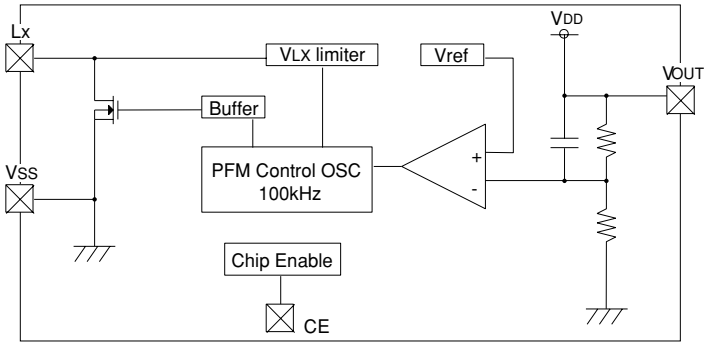
INTEGER OF THE OUTPUT VOLTAGE	OSCILLATOR FREQUENCY (kHz)
	100
1	$\overline{1}$
2	$\overline{2}$
3	$\overline{3}$
4	$\overline{4}$
5	$\overline{5}$
6	$\overline{6}$
7	$\overline{7}$

③ Represents the decimal number of the Output Voltage and Oscillator Frequency

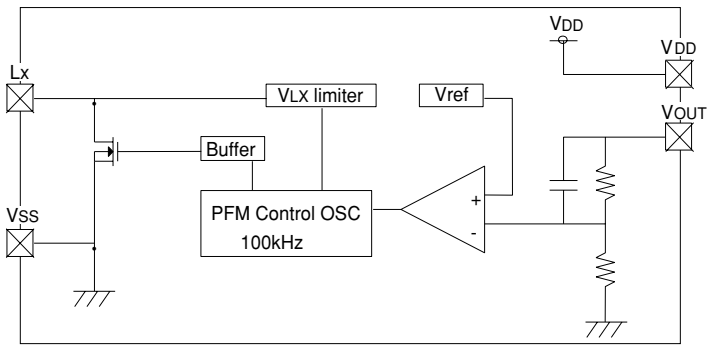
OUTPUT VOLTAGE	OSCILLATOR FREQUENCY (kHz)
	100
0	0
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9

④ Denotes the production lot number
0 to 9, A to Z repeated(G.I.J.O.Q.W excepted)

■Block Diagram



Note: The CE pin is set up for XC6385C.



Note: The VDD pin is set up for XC6385E.

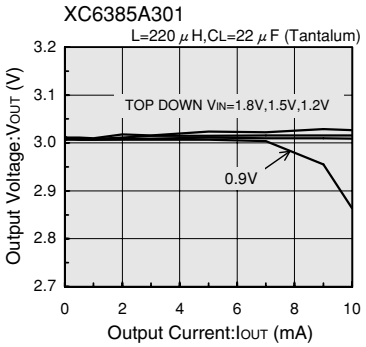
■Electrical Characteristics

For electrical characteristics of XC6385 series, please refer to that of XC6382 series.
For more detail, please contact Torex sales offices or sales person.

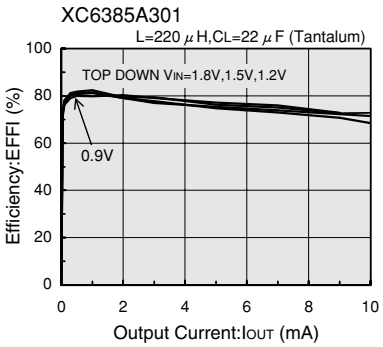
■Typical Performance Characteristics

●XC6385A301 (Outut Voltage = 3.0V)

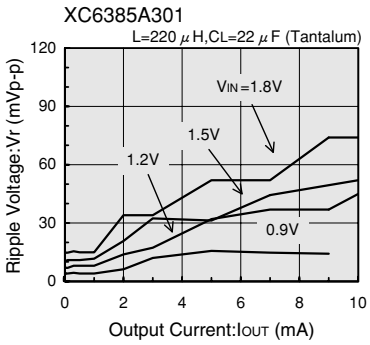
(1) OUTPUT VOLTAGE vs. OUTPUT CURRENT



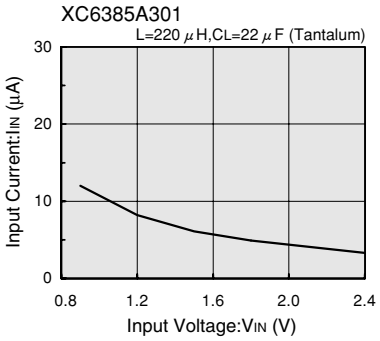
(2) EFFICIENCY vs. OUTPUT CURRENT



(3) RIPPLE VOLTAGE vs. OUTPUT CURRENT



(4) NO LOAD INPUT CURRENT vs. INPUT VOLTAGE



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