

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%

■ 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.

■ Applications

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

■ 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

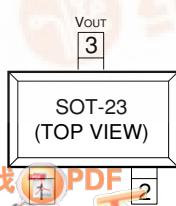
5 pin packages

Small package

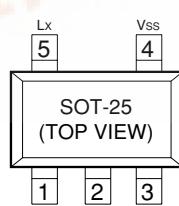
: SOT-23/25 mini-mold (3pin, 5pin)
SOT-89/89-5 mini-power mold
(3 pin, 5 pin)

■ Pin Configuration

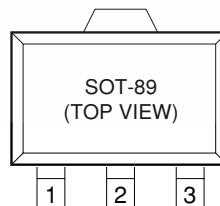
XC6385A



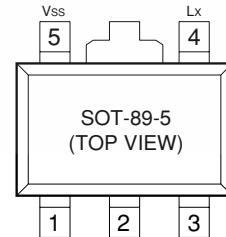
XC6385C/E



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.

4

●Ordering Information

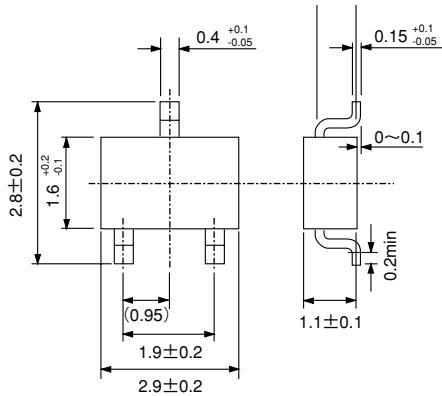
XC6385①②③④⑤⑥

XC6385 Series PFM Controlled Duty 75%

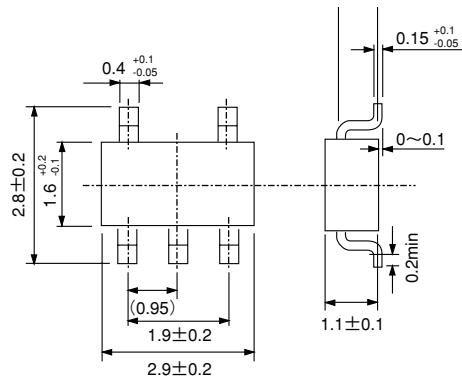
①	A	3-pin. Built-in switching transistor		
	C	Stand-by capability. (5-pin) Built-in switching transistor		
	E	Stand-by capability. (5-pin) Built-in switching transistor		
② ③	Output Voltage e.g. V _{OUT} =3.5V → ②=3, ③=5			
	④	1	Maximum Oscillator Frequency 100kHz	
⑤	M	Package	①=A ①=C, E	SOT-23 SOT-25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

■Packaging Information

●SOT-23

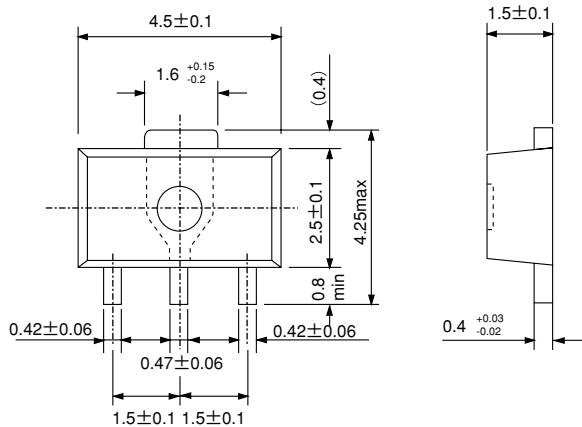


●SOT-25



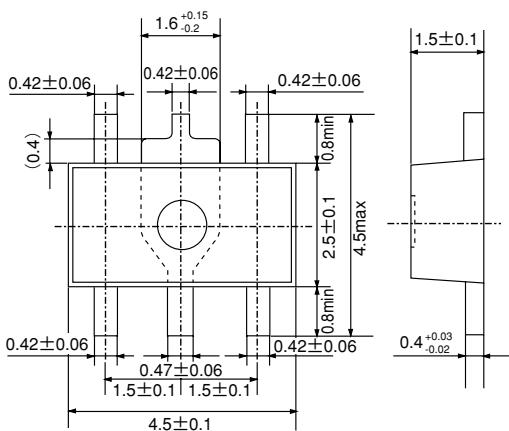
XC6385 Series

●SOT-89

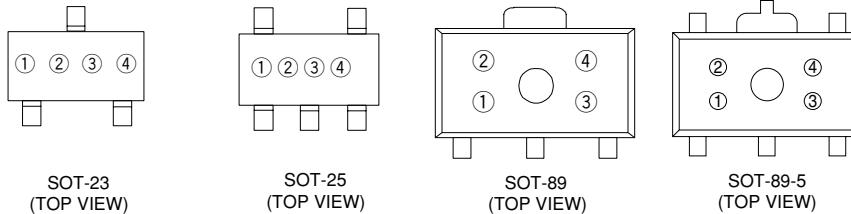


4

●SOT-89-5



■Marking



① Represents the Product Classification

DESIGNATOR	FUNCTION	PRODUCT NAME
<u>E</u>	—	Built-in Transistor
<u>L</u>	CE	XC6385C*
<u>N</u>	VDD/VIN	XC6385E*

② Represents the integer of the Output Voltage and Oscillator Frequency

INTEGER OF THE OUTPUT VOLTAGE	OSCILLATOR FREQUENCY(kHz)
	100
1	1
2	2
3	3
4	4
5	5
6	6
7	7

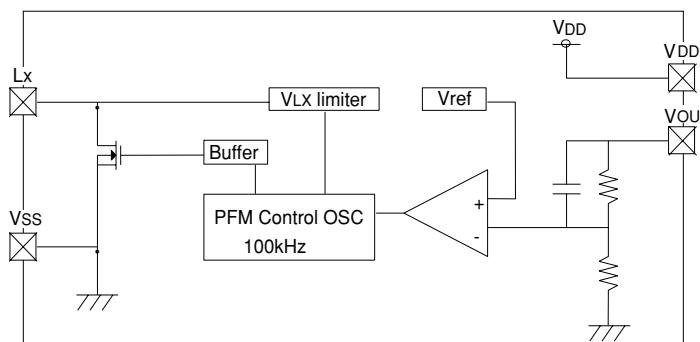
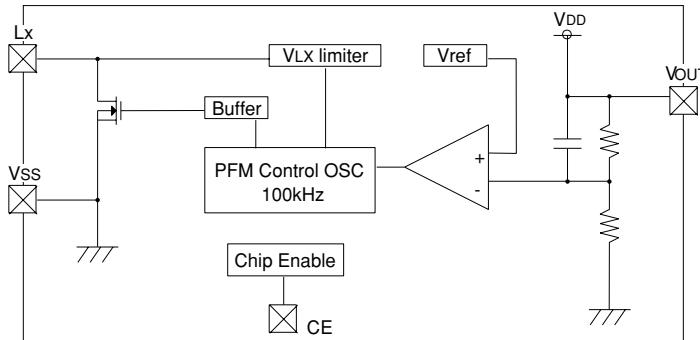
③ Represents the decimal number of the Output Voltage and Oscillator Frequency

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



Electrical Characteristics

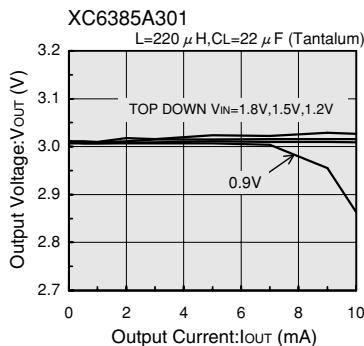
For electrical characteristics of XC6385 series, please refer to that of XC6382 series.

For more detail, please contact Torex sales offices or sales person.

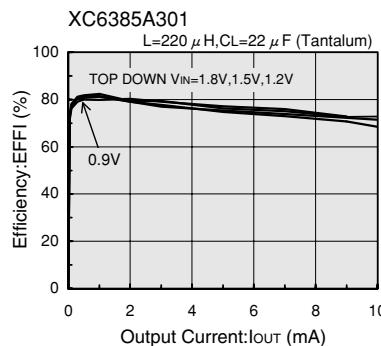
■Typical Performance Characteristics

●XC6385A301 (Outut Voltage = 3.0V)

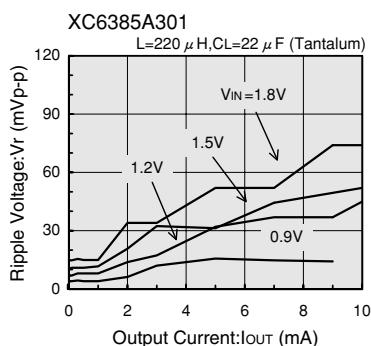
(1) OUTPUT VOLTAGE vs. OUTPUT CURRENT



(2) EFFICIENCY vs. OUTPUT CURRENT



(3) RIPPLE VOLTAGE vs. OUTPUT CURRENT



(4) NO LOAD INPUT CURRENT vs. INPUT VOLTAGE

