XC651A Series

PFM Controlled, Step-Up DC/DC Converter + Multi Voltage Detector

DETAILS

General Description

The XC651A series are step-up DC/DC converter and multi voltage detector IC s.
CMOS processes and laser trimming technology provide high accuracy and low power consumption.
The XC651A comprises of a PFM controlled step-up DC/DC converter, a voltage detector with 4 x 5 level window comparators built-in, plus 2 other voltage detectors.
The step-up DC/DC converter's EN pin (chip enable) provides power consumption savings when the step-up operations are not operating (stand-by mode).
The series is available in a small TSSOP-16 package.

Features

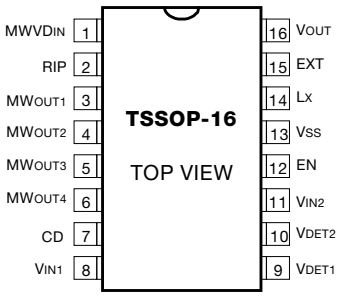
Independent power supply for each built-in block:
Each of the following built-in blocks is operated by a separate power supply:
①PFM controlled, step-up DC/DC converter (PFM DC/DC)
②5 level window comparator (MWVD)
Negative Logic: XC651A3 Series
Positive Logic: XC651A4 Series
③Voltage detector 1 with built-in delay circuit (VD1)
④Voltage detector 2 (VD2)

Highly accurate set-up voltage:
PFM controlled, step-up DC/DC converter:
set-up voltage accuracy ± 2.5%
5 level window comparator: set-up voltage accuracy ± 2%
Voltage detectors 1, 2: set-up voltage accuracy ± 2%

Set-up voltage range:
PFM controlled, step-up DC/DC converter:
2.0V to 3.0V (selectable in 0.1V steps)
5 level window comparator: 1.1V to 2.5V
* (selectable in 0.1V steps)
Voltage detectors 1, 2: 0.9V to 3.0V (selectable in 0.1V steps)

Operational voltage range: 0.9V to 6.0V
Small Package: TSSOP-16
* Note:
The set-up voltage of the 5 level window comparator cannot be freely set-up due to the limitations of the circuit.
Please also note that the set-up voltage range of MWVD1 is 1.0V to 1.8V.

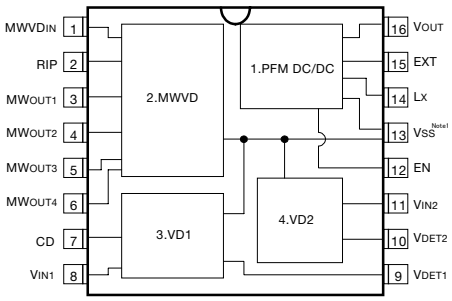
Pin Configuration



Pin Assignment

PIN NUMBER	PIN NAME	FUNCTION
1	MWVDIN	MWVD detect, MWVD current
2	RIP	MWVD ripple exclusion capacitor connection
3	MWOUT1	MWVD output 1
4	MWOUT2	MWVD output 2
5	MWOUT3	MWVD output 3
6	MWOUT4	MWVD output 4
7	CD	VD1 delay time set-up capacitor connection
8	VIN1	VD1 detect, VD1 current
9	VDET1	VD1 output
10	VDET2	VD2 output
11	VIN2	VD2 detect, VD2 current
12	EN	DC/DC enable
13	VSS	Ground pin (common)
14	LX	DC/DC built-in transistor switch output
15	EXT	DC/DC external transistor drive output
16	VOUT	DC/DC output voltage monitor, DC/DC current

Block Diagram



Note 1 : The VSS pin is common to each block.
Note 2 : The VDD pin is independent of each block.

Ordering Information

XC651A×××××××
↑ ↑↑
① ②③

SYMBOL	DESCRIPTION
①	Based on internal standards
②	Package Type : V = TSSOP-16
③	Device Orientation : R = Embossed Tape (Right) L = Embossed Tape (Left)