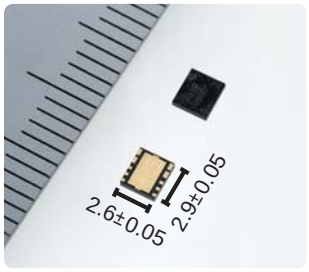
TOREX
New Product Leaflet

30V Operation Low Power Consumption Step-down DC/DC Controller IC

XC9252 Series

Surveillance Camera | STB | Printer | GPS Navigation

The XC9252 series is a 30V operation step-down DC/DC controller IC. The external P-ch driver transistor is used to achieve a stable operation under low input voltage. Low ESR capacitors such as ceramic capacitors can be used for the load capacitor (C_L). A 0.8V reference voltage source is incorporated, and the output voltage can be set freely from 1.5V using external resistors (RFB1, RFB2). 280kHz to 550kHz can be selected for the switching frequency by connecting an external resistor to the ROSC pin. The generation of unneeded noise can be reduced by this synchronization with an external CLK within ±25% of the internal clock using the MODE/SYNC pin. In automatic PWM/PFM control, the IC operates by PFM control when the load is light to achieve high efficiency over the full load range from light to heavy. The soft start time can be set as desired by adding an external capacitance to the SS pin. With the built-in UVLO function, the driver transistor is forced OFF when input voltage becomes 2.5V or lower. Internal protection circuits include over current protection, short-circuit protection, and thermal shutdown circuits to enable safe use.



USP-10B

SALES POINT 1 Achieves high efficiency at light loads

Microcomputers have a standby mode to reduce battery consumption, and the efficiency of the DC/DC converter plays an important role in this.

■Example

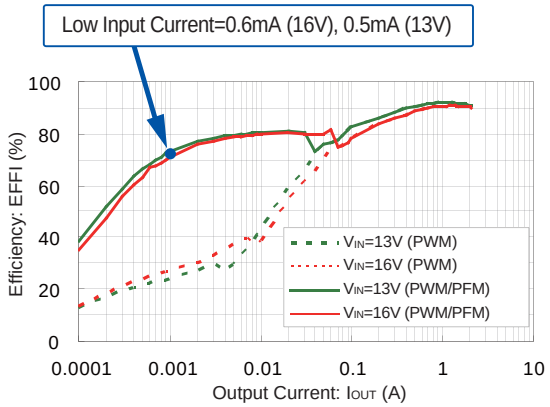
Even though a car is stopped,
some power from a battery is consumed.

■XC9252 Advantage

In this case, the low power consumption feature is important for a power management IC.
⇒ XC9252; Iq:30μA, PFM control is selectable.

Efficiency vs. Output Current

f=460kHz, V_{IN}=13V & 16V, V_{OUT}=5.7V, I_{OUT}=2.5A



SALES POINT 2 Capable of operation from a low voltage

Output is not shut down even when the battery voltage drops suddenly due to environment or other factors.

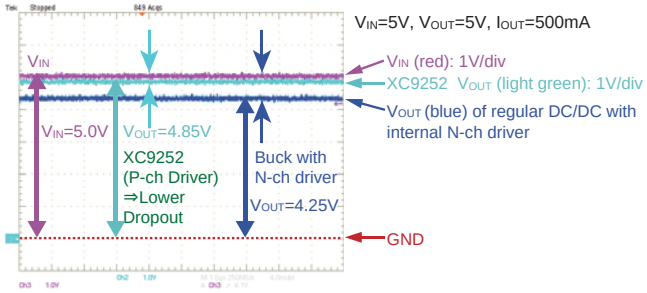
■Example

Dramatic voltage drop happens due to a cranking or a cold cranking.

■XC9252 Advantage

Even though an input voltage drops dramatically.
XC9252 can ease the impact because the power SW for XC9252 is P-FET.
Input Voltage (MIN.) 3.0V

Waveform when V_{IN} is lower than V_nominal



Most high-withstand voltage DC/DC converters use an N-ch driver IC. When an input voltage less than the set voltage is applied to an N-ch driver IC, the output voltage drops dramatically due to the MAX Duty limit.
The XC9252 Series uses a P-ch driver. When an input voltage lower than the set voltage is applied, the MAX Duty limit is 100% and the output voltage drop is smaller than with an N-ch driver.

Memory protection when voltage drops due to cranking of vehicle
Supply from backup power supply of industrial equipment.

Features			
Input Voltage Range	3.0V ~ 30V (Maximum Rating: 36V)	Soft-start	External set (External C)
Load Dump Transients	46V, 400ms	Protection Circuit	Over current limit (External Resistor)
FB Voltage	0.8V (±2.0%)		Integral latch protection
Supply Current	30μA (@300kHz)		Auto-return
Oscillation Frequency	280kHz ~ 550kHz (External Resistor)		Thermal shutdown
Ext. CLK Synchronization	±25% of the internal CLK	Packages	TSSOP-16, USP-10B
Control Method	PWM (Mode: H) , PWM/ PFM (Mode: L)	Environmentally friendly	EU RoHS Compliant, Pb Free

RoHS Compliant | Halogen Antimony FREE