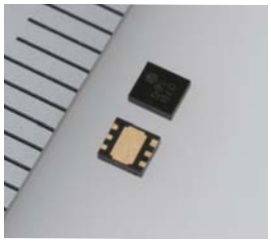
COT Control, 1.5A Synchronous Step-Down DC/DC Converters

TOREX
New Product Leaflet

XC9260/XC9261 Series

Smart Phone | Portable Gaming | Digital Camera

The XC9260/XC9261 series is a group of synchronous step-down DC/DC converters with a built-in P-channel MOS driver transistor and N-channel MOS switching transistor, designed to allow the use of ceramic capacitors.
HiSAT-COT control provides excellent load transient response. The XC9260 series is PWM control and the XC9261 series is automatic PWM/PFM switching control which provides fast response, low ripple and high efficiency over the full range of loads.



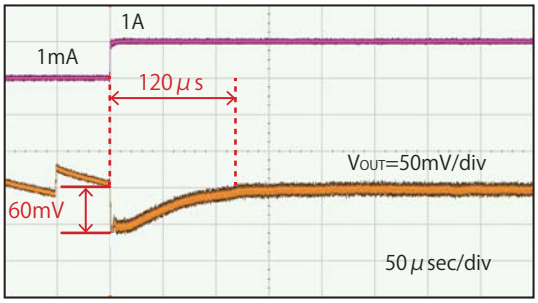
USP-6C

SALES POINT 1 Load-transient response characteristics

The output voltage drop is one half that of previous products, and the response speed is eight times faster.

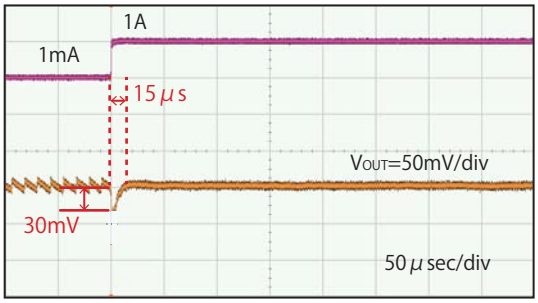
Previous product

V_{IN}=5V, V_{OUT}=1.8V, L=2.2μH, C_{IN}=10μF, C_L=20μF



XC9260/XC9261

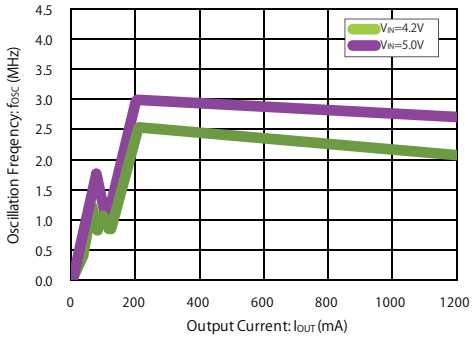
V_{IN}=5V, V_{OUT}=1.8V, L=1μH, C_{IN}=10μF, C_L=20μF



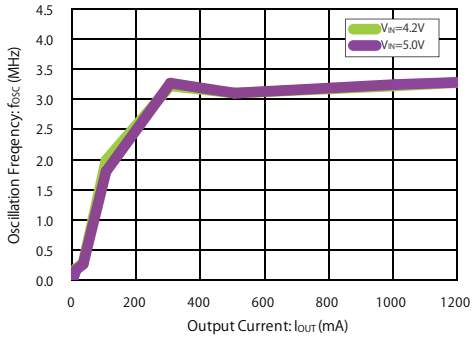
SALES POINT 2 Less frequency fluctuation

The frequency fluctuation due to the Vin and load is less than the usual COT control ICs.

COT control ICs



XC9261 x 18D(PFM)



Features			
Input Voltage Range	2.7V～5.5V	Functions	Soft-Start, UVLO, CLHigh Speed Discharge(Type B)
Output Voltage Range	0.8V～3.6V	Protection Circuits	Current Limit, Thermal Shutdown
Supply Current	15μA(f_{OSC}=1.2MHz), 25μA(f_{OSC}=3.0MHz)		Short Circuit Protection (Type B)
Operating Ambient Temperature	-40℃～105℃	Output Current	1.5A
Efficiency	90%	Packages	SOT-89-5
Oscillation Frequency	1.2MHz, 3.0MHz		USP-6C

RoHS Compliant | Halogen Antimony FREE

COT Control, 1.5A Synchronous Step-Down DC/DC Converters XC9260/XC9261 Series

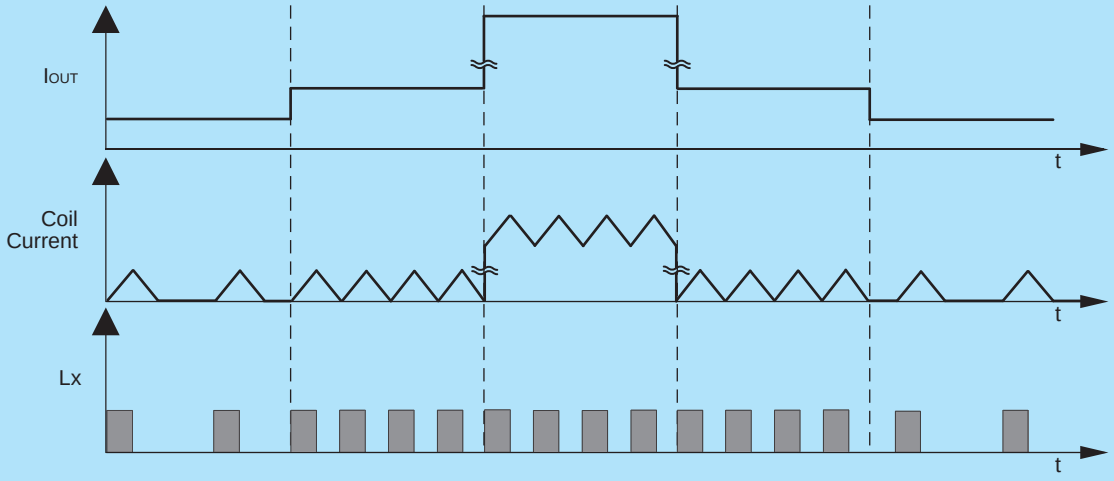
HISAT-COT control waveform

HiSAT-COT

High Speed circuit Architecture for Transient with Constant On Time
High speed transient response is possible COT=PFM Mode

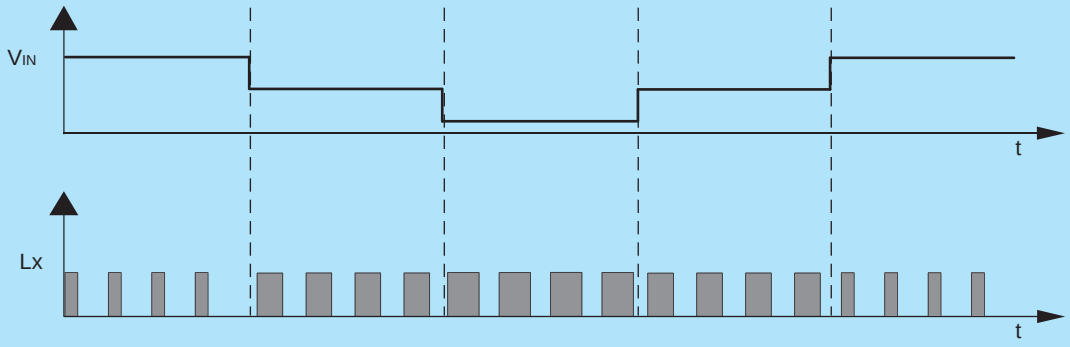
The HiSAT-COT ON time is determined by the V_{IN} and V_{OUT} conditions.
A high speed response to output voltage drops is possible because the necessary energy is supplied in the optimum ON time without delay.

[When the load current is changed (fixed V_{IN})]



In non-continuous mode, the ON time is fixed and the frequency varies.
In continuous mode, fluctuations in the switching frequency are reduced because the DUTY approximates V_{OUT}/V_{IN} and the ON time is fixed.

[When V_{IN} is changed (fixed load)]



The ON time changes according to V_{OUT}/V_{IN}/fosc_set, and thus fluctuations in the switching frequency are reduced.

The XC9260 also operates in continuous mode when the load is light, and thus there is minimal fluctuation across the full range of loads and input.