

IP Data Sheet

Switched Capacitor 3.6V Boost-Buck DC-DC Converter

The TS_SWC_DCDC_3V6_X8 is a switching-mode power converter that regulates its output voltage to typically 3.6V with an output load current of 10mA, from an input voltage VBAT ranging from 2.5V to 5.5V. The DC-DC converter architecture is based on the switched capacitor design which provides multiple advantages such as being inductor less (better EMI performance), suitable for low current applications, and saving PCB area and BOM.

Voltage regulation scheme depends on pulse skipping modulation (PSM) where an oscillator frequency of approximately 32kHz is used.

A bandgap voltage is used as a reference voltage for

the comparison inside the PSM control loop. The DC-DC converter is capable of switching from buck to boost automatically as a comparator monitors the output voltage and switches into the appropriate state.

The TS_SWC_DCDC_3V6_X8 provides its regulated output voltage in the temperature range from -40°C to 60°C.

The circuit is silicon proven and already part of the building blocks of well-known products in the market.

Technology: X-FAB XC018-0.18µm CMOS process

OPERATING CONDITIONS

Parameters	Values / Type
Junction temperature range	-40°C up to +60°C
Supply voltages with respect to ground	VBAT: 2.5V up to 5.5V
Maximum DC load current intensity	10mA

Table 1: Boost-Buck Converter Operating Conditions

SPECIFICATION

Parameters	Values / Type
Output regulated voltage	3.6V
Switching frequency	32.768kHz
Line Regulation	157mV/V
Load Regulation	168mV/A

Table 2: Boost-Buck Converter Specifications

Sales & Marketing Contact



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