



ME7660

CMOS IC

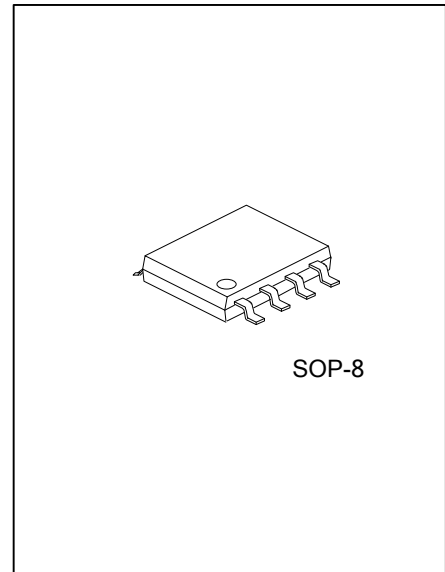
CHARGE PUMP DC-DC VOLTAGE CONVERTER

DESCRIPTION

ME7660 is a charge pump DC-DC voltage converter using AL-gate CMOS technology and optimization design. It converts a +1.5V to +10V input to a corresponding -1.5V to -10V output using only two external capacitors, eliminating inductors and their associated cost, size and EMI. The on-board oscillator operates at a nominal frequency of 10KHZ. Operation below 10 KHZ (for lower supply current applications) is possible by connecting an external capacitor from OSC to ground.

FEATURES

- * Converts +5V Logic supply to +5V
- * Wide input voltage range:1.5V~10V
- * Efficient voltage conversion:99.9%
- * Good power efficiency:98%
- * Low power supply:50uA@5Vin
- * Only two external capacitors required
- * Compatible with RS232 negative power supply standard
- * No Dx diode needed for high voltage operation



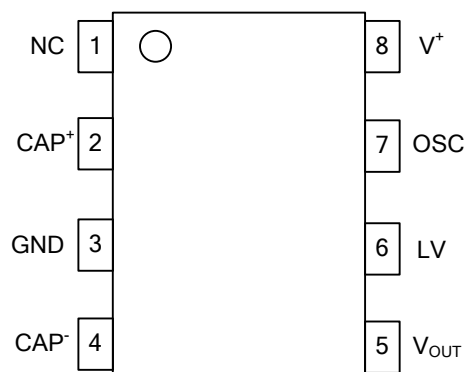
ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
ME7660L-SO8-R	ME7660G-SO8-R	SOP-8	Tape Reel
ME7660L-SO8-T	ME7660G-SO8-T	SOP-8	Tube

<p>ME7660L-SO8-R</p> <ul style="list-style-type: none"> (1) Packing Type (2) Package Type (3) Lead Free 	<ul style="list-style-type: none"> (1) R: Tape Reel, T: Tube (2) S08: SOP-8 (3) G:Halogen Free, L: Lead Free
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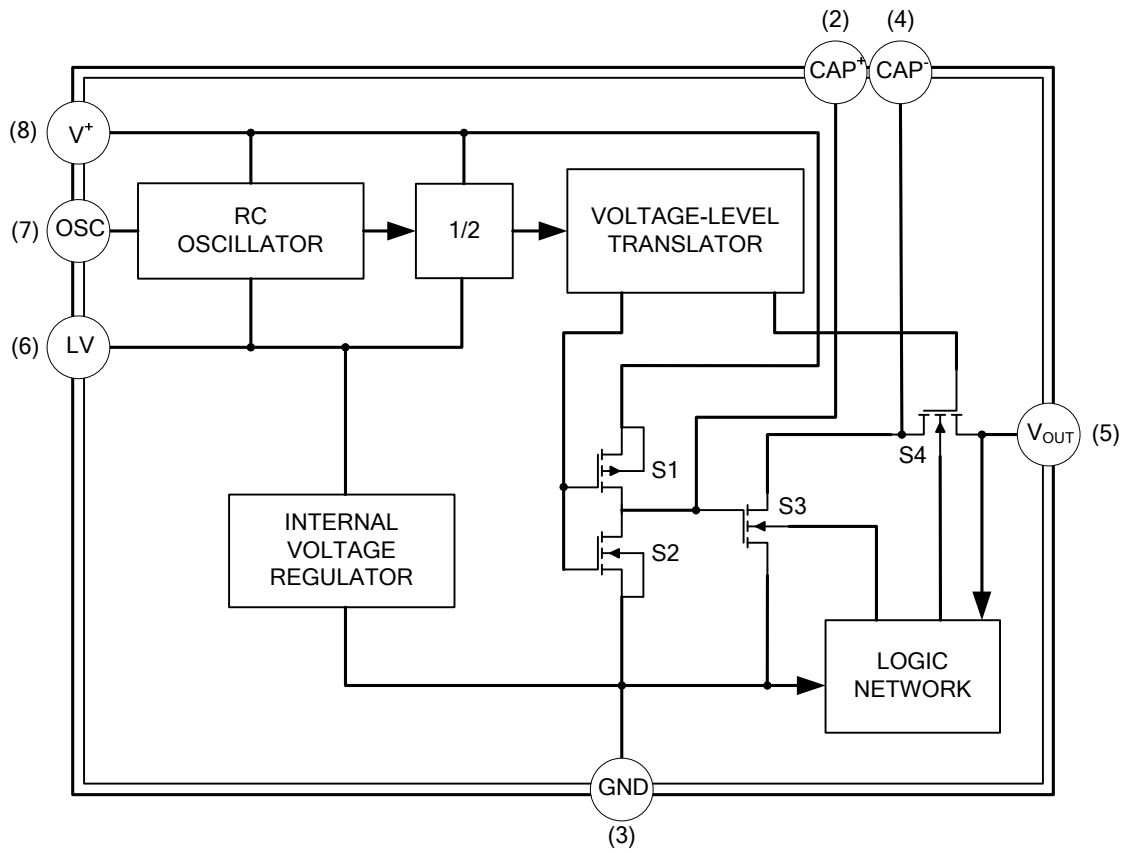
■ PIN CONFIGURATION



■ PIN DESCRIPTION

PIN NO.	SYMBOL	DESCRIPTION
1	NC	No connection
2	CAP ⁺	Connection external capacitor (+) pin
3	GND	Ground Pin
4	CAP ⁻	Connection external capacitor (-) pin
5	V _{OUT}	Voltage output pin
6	LV	Low voltage selection pin
7	OSC	Connecting oscillation capacitor pin
8	V ⁺	Power supply pin

■ BLOCK DIAGRAM



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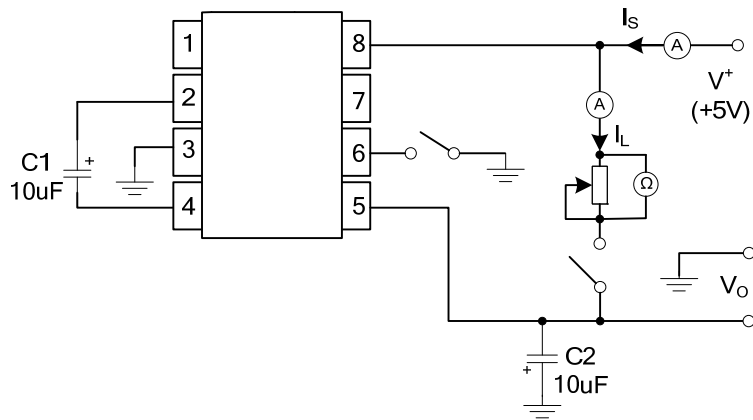
■ ABSOLUTE MAXIMUM RATING

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V_{IN}	10.5	V
LV and OSC Inputs Voltage	$V^+ < 5.5V$	$-0.3 \sim (V^+ + 0.3)$	V
	$V^+ > 5.5V$	$(V^+ - 5.5) \sim (V^+ + 0.3)$	V
Power Dissipation ($T_A \leq 75^\circ C$)	P_D	470	mW
Current Into LV	$V^+ > 3.5V$	I_{LV}	20
Operating Temperature	T_{OPR}	-40 ~ +85	$^\circ C$
Storage Temperature	T_{STG}	-65 ~ +150	$^\circ C$

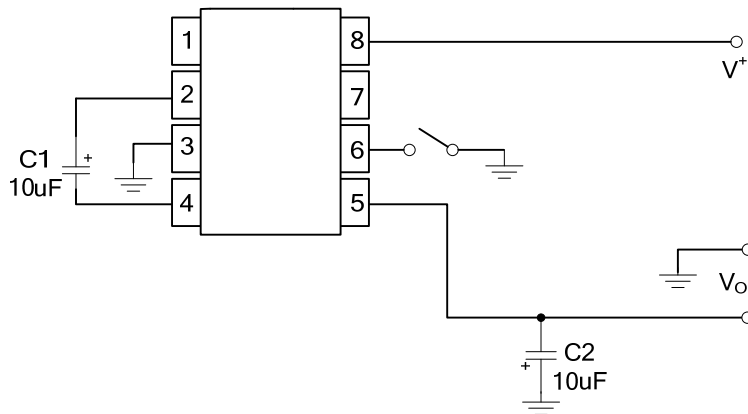
■ ELECTRICAL CHARACTERISTICS ($V^+ = 5V, C_{OSC} = 0$)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Current	I^+	$R_L = \infty$		60	120	μA
Supply Voltage	High	V^+_H	LV Open	3	10	V
	Low	V^+_L	LV to GND	1.5	4	V
Output Resistance	R_{OUT}	$I_{OUT} = 20mA, T_A = 25^\circ C$		110		Ω
		$I_{OUT} = 3mA, V^+ = 2V, T_A = 25^\circ C$		220		Ω
Oscillator Frequency	F_{OSC}	Pin 7 open		10		kHz
Power Efficiency	P_{EFF}	$R_L = 5k\Omega$	90	98		%
Voltage Conversion Efficiency	V_{EFF}	$R_L = \infty$	98	99.9		%

■ TESTING CIRCUIT



■ TYPICAL APPLICATION CIRCUIT



Above figure is the basic application circuit to provide a negative supply from -1.5V ~ -10V while a positive supply from +1.5V ~ +10V is available. When $V^+=+5V$, the output resistance is about 100Ω; The output voltage is -4V while the load current is 10mA.

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