MDT763020

Step-up DC/DC Converter with Voltage Detector

1.General Description

MDT763020 is a step-up DC/DC converter with supply voltage detector. It has low start-up voltage and a high output voltage accuracy with low ripple.

The device generates a low level signal whenever the input voltage (supply voltage) falls below threshold voltage level (2.0v).

2. Features

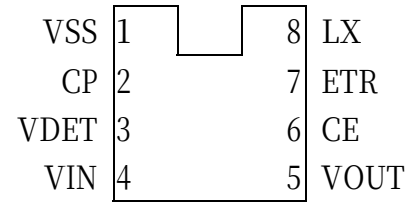
- High output voltage accuracy：+/- 2.5%
- Low start-up voltage: 0.75V (Typ.)
- High efficiency: 85% (Typ.)

3. Applications

- Cellular phones, pagers, mcu
- Power failure detection
- Portable / Battery-Powered Equipment
- Palmtops
- RF Keyboard / Mouse

4. Pin Function Description

MDT763020



Pin Name	I/O	Function
VSS		Ground
CP	I/O	External capacitor for adjusting VDET output delay time
VDET	Open Drain	Supply voltage detector. Output low if Vin < 2.0V.
VIN	Input	Supply voltage input
LX	Open Drain	Switching pin
ETR	Output	External switch transistor drive
CE	Input	Chip enable pin, high active
VOUT	Input	Output voltage monitor, IC internal power supply

ORDERING INFORMATION

Device	Package
MDT763020P	DIP
MDT763020S	SOP

5. Electrical Characteristics

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	----------	2.925	3.0	3.075	V
Output Ripple	----------		±2.5	±3	%
Vin	----------			6	V
Vstart	Iout=1mA		0.75	0.8	V
	Iout=30mA		1	1.2	V
Vhold	Iout=1mA	0.7			V
	Iout=30mA	0.9			V
Iin	Without loading		20	25	uA
Supply Current IDD1	VIN=VOUT × 0.95 Measured at VOUT pin without external component		45	52	uA
Supply Current IDD2	VIN=VOUT+0.5V Measured at VOUT pin without external component		8	12	uA
Shutdown Current	VCE=0 , VIN=VOUT×0.95			0.5	uA
LX Leakage Current	VIN=6V			1	uA
Maximum Oscillator Frequency	VIN=VOUT0.95 Measured at ETR pin		200	230	kHz
Oscillator Duty Cycle	VIN=VOUT_0.95 Measured at ETR pin	70	75	80	%
Low Battery Detect Voltage (LBDV)	VIN: HI to LOW	1.9	2.0	2.1	V
LBDV hysteresis Width	----------		0.1		V
Efficiency	L , SD , CL etc. connected		85		%

+3.0V Output Type

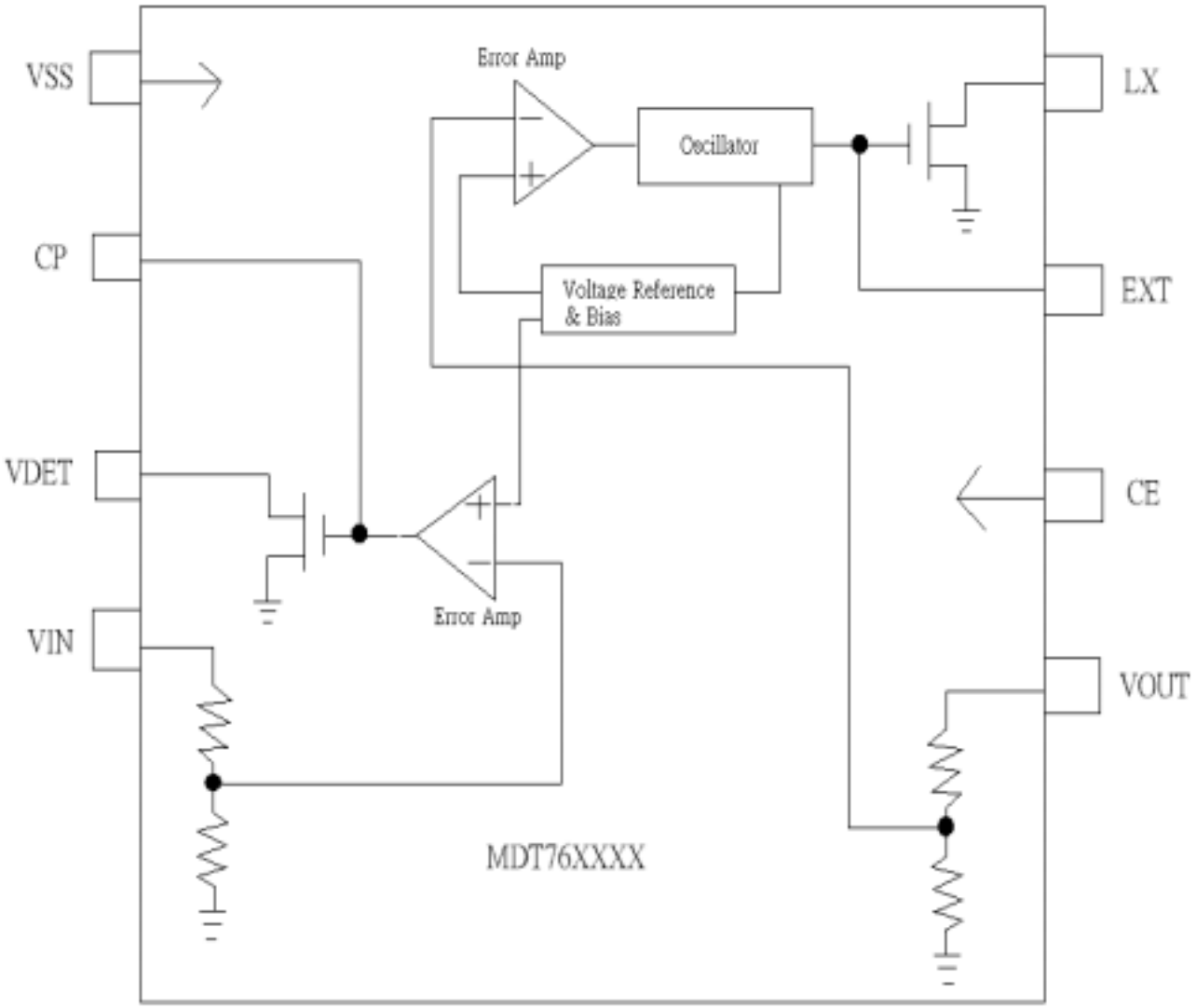
VIN=VOUT×0.6 ; IOUT=30mA ; Ta=25℃ (Unless otherwise specified)

Note:

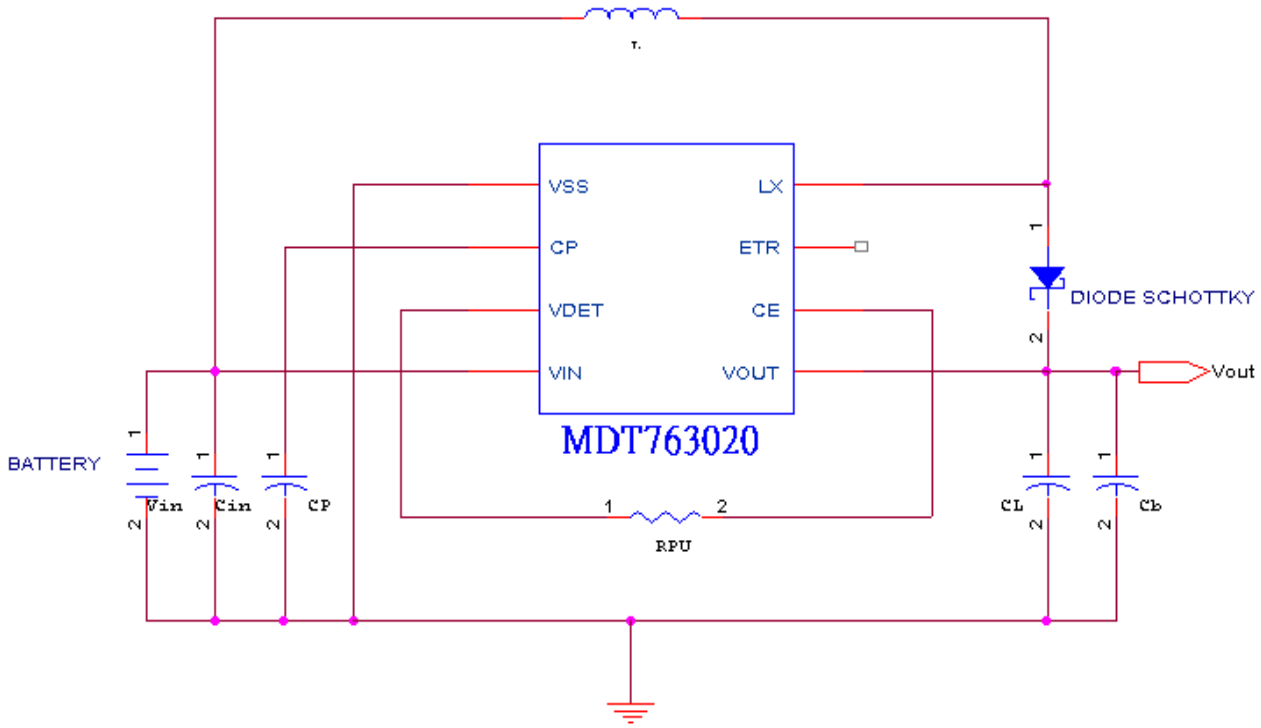
" Supply current 1 " is the supply current while the oscillator is continuously oscillating. In actual operation the oscillator periodically operates. The current actually provided by an external VIN source from VOUT pin.

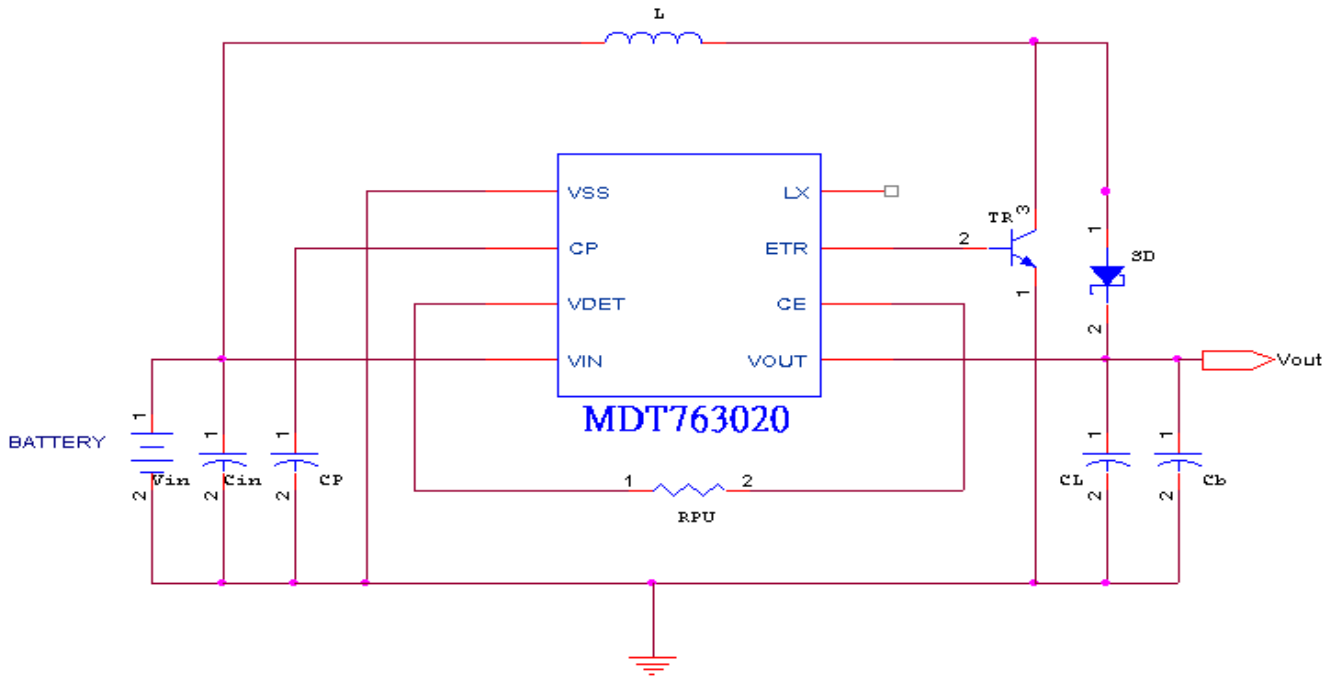
" Supply current 2 " is the supply current while the oscillator stop oscillating. In actual operation the oscillator periodically operates. The current actually provided by an external VIN source from VOUT pin

6.Application Circuit & Block Diagram



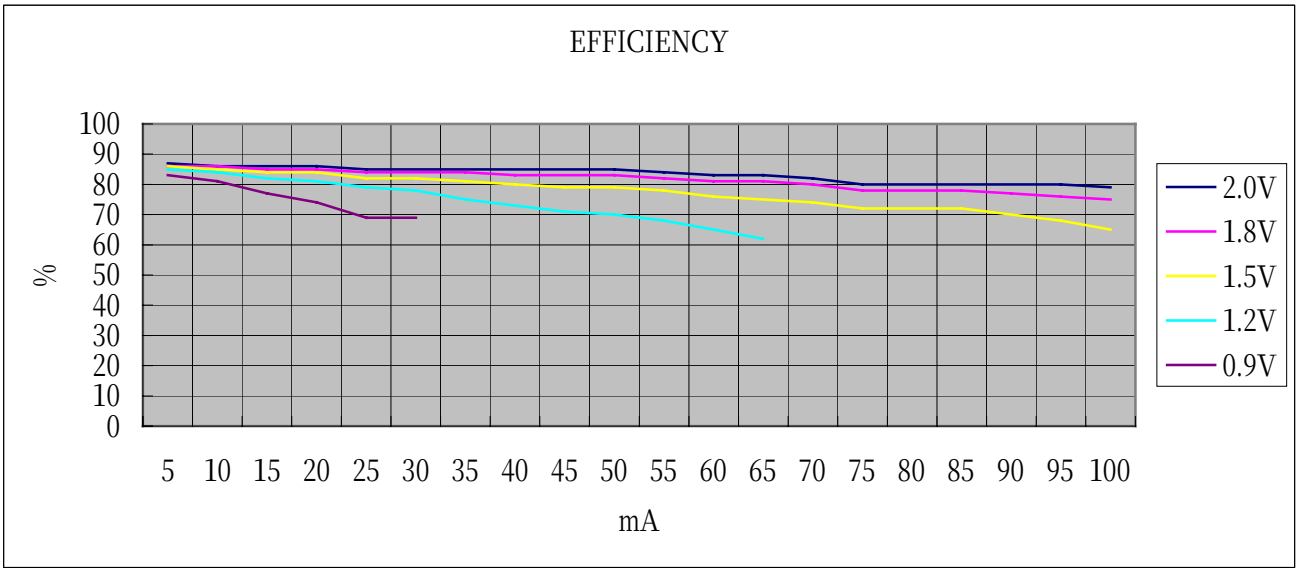
EXTERNAL COMPONENT : CP=22uF ; CIN=100uF ; CL=100uF ; Cb=0.1uF
L=100uH ; RPU=47K





External Transistor application ------using **N-Channel Power MOS FET**(1A)

7.TYPICAL PERFOMACE OF EFFICIENCY



8. OUTPUT VOLTAGE V.S LOADING

