

# MDT7730

## Step-up DC/DC Converter

### 1. General Description

MDT7730 is a step-up DC/DC converter .  
It has low start-up voltage and a high output voltage accuracy with low ripple.

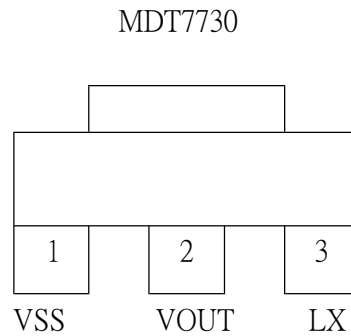
### 2. Features

- 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



Pin Name	I/O	Function
VSS		Ground
LX	Open Drain	Switching pin
VOUT	Input	Output voltage monitor, IC internal power supply

#### ORDERING INFORMATION

Device	Package
MDT7730ST	SOT89

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### 5. Electrical Characteristics

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
Output Voltage	-----	2.925	3	3.075	V
Output Ripple	-----		±2.5	±3	%
V <sub>in</sub>	-----			6	V
V <sub>start</sub>	I <sub>out</sub> =1mA		0.75	0.8	V
	I <sub>out</sub> =30mA		1.1	1.2	V
V <sub>hold</sub>	I <sub>out</sub> =1mA	0.7			V
	I <sub>out</sub> =30mA	1			V
I <sub>in</sub>	Without loading		20	25	uA
Supply Current IDD1	V <sub>IN</sub> =V <sub>OUT</sub> × 0.95 Measured at V <sub>OUT</sub> pin without external component		45	52	uA
Supply Current IDD2	V <sub>IN</sub> =V <sub>OUT</sub> +0.5V Measured at V <sub>OUT</sub> pin without external component		8	12	uA
Shutdown Current	V <sub>CE</sub> =0 , V <sub>IN</sub> =V <sub>OUT</sub> ×0.95			0.5	uA
LX Leakage Current	V <sub>IN</sub> =6V			1	uA
Maximum Oscillator Frequency	V <sub>IN</sub> =V <sub>OUT</sub> 0.95 Measured at ETR pin		200	230	kHz
Oscillator Duty Cycle	V <sub>IN</sub> =V <sub>OUT</sub> _0.95 Measured at ETR pin	70	75	80	%
Efficiency	L , SD , CL etc. connected		85		%

+3.0V Output Type

V<sub>IN</sub>=V<sub>OUT</sub>×0.6 ; I<sub>OUT</sub>=30mA ; T<sub>a</sub>=25°C (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 V<sub>IN</sub> source from V<sub>OUT</sub> pin.

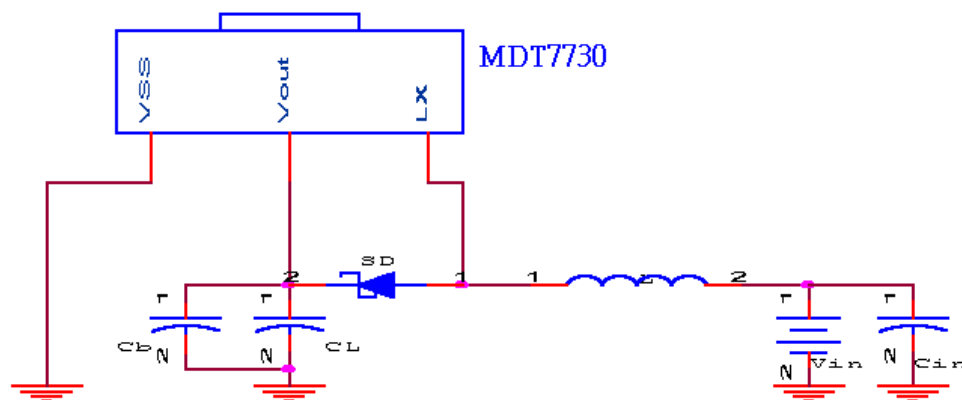
" Supply current 2 " is the supply current while the oscillator stop oscillating. In actual operation the oscillator periodically operates. The current actually provided by an external V<sub>IN</sub> source from V<sub>OUT</sub> pin

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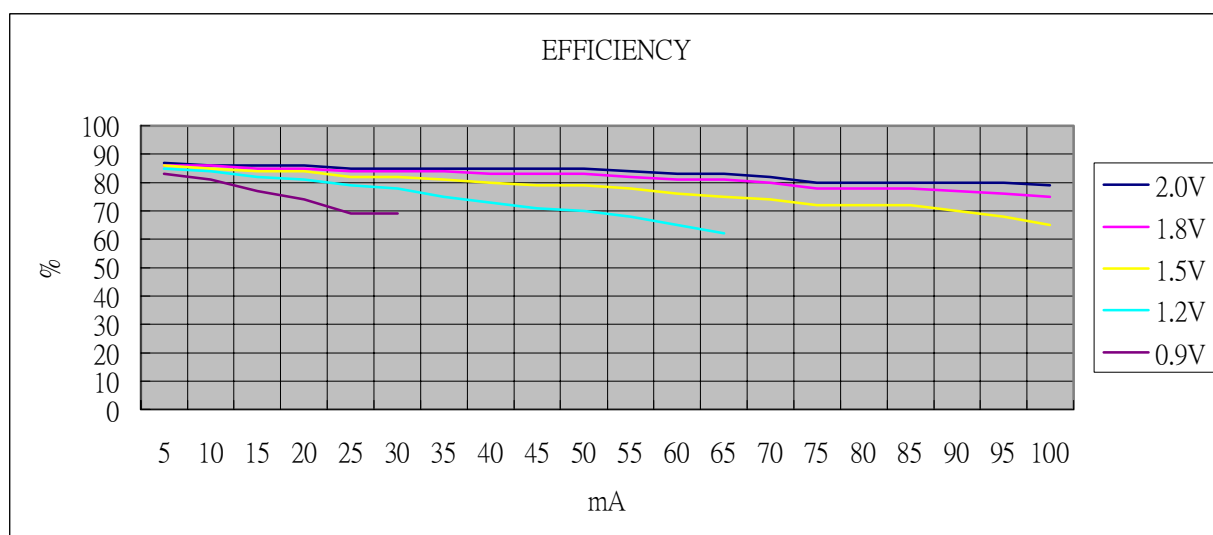
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### 6. Application Circuit

EXTERNAL COMPONENT :  $C_{in}=100\mu F$  ;  $C_L=100\mu F$  ;  $C_b=0.1\mu F$   
 $L=100\mu H$



### 7. TYPICAL PERFORMANCE OF EFFICIENCY



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### 8. OUTPUT VOLTAGE V.S LOADING

