



# LM8805-XX 600mA CMOS Low-Dropout Linear Regulators

## FEATURES

- Maximum output current:600mA.
- Highly accurate: Output Voltage $\pm$ 1.5%..
- Low power consumption.
- On-Chip protections, Short circuit
- Small input/output differential:600mV at 600mA

## APPLICATIONS

- Battery-Operated systems
- Portable Computers
- Portable Cameras and Video recorders
- Reference Voltage Source

## Product Description

The LM8805 series is a low-dropout linear regulators. There are devices designed specifically for battery-operated system. Ground current is very small (50uA-type), that significantly extending battery life. Low power consumption and high accuracy is achieved through CMOS and programmable fuse technologies, output voltage; 4.5V to 6.0V, The LM8805 consists of a high-precision voltage reference. An error correction circuit, and a current limited output drive. With good transient responses, output remains stable even during load charges. The SHDN input enables the output to be turned off, resulting in reduces power consumption.

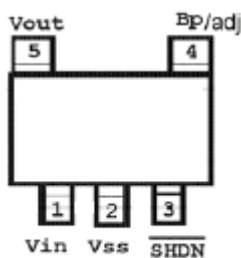
Also, the LM8805 having high ripple rejection ratios, the series can be used with power supply noise. 470pF capacitor from the Bypass input to ground reduces noise present on the internal reference, which in turn significantly reduces output noise, if output noise is not a concern, this input may be left unconnected. Larger capacitor values Cbp be used, but results in a longer time period to rated output voltage when power is initially applied.

The LM8805 incorporates both over-temperature and over-current protection.

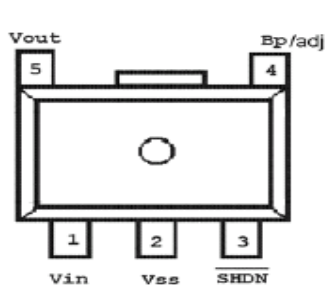
SOT23-5 (300mW) and SOT-89-5 (500mW) package available

### Absolute Maximum Ratings

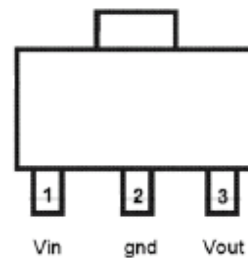
PARAMETER		SYMBOL	RATINGS	UNITS
Input Voltage		Vin	7	V
Output Current		Iout	600	mA
Output Voltage		Vout	Vss-0.3 ~ Vin+0.3	V
Continuous Total Power Dissipation	SOT-23-5	Pd	300	mW
	SOT-89-5		500	
	SOT-223		625	
Operating Ambient Temperature		Topr	-30 ~ +80	°C
Storage temperature		Tstg	-40 ~ +125	°C



SOT-23-5



SOT-89-5



SOT-223

## ELECTRICAL CHARACTERISTICS

(at  $T_a = 25^\circ\text{C}$ ,  $V_{IN} = V_{out}(\text{nominal}) + 1\text{V}$ , unless otherwise noted)

Parameter	Conditions	Min	Typ	Max	Units	Test Circuit
Output Voltage Accuracy	$I_o = 1\text{mA}$ $I_o = 1$ to $600\text{mA}$	-1.5 -3%		+1.5% +2%	%	
Line Regulation $\Delta V_{out}/\Delta V_{in} V_{out}$	$I_o = 1\text{mA}$ , $(V_{out} + 0.1\text{V}) < V_{in} < 6.5\text{V}$	-0.3	0.05	0.3	%/V	Fig. 1
Load Regulation (Note1)	$1\text{mA} \leq I_o \leq 600\text{mA}$ , $C_{out} = 1\mu\text{F}$		0.01	0.04	%/mA	Fig. 2
Dropout Voltage	for $V_{out} > 2.8\text{V}$ for $2.0\text{V} < V_{out} \leq 2.8\text{V}$ for $V_{out} \leq 2.0\text{V}$		600 900 1300	1000 1400 1900	mV	
Maximum Output Current	$V_{out} > 0.96 \cdot V_{rating}$	600			mA	
Current Limit		600	1300		mA	
EN Exit Delay	$C_{BP} = 0\mu\text{F}$ $C_{out} = 1\mu\text{F}$ $I_o = 100\text{mA}$		600		$\mu\text{sec}$	
EN Input Bias Current	$V_{SHDN} = V_{in}$			100	nA	
EN Input Low Current	$V_{SHDN} = \text{Gnd}$	-1	-0.3		$\mu\text{A}$	
EN Supply Current	$V_{SHDN} = \text{Gnd}$		0.01	1	$\mu\text{A}$	
EN Input Threshold Low	$V_{in} = 2.5$ to $5.5\text{V}$			0.4	V	
EN Input Threshold High	$V_{in} = 2.5$ to $5.5\text{V}$	2			V	
Ground Pin Current	$I_{out} = 0\text{mA} \dots 150\text{mA}$		50	85	$\mu\text{A}$	Fig. 3

Note: 1 Load Regulation is measured using pulse techniques with duty cycle <5%

## TEST CIRCUITS

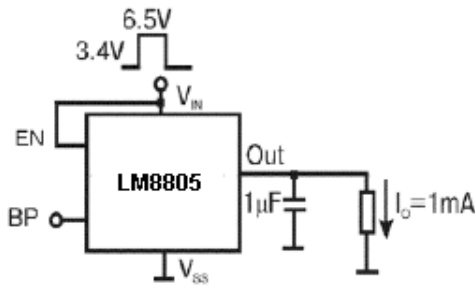


Figure1: Line Regulation

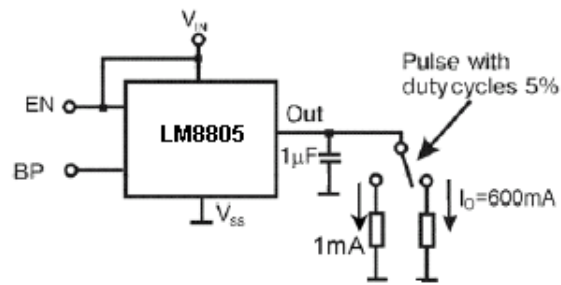


Figure2: Load Regulation

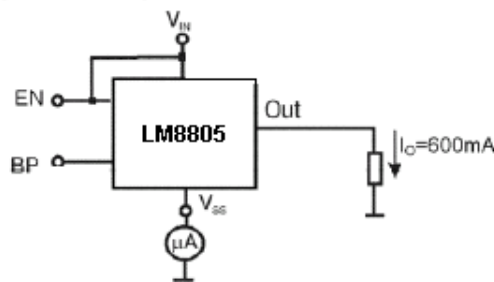
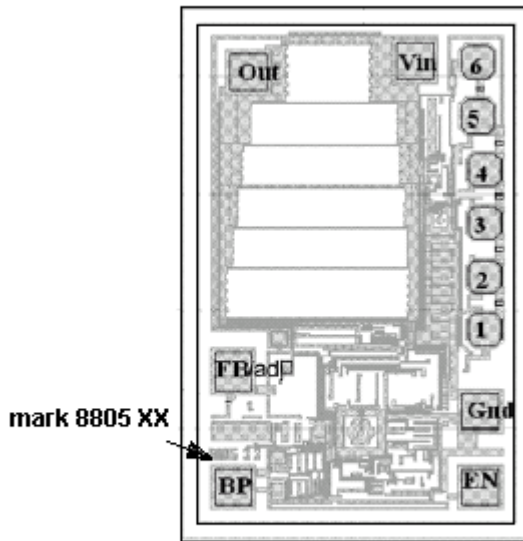


Figure3: Ground Current

PAD LOCATION LM8805



Chip size: 0.85\*1.29mm<sup>2</sup>

Coordinates (The center of Pad)

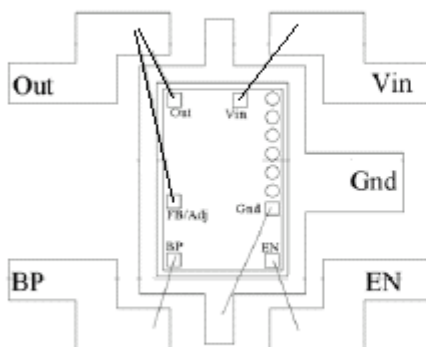
Pad	X(um)	Y(um)	Pad size
Vout	161	1134	90x90
Vin	565	1160	90x90
GND	725	312	90x90
EN	725	125	90x90
BP	125	125	90x90
FB/ADJ	125	406	90x90

1,2,3,4,5,6-Pads for trimming

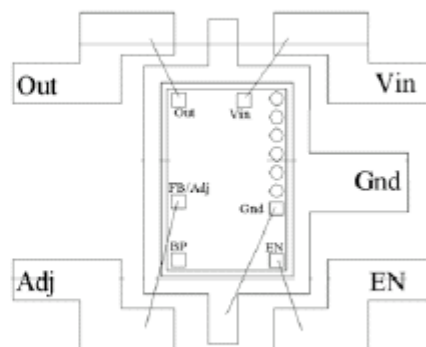
\* BP is connected with out for fixed version

\* FB is connected to adj for adjustable version

Wire bonding Drawing



8805-xx ( Fixed Version )



8805-adj (Adjustable Version)







