LM8805-XX 600mA CMOS Low-Dropout Linear Regulators

FEATURES

- Maximum output current:600mA.
- Highly accurate: Output Voltage+/-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.

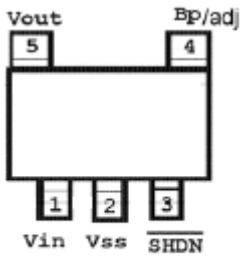
Also, the LM8805 having high ripple rejection ratios, the series can be used with power supply noise. 470pF capacitor from the Bypass input to ground reduces noise present on the internal reference, which in turn significantly reduces output noise, if output noise is not a concern, this input may be 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.

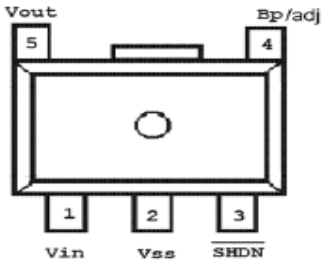
SOT23-5 (300mW) and SOT-89-5 (500mW) package available

Absolute Maximum Ratings

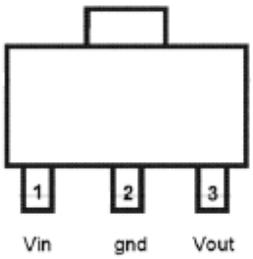
PARAMETER		SYMBOL	RATINGS	UNITS
Input Voltage		Vin	7	V
Output Current		Iout	600	mA
Output Voltage		Vout	Vss-0.3 ~ Vin+0.3	V
Continuous Total Power Dissipation	SOT-23-5 SOT-89-5 SOT-223	Pd	300 500 625	mW
Operating Ambient Temperature		Topr	-30 ~ +80	°C
Storage temperature		Tstg	-40 ~ +125	°C



SOT-23-5



SOT-89-5



SOT-223

ELECTRICAL CHARACTERISTICS

(at T_a = 25°C, V_{IN} = Vout (nominal)+1V, unless otherwise noted)

Parameter	Conditions	Min	Typ	Max	Units	Test Circuit
Output Voltage Accuracy	Io=1mA Io=1 to 600mA	-1.5 -3%		+1.5% +2%	%	
Line Regulation ΔVout/ΔVinVout	Io=1mA, (Vout+0.1V)< Vin <6.5V	-0.3	0.05	0.3	%/V	Fig. 1
Load Regulation (Note1)	1mA ≤ Io ≤ 600mA, Cout=1μF		0.01	0.04	%/mA	Fig. 2
Dropout Voltage for V_{OUT}>2.8V for 2.0V<V_{OUT}≤2.8V for V_{OUT}≤2.0V	Io=600mA		600 900 1300	1000 1400 1900	mV	
Maximum Output Current	Vout>0.96*Vrating	600			mA	
Current Limit		600	1300		mA	
EN Exit Delay	C_{BP}=0μF Cout=1μF Io=100mA		600		μsec	
EN Input Bias Current	V_{SHDN}=Vin			100	nA	
EN Input Low Current	V_{SHDN}=Gnd	-1	-0.3		μA	
EN Supply Current	V_{SHDN}=Gnd		0.01	1	μA	
EN Input Threshold Low	Vin=2.5 to 5.5V			0.4	V	
EN Input Threshold High	Vin=2.5 to 5.5V	2			V	
Ground Pin Current	Iout=0mA.....150mA		50	85	μA	Fig. 3

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

TEST CIRCUITS

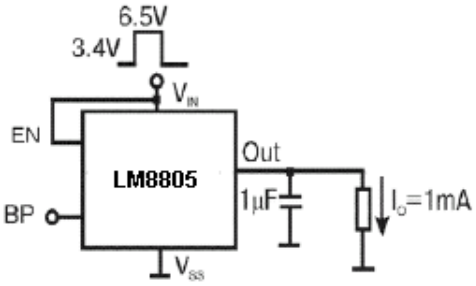


Figure1: Line Regulation

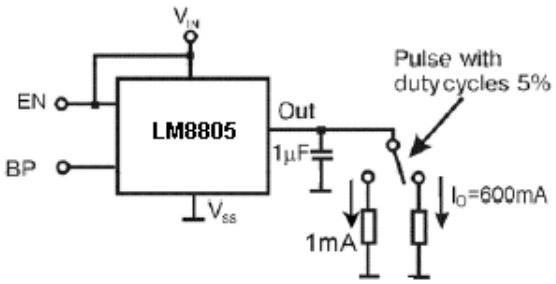


Figure2: Load Regulation

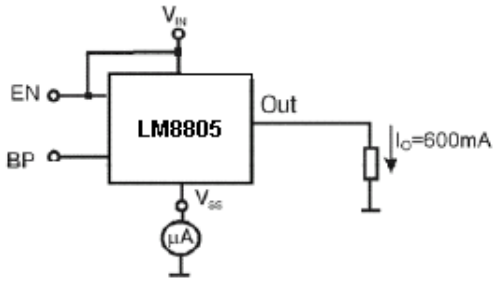
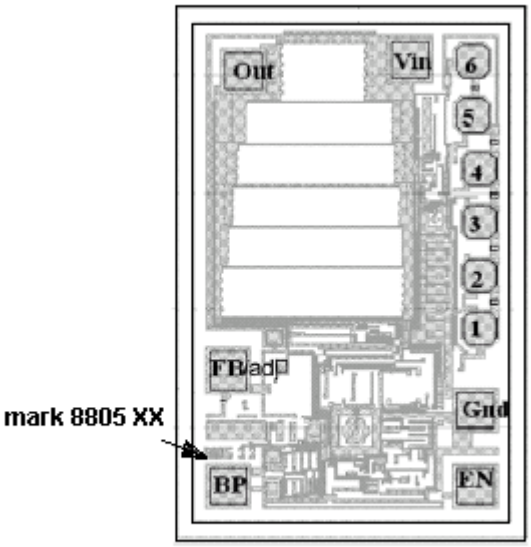


Figure3: Ground Current

PAD LOCATION LM8805



Chip size: 0.85*1.29mm^2

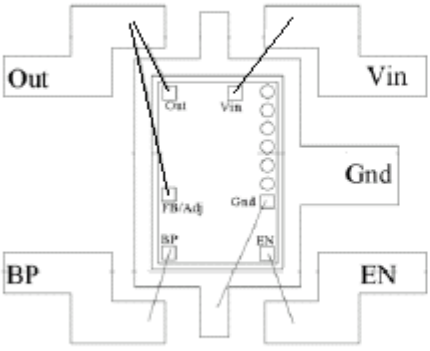
Coordinates (The center of Pad)

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

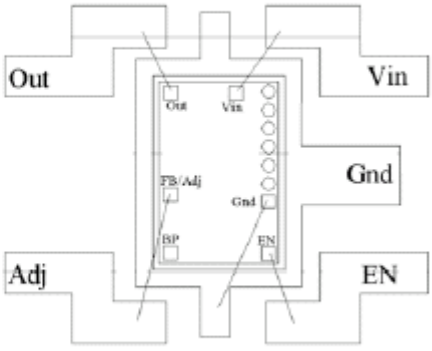
1,2,3,4,5,6-Pads for trimming

* 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)