

## FEATURES

- Maximum output current : 600mA
- Highly accurate: Output voltage  $\pm 1.5\%$
- Stability with Low ESR Capacitors
- Low power consumption
- On-chip Protections: Thermal, Short Circuit
- Small input/output differential: 600mV at 600mA
- Adjustable version

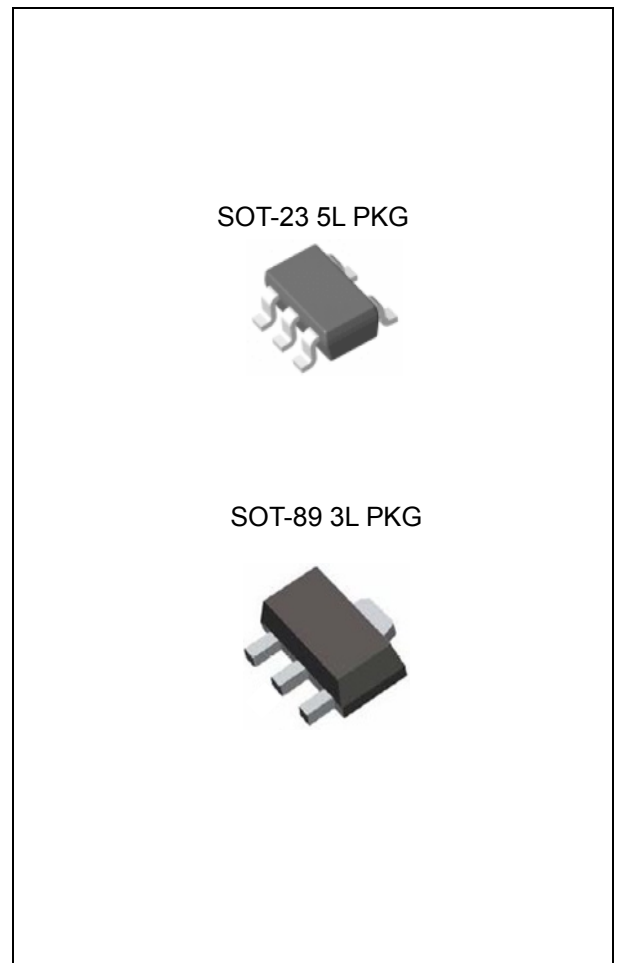
## APPLICATION

- Battery-Operated Systems
- Portable Computers
- Portable Cameras and Video Recorders
- Reference Voltage Sources
- Instrumentation
- Pagers

## DESCRIPTION

The LM8805 series is a low-dropout linear regulator. There are devices designed specifically for battery-operated systems. Ground current is very small (50uA-Typ), that significantly extending battery life. Low power consumption and high accuracy is achieved through CMOS and programmable fuse technologies. Output voltage: 1.5V to 6.0V.

SOT-23-5L(300mW) and SOT-89(500mW) packages are available.



## ORDERING INFORMATION

Device	Package
LM8805SF5-XX	SOT-23-5L
LM8805F-XX	SOT-89

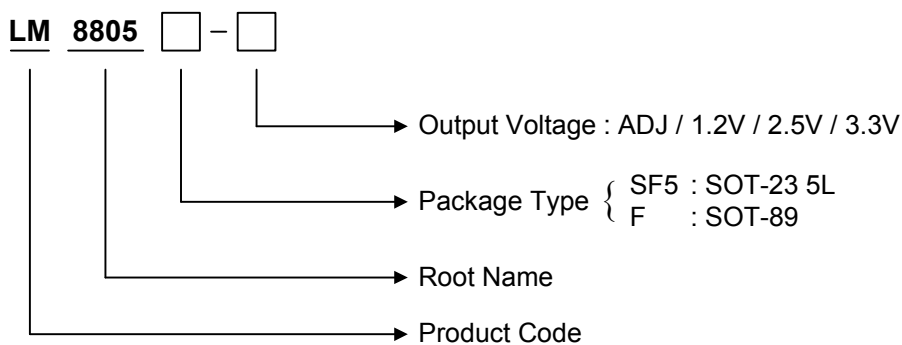
XX = Output Voltage = ADJ, 1.2V, 2.5V, 3.3V

## Absolute Maximum Ratings

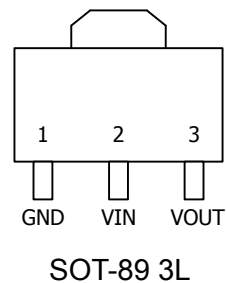
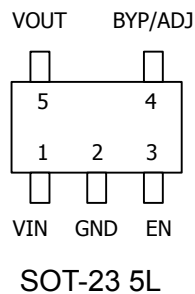
CHARACTERISTIC	SYMBOL	MIN.	MAX.	UNIT
Input Voltage	$V_{IN}$	-	8	V
Output Current	$I_{OUT}$	-	1	A
Output Voltage	$V_{OUT}$	$V_{SS} - 0.3$	$V_{IN} + 0.3$	V
Storage Temperature Range	$T_{STG}$	-40	125	$^{\circ}C$
Operating Ambient Temperature	$T_A$	-40	125	$^{\circ}C$

## Ordering Information

V <sub>OUT</sub>	Package	Order No.	Description	Supplied As	Status
ADJ	SOT-23 5L	LM8805SF5-ADJ	600mA, Enable, Adjustable	Reel	Active
1.2 V	SOT-23 5L	LM8805SF5-1.2V	600mA, Fixed	Reel	Contact us
	SOT-89 3L	LM8805F-1.2V	600mA, Fixed	Reel	Contact us
2.5 V	SOT-23 5L	LM8805SF5-2.5V	600mA, Fixed	Reel	Active
	SOT-89 3L	LM8805F-2.5V	600mA, Fixed	Reel	Active
3.3 V	SOT-23 5L	LM8805SF5-3.3V	600mA, Fixed	Reel	Active
	SOT-89 3L	LM8805F-3.3V	600mA, Fixed	Reel	Active



## PIN CONFIGURATION

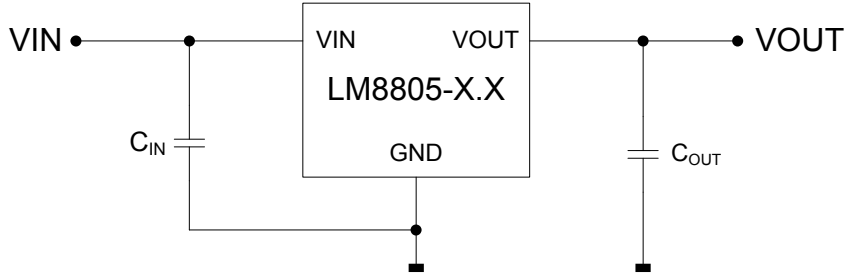


## PIN DESCRIPTION

Pin No.	SOT-23 5L		SOT-89 3L	
	Name	Function	Name	Function
1	V <sub>IN</sub>	Input Supply	GND	Ground
2	GND	Ground	V <sub>IN</sub>	Input Supply
3	EN	Enable	V <sub>OUT</sub>	Output Voltage
4	BYP/ADJ	Bypass for Fixed output or Output adjust for Adjustable output	-	-
5	V <sub>OUT</sub>	Output Voltage	-	-

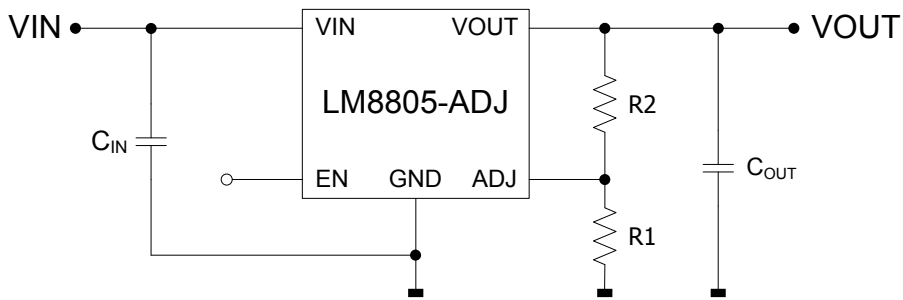
## TYPICAL APPLICATION

### Typical 3 Pin Application Circuit



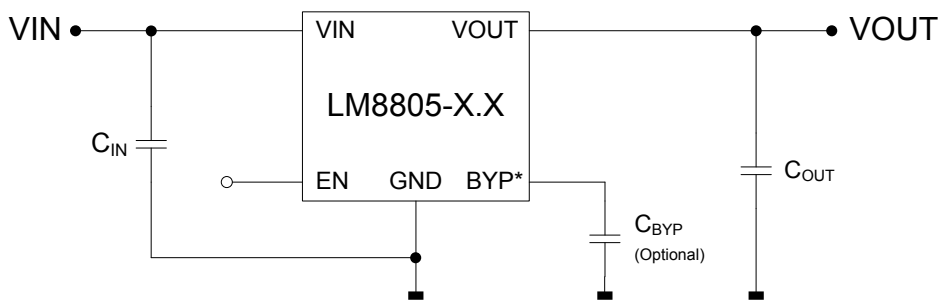
### Typical 5 Pin Application Circuit

- Output Adjustment (Adjustable version)



$$V_{OUT} = V_{ADJ}(1+R2/R1)$$

- Fixed Voltage Application



\* Note) BYP pin can be left open if low noise operation is not required.

**ELECTRICAL CHARACTERISTICS**(At  $T_A = 25^\circ\text{C}$ ,  $V_{IN} = V_{OUT}(\text{nominal}) + 1\text{V}$ , unless otherwise noted)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Voltage Accuracy	$V_O$	$I_O = 1\text{mA}$ $I_O = 1 \text{ to } 600\text{mA}$	-1.5 -3		+1.5 +2	%
Adjustable Voltage	$V_{ADJ}$	$I_O = 1\text{mA}$ $I_O = 1 \text{ to } 600\text{mA}$	1.251 1.232	1.27	1.289 1.295	V
line Regulation	$\Delta V_{LINE}$	$I_O = 1\text{mA}$ , $(V_{OUT}+1\text{V}) < V_{IN} < 6.5\text{V}$	-0.3	0.05	0.3	%/V
Load Regulation <sup>(Note 1)</sup>	$\Delta V_{LOAD}$	$1\text{mA} \leq I_O \leq 600\text{mA}$ , $C_{OUT} = 1\mu\text{F}$		0.5	1.5	%
Dropout Voltage	$V_{DROP}$	$V_{OUT} > 2.8\text{V}$ , $I_O = 600\text{mA}$		600	1000	mV
		$2.0\text{V} < V_{OUT} \leq 2.8\text{V}$ , $I_O = 600\text{mA}$		900	1400	
		$V_{OUT} \leq 2.0\text{V}$ , $I_O = 600\text{mA}$		1300	1900	
Maximum Output Current	$I_{O(MAX)}$	$V_{OUT} > 0.96 \cdot V_{Rating}$	600			mA
Current Limit	$I_{CL}$			1300		mA
EN Exit Delay		$C_{BP} = 0\mu\text{F}$ , $C_{OUT} = 1\mu\text{F}$ $I_O = 100\text{mA}$		600		usec
EN Input Bias Current		$V_{EN} = \text{GND}$			100	nA
EN Input Low Current		$V_{EN} = V_{IN}$	-1	-0.3		$\mu\text{A}$
EN Supply Current		$V_{EN} = V_{IN}$		0.01	1	$\mu\text{A}$
EN Input Threshold Low	$V_{IL}$	$V_{IN} = 2.5 \text{ to } 5.5\text{V}$			0.4	V
EN Input Threshold High	$V_{IH}$	$V_{IN} = 2.5 \text{ to } 5.5\text{V}$	2			V
Ground Pin Current	$I_{GND}$	$I_{OUT} = 0\text{mA} \text{ to } 600\text{mA}$		50	85	$\mu\text{A}$
Thermal Shutdown Temperature	$T_{SD}$	$I_{OUT} = 10\text{mA}$		155		$^\circ\text{C}$
Thermal Shutdown Hysteresis	$\Delta T_{SD}$	$I_{OUT} = 10\text{mA}$		10		$^\circ\text{C}$
$V_O$ Temperature Coefficient		$I_{OUT} = 10\text{mA}$		30		ppm
Power Supply Ripple Rejection	PSRR	$I_{OUT} = 100\text{mA}$ , $C_{OUT} = 2.2\mu\text{F}$ , $f = 100\text{Hz}$		55		dB

Note 1. Load Regulation is measured using pulse techniques with duty cycle &lt; 5%

**OPERATING CHARACTERISTICS**

T.B.D

**APPLICATION INFORMATION****Detailed Description**

The LM8805 consists of a high-precision voltage reference, an error correction circuit, and a current limited output driver. With good transient responses, output remains stable even during load changes. The SHDN input enables the output to be turned off, resulting in reduced power consumption.

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

### External Capacitors

The LM8805 can stable work with cheap MLCC output Capacitor.

The LM8805 having high ripple rejection ratios, the series can be used with power supply noise. A 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.