

## BM5805 45V,350mA, 2.5uA,Low-Dropout Voltage Regulator

### Features

- Low Quiescent Current : <math>3 \mu A</math>
- Wide Input Voltage Range : 3V to 45V
- High Output Current : 350mA
- Low Dropout Voltage : 300mV@200mA
- Fixed Output Voltages :5.0V
- Output Voltage Tolerance :  $\pm 1\%$ 高精度
- Current Limit Protection
- Short Circuit Protection
- Thermal Shutdown Protection
- Available Packages : TO252-2

### Application

- Battery-powered Equipment
- Smoke Detector and Sensor
- Micro Controller Applications
- Home Appliance

大功率 CMOS LDO 替代双极 LDO

输入电压低至 5.5V 仍然可输出+5V

输入电压冲到 45V 仍然耐操不坏

### Description

The BM5805 is an ultra-small, low dropout (LDO) linear regulator that can source 150mA of output current. The BM5805 is designed to provide high input voltage, and excellent load and line transient performance.

The BM5805 has thermal shutdown, current limit, and short circuit protections for added safety.

The BM5805 contains fixed output voltages of 5.0V.

### Device Information<sup>(1)</sup>

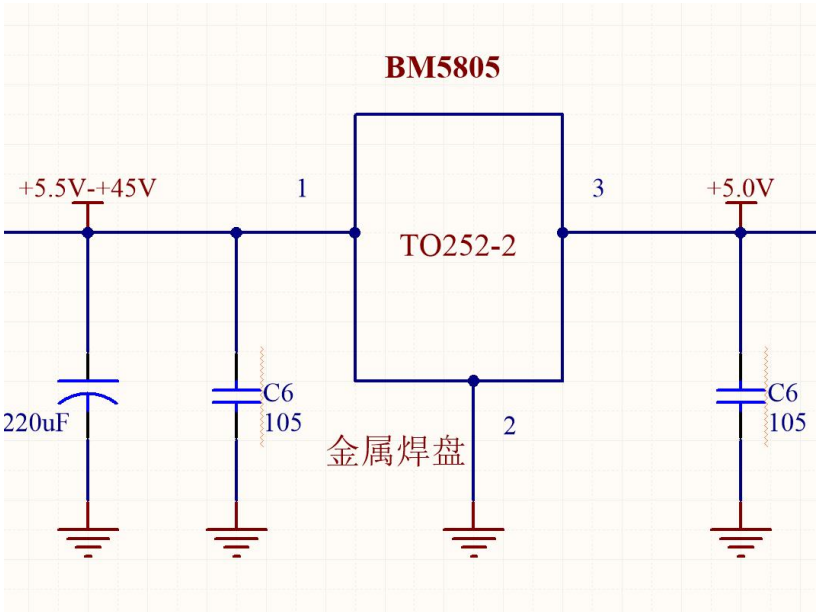
PART NUMBER	PACKAGE	Minimum quantity
BM5805	TO252-2	2.5K/reel

脚对脚替代输出精度低的 78D05 或 78M05，耐压更高；

虽然 78M05 输出电流标了 0.5A 或 1A，但是输入 12V 以上的时候，TO252 的封装输出电流只能输出 0.3A 最大；

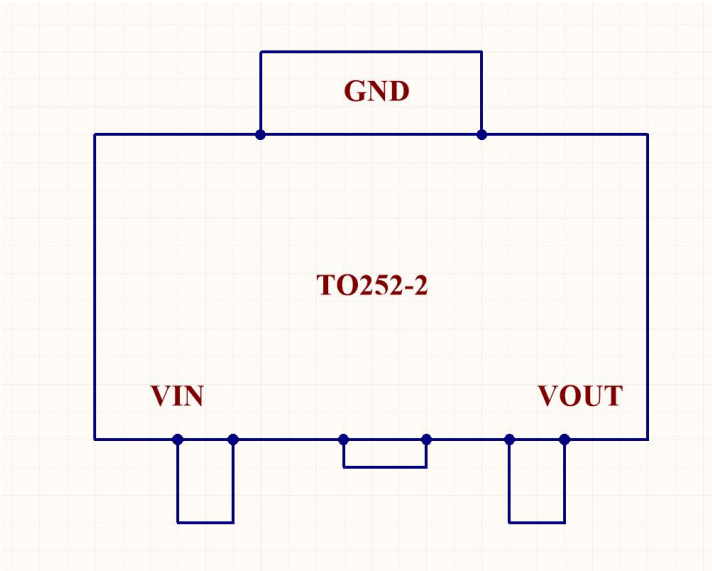
同时，BM5805 的压差，静态电流都碾压的 78 系列好几个数量级。

Typical Application Circuit



输入电容靠近芯片的一二脚，必要时，输入串电阻减过冲

Pin Configuration : TO252-2L

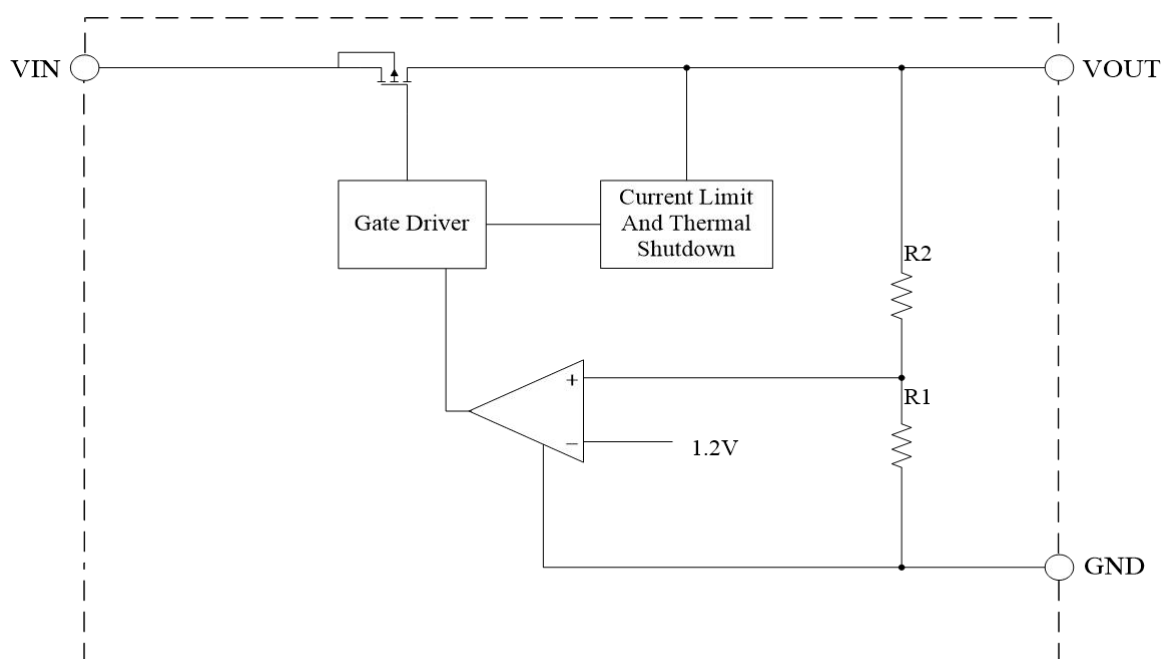


## Absolute Maximum Ratings

Item	Description	Min	Max	Unit
Voltage	VIN to GND	-0.3	48	V
	VOUT to GND	-0.3	7	V
	VIN to VOUT	-0.3	45	V
Current	Peak output current	Internally limited		
Temperature	Operating Temperature Range	-40	125	°C
	Storage Temperature	-40	150	°C
Thermal Resistance (Junction to Ambient)	TO252	50		°C/W
Power Dissipation	TO252	2500		mW
Electrostatic discharge rating	Human Body Model (HBM)	4		kV
	Charged Device Model (CDM)	200		V

Note: exceeding the range specified by the rated parameters will cause damage to the chip, and the working state of the chip beyond the range of rated parameters cannot be guaranteed. Exposure outside the rated parameter range will affect the reliability of the chip.

内部框图:



## Electrical Characteristics

(At  $T_A=25^{\circ}\text{C}$ ,  $C_{IN}=0.1\mu\text{F}$ ,  $V_{IN}=V_{OUTNOM}+2\text{V}$ ,  $C_{OUT}=0.1\mu\text{F}$ , unless otherwise noted)

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
$V_{IN}$	Input voltage		3	—	45	V
$I_{GND}$	Quiescent current	$V_{IN}=12\text{V}$ , No-load	—	2.5	3	$\mu\text{A}$
$V_{OUT}$	Output Voltage	$V_{IN}=12\text{V}$ , $I_{OUT}=10\text{mA}$	$V_{OUTNOM} * 0.99$	+5V	$V_{OUTNOM} * 1.01$	V
$I_{OUT\_MAX}$	Output current	$V_{IN}=V_{OUTNOM}+1\text{V}$	—	350	—	mA
$V_{DROP}$		$I_{OUT}=200\text{mA}$ $V_{IN}=V_{OUTNOM}-0.1\text{V}$	—	300	—	mV
$\Delta V_{OUT}/\Delta I_{OUT}$	Load Regulation	$V_{IN}=7\text{V}$ , $1\text{mA}\leq I_{OUT}\leq 150\text{mA}$	—	0.1	—	mV/mA
$\Delta V_{OUT}/\Delta V_{IN}$	Line Regulation	$I_{OUT}=1\text{mA}$ , $V_{OUTNOM}+2\text{V}\leq V_{IN}\leq 24\text{V}$	—	0.1	—	mV/V
$I_{LIMIT}$	Current Limit	$V_{IN}=V_{OUTNOM}+2\text{V}$	—	400	—	mA
$I_{SHORT}$	Short Current	$V_{IN}=12\text{V}$	—	100	—	mA
$T_{SHDN}$	Thermal Shutdown Temperature	Shutdown, temperature increasing	—	154	—	$^{\circ}\text{C}$
		Reset, temperature decreasing	—	125	—	

**Note:** \*1 Dropout Voltage is the voltage difference between the input and the output at which the output voltage drops 2% below its nominal value.

## Package Outline:

普通的 TO252-2 尺寸图, 详见 BM1018AH 或 BM1084, 不再赘述