



## 概述

HLP3985IM5X系列是以CMOS工艺制造的高精度，低噪音，快速响应低压差线性稳压器。该系列的稳压器内置固定的参考电压，误差修正电路，限流电路，相位补偿电路以及低内阻的MOSFET，达到高纹波抑制，低输出噪音，快速响应低压差的性能。

HLP3985IM5X系列兼容体积比钽电容更小的陶瓷电容，而且不需使用0.1 $\mu$ F的By-pass电容，更能节省空间，降低了成本。因具有高精度的输出稳定性，以及快速瞬态响应性能，从而能应付负载电流的波动，所以特别适合应用在手持设备及射频产品上。

通过控制芯片上的CE脚，可将输出关断，关断输出后的静态电流只有0.1 $\mu$ A（Typ值），从而大大降低了功耗。

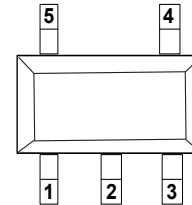
## 特点

- ◆输出范围：2.5V-3.6V
- ◆300mA输出电流
- ◆高电源抑制比：70分贝1千赫
- ◆极低的静态偏置电流: 75 $\mu$ A（典型）
- ◆在关机模式下小于1 $\mu$ A
- ◆交界处的温度运作为-40° C至+85° C

## 应用场合

- ◆CDMA/GSM 移动电话
- ◆PDAs/MP3
- ◆WLAN和蓝牙设备
- ◆无绳电话  
  电池供电系统

## 封装形式

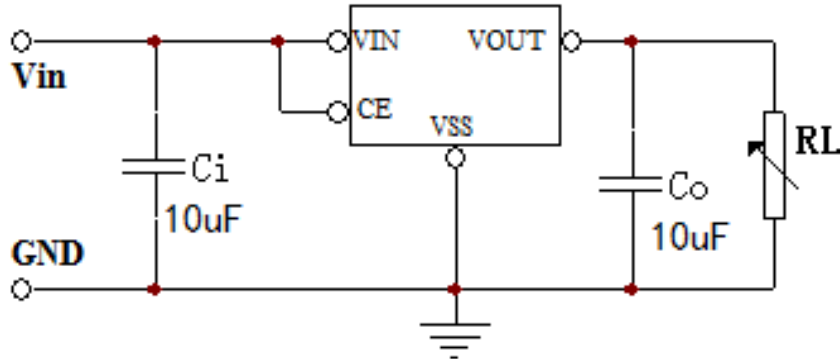


SOT-23-5L

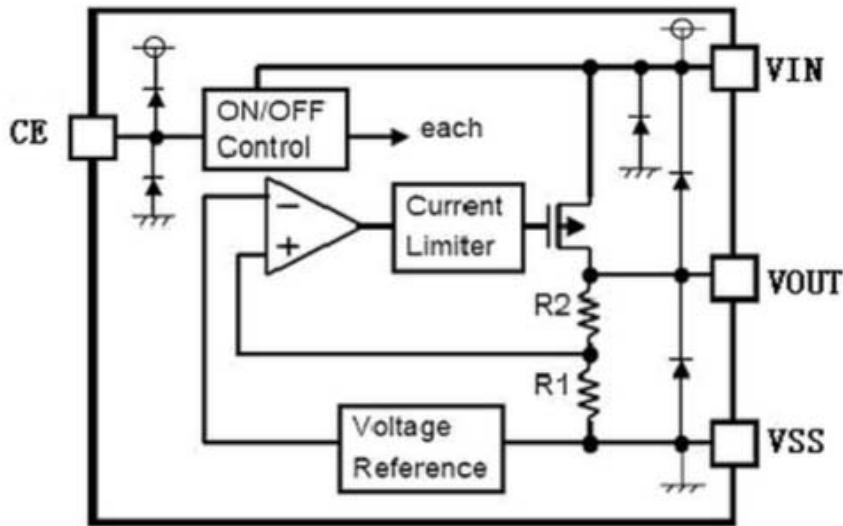
PIN脚位	符号	功能说明
SOT-23-5L		
1	V <sub>IN</sub>	电源输入端
2	V <sub>SS</sub>	地
3	CE	使能端
4	NC	悬空
5	V <sub>OUT</sub>	电源输出端



### 典型应用图



### 功能框图



### 绝对最大额定值

项目	符号	说明	极限值	单位
电压	Vin	输入电压	6	V
	Vout	输出电压	VSS-0.3~Vin+0.3	V
电流	Iout	输出电流	400	mA
功耗	PD	最大允许功耗	300	mW
温度	T <sub>OPR</sub>	工作温度	-20~+85	°C
	T <sub>stg</sub>	存储温度	-40~+125	°C
	T <sub>solder</sub>	焊接温度	260°C, 10s	

注: 极限参数是指无论在任何条件下都不能超过的极限值。万一超过此极限值, 将有可能造成产品劣化等物理性损伤; 同时在接近极限参数下, 不能全部保证芯片可以正常工作。



## 电气参数

( $V_{in}=V_{out}+1V$ ,  $C_{in}=1\mu F\sim 10\mu F$ ,  $C_{out}=1\mu F\sim 10\mu F$ ,  $T_a=25^\circ C$ 。除特别指定)

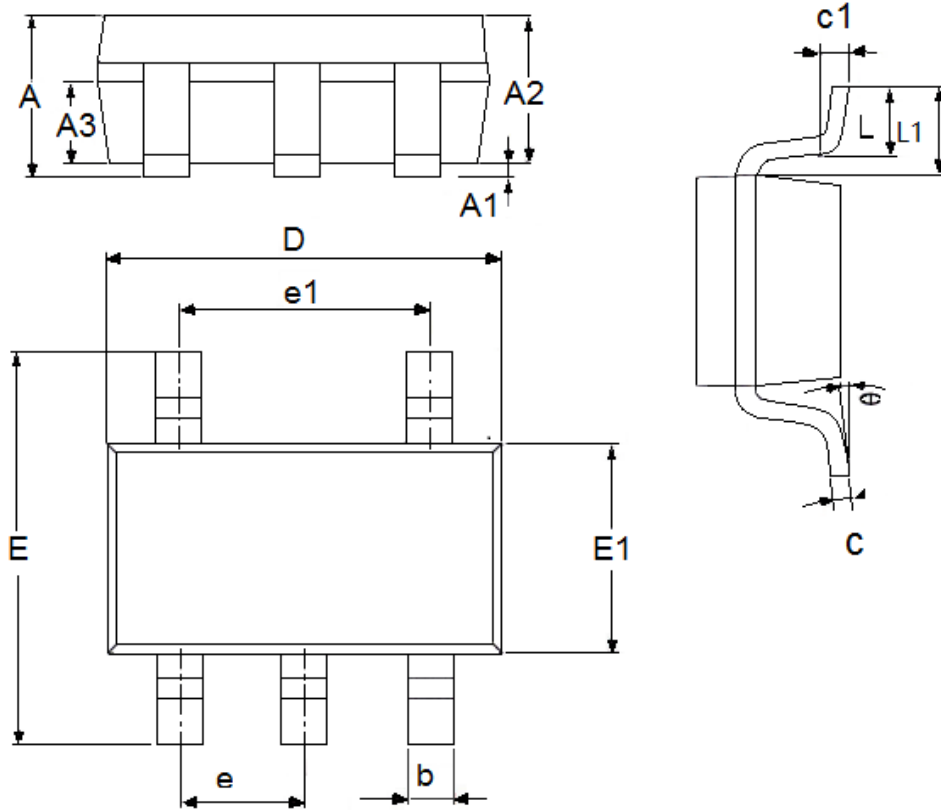
特性	符号	条件	最小值	典型值	最大值	单位
输出电压	$V_{OUT(E)}$ (Note 2)	$I_{OUT}=40mA$ , $V_{IN}=V_{out}+1V$	X 0.98	$V_{OUT(T)}$ (Note 1)	X 1.02	V
输入电压	$V_{IN}$				6.0	V
最大输出电流	$I_{OUTmax}$	$V_{IN}=V_{out}+1V$		300		mA
负载特性	$\Delta V_{OUT}$	$V_{IN}=V_{out}+1V$ , $1mA \leq I_{OUT} \leq 100mA$		50		mV
压差 (Note 3)	$V_{dif1}$	$I_{OUT} = 100mA$		100		mV
	$V_{dif2}$	$I_{OUT} = 200mA$		230		mV
静态电流	$I_{SS}$	$V_{IN}=V_{out}+1V$		75		$\mu A$
关断电流	$I_{CEL}$	$V_{ce} = 0V$		1		$\mu A$
电源电压调整率	$\frac{\Delta V_{OUT}}{\Delta V_{IN} \cdot V_{OUT}}$	$I_{OUT} = 40mA$ $V_{out}+1V \leq V_{IN} \leq 8V$		0.05		%/V
输出噪声	en	$I_{OUT} = 40mA$ , 300Hz~50kHz		50		$\mu V_{rms}$
纹波抑制比	PSRR	$V_{in} = [V_{out}+1]V$ +1Vp-pAC $I_{OUT} = 40mA, f=1kHz$		70		dB

- 注释:**
- $V_{OUT(T)}$ : 规定的输出电压
  - $V_{OUT(E)}$ : 有效输出电压 ( 即当  $I_{OUT}$  保持一定数值,  $V_{IN} = (V_{OUT(T)}+1.0V)$ 时的输出电压。
  - $V_{dif}$ :  $V_{IN1} - V_{OUT(E)'}'$   
 $V_{IN1}$ : 逐渐减小输入电压, 当输出电压降为  $V_{OUT(E)}$  98% 时的输入电压。  
 $V_{OUT(E)'}' = V_{OUT(E)} \times 98\%$ 。



## 封装信息

- SOT-23-5L



参数	尺寸 (mm)		尺寸 (Inch)	
	最小值	最大值	最小值	最大值
A	1.05	1.45	0.0413	0.0571
A1	0	0.15	0.0000	0.0059
A2	0.9	1.3	0.0354	0.0512
A3	0.6	0.7	0.0236	0.0276
b	0.25	0.5	0.0098	0.0197
c	0.1	0.23	0.0039	0.0091
D	2.82	3.05	0.1110	0.1201
e1	1.9(TYP)		0.0748(TYP)	
E	2.6	3.05	0.1024	0.1201
E1	1.5	1.75	0.0512	0.0689
e	0.95(TYP)		0.0374(TYP)	
L	0.25	0.6	0.0098	0.0236
L1	0.59(TYP)		0.0232(TYP)	
θ	0	8°	0.0000	8°
c1	0.2(TYP)		0.0079(TYP)	



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