



概述

LP3985IM5X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。

LP3985IM5X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 μ 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 μ A（Typ值），从而大大降低了功耗。

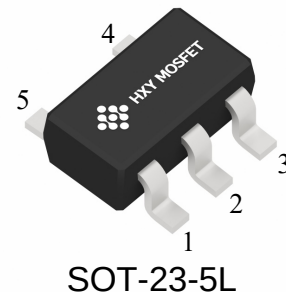
特点

- ◆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 μ A（典型）
- ◆在关机模式下小于1 μ A
- ◆交界处的温度运作为-40 $^{\circ}$ C至+85 $^{\circ}$ 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

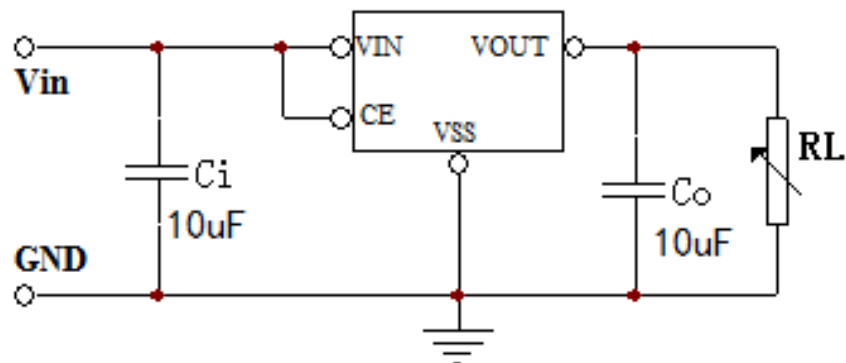
封装形式



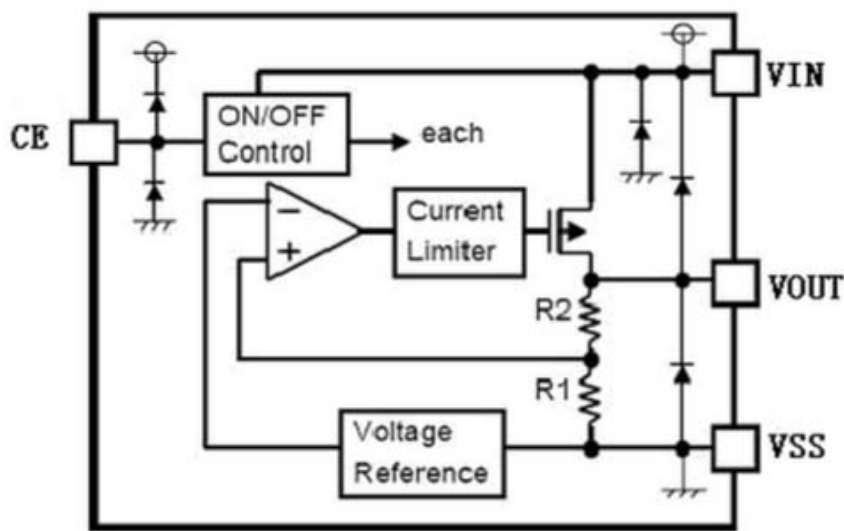
PIN脚位	符号	功能说明
SOT-23-5L		
1	V_{IN}	电源输入端
2	V_{SS}	地
3	CE	使能端
4	NC	悬空
5	V_{OUT}	电源输出端



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 _{OPR}	工作温度	-20~+85	℃
	T _{stg}	存储温度	-40~+125	℃
	T _{solder}	焊接温度	260℃, 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)

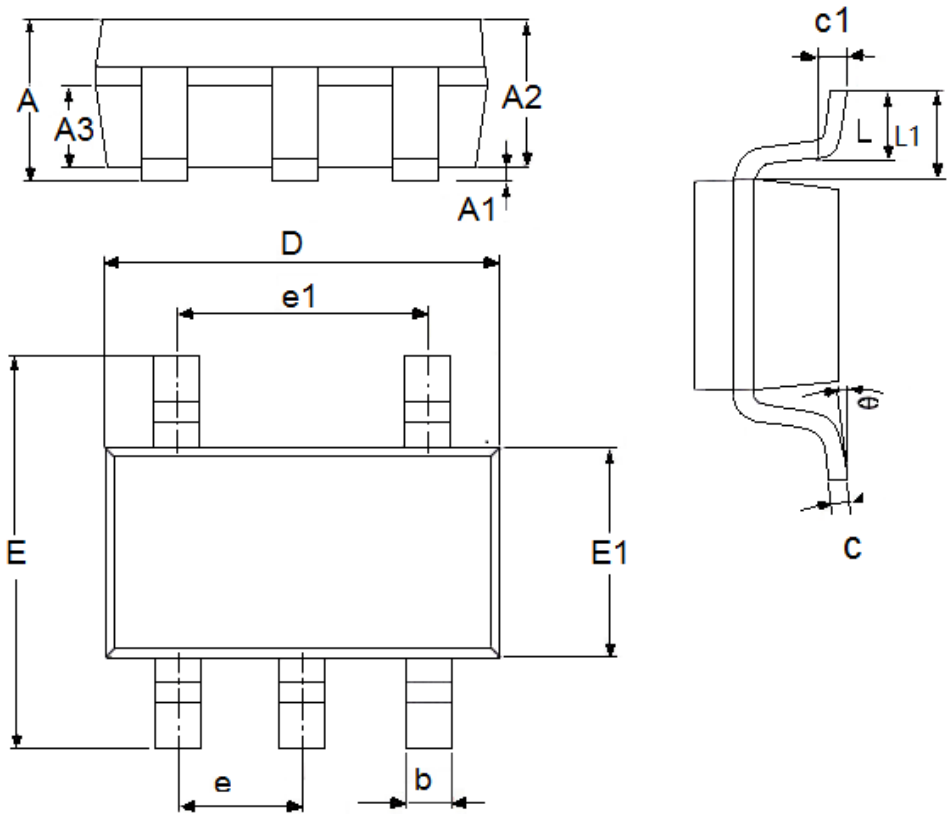
特性	符号	条件	最小值	典型值	最大值	单位
输出电压	$V_{OUT}(E)$ (Note 2)	$I_{OUT}=40mA$, $V_{IN}=V_{OUT}+1V$	$\times 0.98$	$V_{OUT}(T)$ (Note 1)	$\times 1.02$	V
输入电压	V_{IN}				6.0	V
最大输出电流	I_{OUTmax}	$V_{IN}=V_{OUT}+1V$		300		mA
负载特性	ΔV_{OUT}	$V_{IN}=V_{OUT}+1V$, $1mA \leq I_{OUT} \leq 100mA$		50		mV
压差 (Note 3)	V_{dif1}	$I_{OUT}=100mA$		100		mV
	V_{dif2}	$I_{OUT}=200mA$		230		mV
静态电流	I_{SS}	$V_{IN}=V_{OUT}+1V$		75		μA
关断电流	I_{CEL}	$V_{ce}=0V$		1		μA
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		μV_{rms}
纹波抑制比	PSRR	$V_{IN}=[V_{OUT}+1]V$ $+1V_{p-p}AC$ $I_{OUT}=40mA, f=1kHz$		70		dB

- 注释: 1、 $V_{OUT}(T)$: 规定的输出电压
2、 $V_{OUT}(E)$: 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。
3、 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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