



概述

HT73XX-1是一款采用 CMOS 技术的低压差线性稳压器。最大输出电流为 250mA 且允许的最高输入电压为 18V。具有几个固定的输出电压，范围从 2.5V 到 5.0V。COMS 技术可确保其具有低压降和低静态电流的特性。

功能特点

- 低功耗
- 低压降
- 较低的温度系数
- 最高输入电压：18V
- 典型静态电流：2uA
- 最大输出电流：250mA
- 输出电压精度：±2%
- 封装类型：SOT-23，SOT-89

应用领域

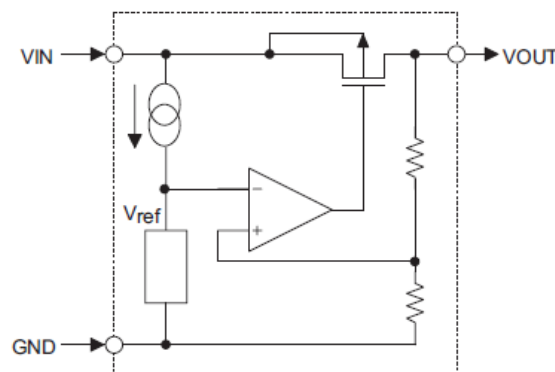
- 电池供电设备
- 通信设备
- 音频/视频设备

选型表

型号	输出电压	封装类型	正印
HT7325-1	2.5V	SOT-23	73xx-1(封装为 SOT-23)
HT7327-1	2.7V		
HT7330-1	3.0V		
HT7333-1	3.3V		
HT7336-1	3.6V		
HT7344-1	4.4V		
HT7350-1	5.0V		

注：“xx”代表输出电压。

电路功能框图



极限参数

电源供应电压 ----- -0.3V ~+18V 工作环境温度 ----- -40°C~+85°C
 储存温度范围 ----- -50°C~+125°C

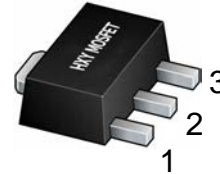
注：这里只强调额定功率，超过极限参数所规定的范围将对芯片造成损害，无法预期芯片在上述标示范围外的工作状态，而且若长期在标示范围外的条件下工作，可能影响芯片的可靠性。



引脚图



SOT-23



SOT-89

引脚说明

引脚序号	引脚名称	说明
1	GND	地
2	VIN	输入脚
3	VOUT	输出脚

热能信息

符号	参数	封装类型	最大值	单位
θ_{JA}	热阻（与环境连接）（假设无环境气流、无散热片）	SOT-23	500	°C/W
		SOT-89	200	°C/W
P_D	功耗	SOT-23	0.2	W
		SOT89	0.5	W

注： P_D 值是在 $T_a=25^\circ\text{C}$ 时测得。

直流电特性（除特别说明外， $T_A = +25^\circ\text{C}$ ）

HT7325-1 ($T_{OPT}=25^\circ\text{C}$)

符号	参数	测试条件	最小值	典型值	最大值	单位
V_{OUT}	输出电压	$V_{IN}=3.5\text{V}$, $I_{OUT}=40\text{mA}$	2.45	2.5	2.55	V
I_{OUT}	输出电流	$V_{IN}=3.5\text{V}$, $V_{OUT} \geq 2.25\text{V}$	180	--	--	mA
ΔV_{OUT}	负载调节	$V_{IN}=3.5\text{V}$, $1\text{mA} \leq I_{OUT} \leq 60\text{mA}$	--	45	90	mV
V_{DIF}	跌落电压	$I_{OUT}=40\text{mA}$	--	110	--	mV
I_{SS}	静态电流	$V_{IN}=3.5\text{V}$, 空载	--	2	3	μA
$\Delta V_{OUT} / (\Delta V_{IN} * V_{OUT})$	Line Regulation	$3.5\text{V} \leq V_{IN} \leq 12\text{V}$, $I_{OUT}=40\text{mA}$	--	0.2	0.3	%/V
V_{IN}	输入电压	--	--	--	18	V
$\Delta V_{OUT} / \Delta T_a$	温度系数	$V_{IN}=3.5\text{V}$, $I_{OUT}=40\text{mA}$, $0^\circ\text{C} \leq T_a \leq 85^\circ\text{C}$	--	± 0.7	--	mV/°C



HT7327-1 ($T_{OPT}=25^{\circ}C$)

符号	参数	测试条件	最小值	典型值	最大值	单位
V_{OUT}	输出电压	$V_{IN}=3.7V, I_{OUT}=40mA$	2.646	2.7	2.781	V
I_{OUT}	输出电流	$V_{IN}=3.7V, V_{OUT} \geq 2.43V$	200	--	--	mA
ΔV_{OUT}	负载调节	$V_{IN}=3.7V,$ $1mA \leq I_{OUT} \leq 60mA$	--	45	90	mV
V_{DIF}	跌落电压	$I_{OUT}=40mA$	--	100	--	mV
I_{SS}	静态电流	$V_{IN}=3.7V, 空载$	--	2	3	μA
$\Delta V_{OUT} / (\Delta V_{IN} * V_{OUT})$	Line Regulation	$3.7V \leq V_{IN} \leq 12V,$ $I_{OUT}=40mA$	--	0.2	0.3	%/V
V_{IN}	输入电压	--	--	--	18	V
$\Delta V_{OUT} / \Delta Ta$	温度系数	$V_{IN}=3.7V, I_{OUT}=40mA,$ $0^{\circ}C \leq Ta \leq 85^{\circ}C$	--	± 0.7	--	mV/ $^{\circ}C$

HT7330-1 ($T_{OPT}=25^{\circ}C$)

符号	参数	测试条件	最小值	典型值	最大值	单位
V_{OUT}	输出电压	$V_{IN}=4V, I_{OUT}=40mA$	2.94	3	3.06	V
I_{OUT}	输出电流	$V_{IN}=4V, V_{OUT} \geq 2.7V$	250	--	--	mA
ΔV_{OUT}	负载调节	$V_{IN}=4V, 1mA \leq I_{OUT} \leq 60mA$	--	45	90	mV
V_{DIF}	跌落电压	$I_{OUT}=40mA$	--	95	--	mV
I_{SS}	静态电流	$V_{IN}=4V, 空载$	--	2	3	μA
$\Delta V_{OUT} / (\Delta V_{IN} * V_{OUT})$	Line Regulation	$4V \leq V_{IN} \leq 12V, I_{OUT}=40mA$	--	0.2	0.3	%/V
V_{IN}	输入电压	--	--	--	18	V
$\Delta V_{OUT} / \Delta Ta$	温度系数	$V_{IN}=4V, I_{OUT}=40mA,$ $0^{\circ}C \leq Ta \leq 85^{\circ}C$	--	± 0.7	--	mV/ $^{\circ}C$

HT7333-1 ($T_{OPT}=25^{\circ}C$)

符号	参数	测试条件	最小值	典型值	最大值	单位
V_{OUT}	输出电压	$V_{IN}=4.3V, I_{OUT}=40mA$	3.366	3.3	3.366	V
I_{OUT}	输出电流	$V_{IN}=4.3V, V_{OUT} \geq 2.97V$	250	--	--	mA
ΔV_{OUT}	负载调节	$V_{IN}=4.3V,$ $1mA \leq I_{OUT} \leq 60mA$	--	45	90	mV
V_{DIF}	跌落电压	$I_{OUT}=40mA$	--	90	--	mV
I_{SS}	静态电流	$V_{IN}=4.3V, 空载$	--	2	3	μA
$\Delta V_{OUT} / (\Delta V_{IN} * V_{OUT})$	Line Regulation	$4.3V \leq V_{IN} \leq 12V,$ $I_{OUT}=40mA$	--	0.2	0.3	%/V
V_{IN}	输入电压	--	--	--	18	V
$\Delta V_{OUT} / \Delta Ta$	温度系数	$V_{IN}=4.3V, I_{OUT}=40mA,$ $0^{\circ}C \leq Ta \leq 85^{\circ}C$	--	± 0.7	--	mV/ $^{\circ}C$



HT7336-1 (T_{OPT}=25°C)

符号	参数	测试条件	最小值	典型值	最大值	单位
V _{OUT}	输出电压	V _{IN} =4.6V, I _{OUT} =40mA	3.528	3.6	3.672	V
I _{OUT}	输出电流	V _{IN} =4.6V, V _{OUT} ≥3.15V	250	--	—	mA
ΔV _{OUT}	负载调节	V _{IN} =4.6V, 1mA≤I _{OUT} ≤60mA	—	45	90	mV
V _{DIF}	跌落电压	I _{OUT} =40mA	—	80	—	mV
I _{SS}	静态电流	V _{IN} =4.6V, 空载	—	2	3	μA
ΔV _{OUT} / (ΔV _{IN} * V _{OUT})	Line Regulation	4.6V≤V _{IN} ≤12V, I _{OUT} =40mA	—	0.2	0.3	%/V
V _{IN}	输入电压	—	—	—	18	V
ΔV _{OUT} / ΔTa	温度系数	V _{IN} =4.6V, I _{OUT} =40mA, 0°C≤Ta≤85°C	—	±0.7	—	mV/°C

HT7344-1 (T_{OPT}=25°C)

符号	参数	测试条件	最小值	典型值	最大值	单位
V _{OUT}	输出电压	V _{IN} =5.4V, I _{OUT} =40mA	4.312	4.4	4.488	V
I _{OUT}	输出电流	V _{IN} =5.4V, V _{OUT} ≥3.85V	250	--	—	mA
ΔV _{OUT}	负载调节	V _{IN} =5.4V, 1mA≤I _{OUT} ≤60mA	—	45	90	mV
V _{DIF}	跌落电压	I _{OUT} =40mA	—	80	—	mV
I _{SS}	静态电流	V _{IN} =5.4V, 空载	—	2	3	μA
ΔV _{OUT} / (ΔV _{IN} * V _{OUT})	Line Regulation	5.4V≤V _{IN} ≤12V, I _{OUT} =40mA	—	0.2	0.3	%/V
V _{IN}	输入电压	—	—	—	18	V
ΔV _{OUT} / ΔTa	温度系数	V _{IN} =5.4V, I _{OUT} =40mA, 0°C≤Ta≤85°C	—	±0.7	—	mV/°C

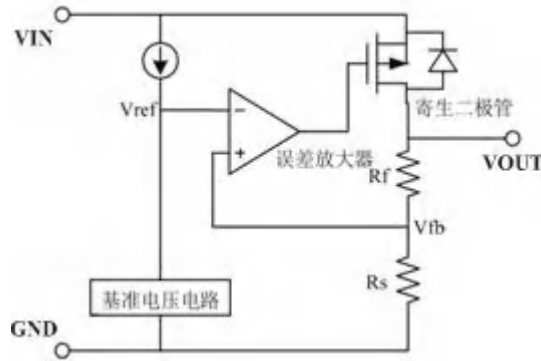
HT7350-1 (T_{OPT}=25°C)

符号	参数	测试条件	最小值	典型值	最大值	单位
V _{OUT}	输出电压	V _{IN} =6V, I _{OUT} =40mA	4.9	5	5.1	V
I _{OUT}	输出电流	V _{IN} =2.8V, V _{OUT} ≥4.5V	250	--	—	mA
ΔV _{OUT}	负载调节	V _{IN} =6V, 1mA≤I _{OUT} ≤60mA	—	45	90	mV
V _{DIF}	跌落电压	I _{OUT} =40mA	—	60	—	mV
I _{SS}	静态电流	V _{IN} =6V, 空载	—	2	3	μA
ΔV _{OUT} / (ΔV _{IN} * V _{OUT})	Line Regulation	6V≤V _{IN} ≤12V, I _{OUT} =40mA	—	0.2	0.3	%/V
V _{IN}	输入电压	—	—	—	18	V
ΔV _{OUT} / ΔTa	温度系数	V _{IN} =6V, I _{OUT} =40mA, 0°C≤Ta≤85°C	—	±0.7	—	mV/°C



功能描述

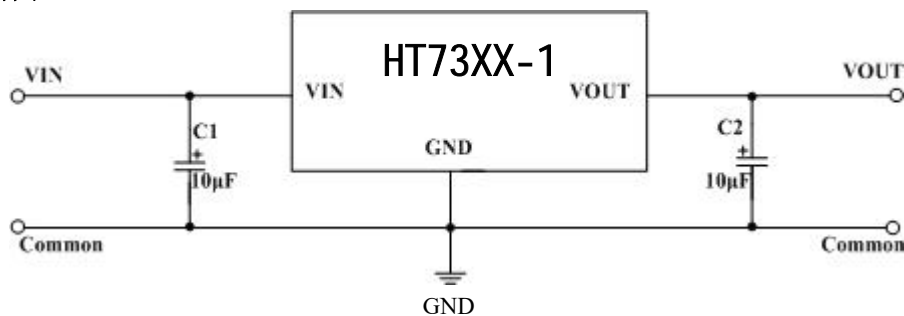
误差放大器根据反馈电阻 R_s 及 R_f 所构成的分压电阻的输入电压 V_{fb} 同基准电压 (V_{ref}) 相比较。通过此误差放大器向输出晶体管提供必要的门极电压，而使输出电压不受输入电压或温度变化的影响而保持一定。



- 1、应用时尽量将电容接到 VIN 和 VOUT 脚位附近。
- 2、电路内部使用了相位补偿电路和利用输出电容的 ESR 来补偿。所以输出到地一定要接大于 2.2 μ F 的电容，推荐使用钽电容。
- 3、注意输入输出电压、负载电流的使用条件，避免 IC 内部的功耗超出封装允许的最大功耗值。

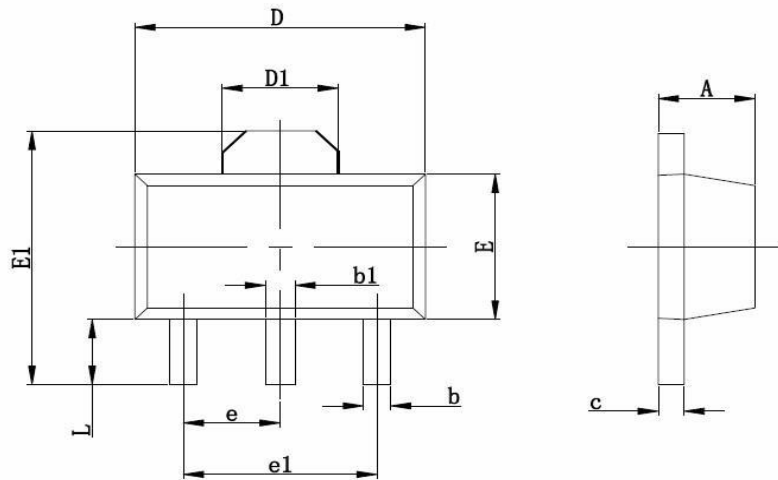
典型应用线路图

1、基本应用图





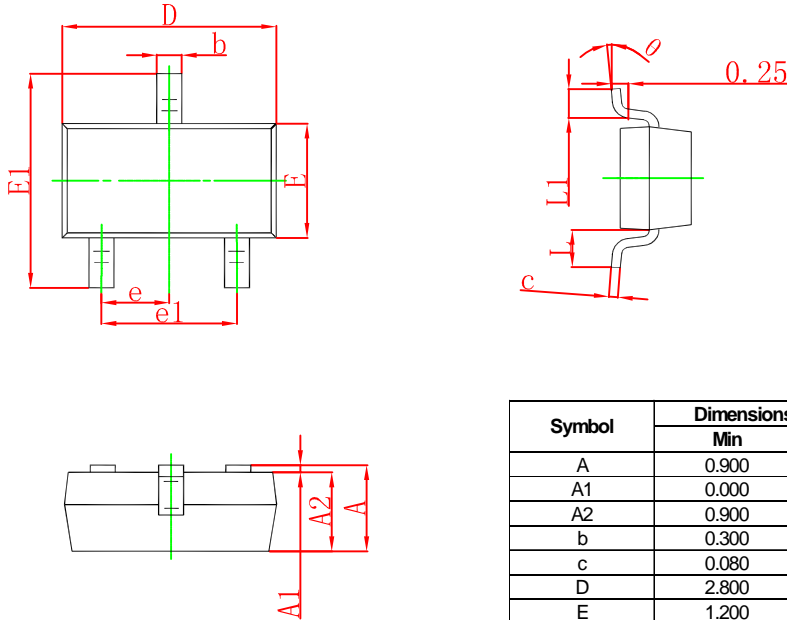
SOT-89 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.350	0.520	0.013	0.197
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF		0.061 REF	
E	2.350	2.550	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP		0.060TYP	
e1	3.000 TYP		0.118TYP	
L	0.900	1.100	0.035	0.047

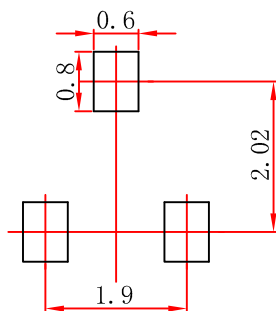


SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Suggested Pad Layout



Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.



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