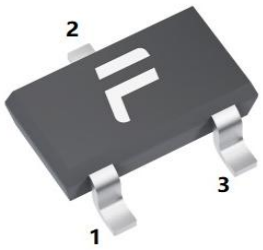
HT75xxS

SOT-23 LDO High Input Voltage Three Terminal Regulator
低落差高电压三端稳压 IC

■Features 特点

1.GND 2.Vi 3.Vo
Low Dropout Voltage 低落差电压：Type 典型值 0.1V
Low Quiescent Current 低静态电流：< 3μA
High Input Voltage 高输入电压：Up to 高达 24V
High Precision Output Voltage 高精度输出电压：±2%
具过温保护、过流和短路保护功能



■Application 应用

Battery Power Supply Equipment 电池供电设备
Communication Equipment 通信设备
Audio/Video Equipment 音视频设备
Monitor Equipment 监控设备

■Absolute Maximum Ratings 最大额定值

(T_A=25℃ unless otherwise noted 如无特殊说明，温度为 25℃)

Characteristic 特性参数	Symbol 符号	Rat 额定值	Unit 单位
Input Voltage 输入电压	V_i	30	V
Operating Current 工作电流	I_O	100	mA
Power dissipation 耗散功率	P_D	400	mW
Thermal Resistance Junction-Ambient 热阻	$R_{\Theta JA}$	306	℃/W
Solder Temperature/Time 焊接温度/时间	Td	260/10	℃/S
Operating Ambient Temperature 工作温度	T_A	-25~+70	℃
Junction and Storage Temperature 结温和储藏温度	T_J,T_{stg}	-50to+125℃	

■Electrical Characteristics 电特性

HT7530S (T_{opt}=25℃)

Characteristic 特性参数	Symbol 符号	Test Condition 测试条件	Min 最小值	Type 典型值	Max 最大值	Unit 单位
Output Voltage 输出电压	V_O	I_O=10mA V_I=5V	2.91	3	3.09	V
Output Current 输出电流	I_O	V_I=5.5V	60	100		mA
Dropout Voltage 落差电压	V_D	I_O=1mA		100		mV
Quiescent Current 静态电流	I_q	I_O=0		2	3	μA
Line Regulation 线性调整	$\Delta V_O/\Delta V_i*V_O$	I_O=1mA 4≤V_I≤24		0.2		%/V
Load Regulation 负载调整	ΔV_O	1mA≤I_O≤50mA V_I=5V		100	150	mV
Temperature Finger 温度系数	$\Delta V_O/\Delta Ta$	I_O=10mA,V_I=5V -40℃≤Ta≤85℃		±0.45		mV/℃

HT7533S (T_{opt}=25℃)

Characteristic 特性参数	Symbol 符号	Test Condition 测试条件	Min 最小值	Type 典型值	Max 最大值	Unit 单位
Output Voltage 输出电压	V_O	I_O=10mA V_I=5.3V	3.201	3.3	3.399	V
Output Current 输出电流	I_O	V_I=5.3V	60	100		mA
Dropout Voltage 落差电压	V_D	I_O=1mA		100		mV
Quiescent Current 静态电流	I_q	I_O=0		2	3	μA
Line Regulation 线性调整	$\Delta V_O/\Delta V_i*V_O$	I_O=1mA 4.3≤V_I≤24		0.2		%/V
Load Regulation 负载调整	ΔV_O	1mA≤I_O≤50mA V_I=5.3V		100	150	mV
Temperature Finger 温度系数	$\Delta V_O/\Delta Ta$	I_O=10mA,V_I=5.3V -40℃≤Ta≤85℃		±0.5		mV/℃

■Electrical Characteristics 电特性

HT7536S (T_{opt}=25℃)

Characteristic 特性参数	Symbol 符号	Test Condition 测试条件	Min 最小值	Type 典型值	Max 最大值	Unit 单位
Output Voltage 输出电压	V_O	I_O=10mA V_I=5.6V	3.492	3.6	3.708	V
Output Current 输出电流	I_O	V_I=5.6V	60	100		mA
Dropout Voltage 落差电压	V_D	I_O=1mA		100		mV
Quiescent Current 静态电流	I_q	I_O=0		2	3	μA
Line Regulation 线性调整	$\Delta V_O/\Delta V_i*V_O$	I_O=1mA 4.6≤V_I≤24		0.2		%/V
Load Regulation 负载调整	ΔV_O	1mA≤I_O≤50mA V_I=5.6V		100	150	mV
Temperature Finger 温度系数	$\Delta V_O/\Delta Ta$	I_O=10mA,V_I=5.6V -40℃≤Ta≤85℃		±0.6		mV/℃

HT7540S (T_{opt}=25℃)

Characteristic 特性参数	Symbol 符号	Test Condition 测试条件	Min 最小值	Type 典型值	Max 最大值	Unit 单位
Output Voltage 输出电压	V_O	I_O=10mA V_I=6V	3.88	4	4.12	V
Output Current 输出电流	I_O	V_I=6V	60	100		mA
Dropout Voltage 落差电压	V_D	I_O=1mA		100		mV
Quiescent Current 静态电流	I_q	I_O=0		2	3	μA
Line Regulation 线性调整	$\Delta V_O/\Delta V_i*V_O$	I_O=1mA 5≤V_I≤24		0.2		%/V
Load Regulation 负载调整	ΔV_O	1mA≤I_O≤50mA V_I=6V		100	150	mV
Temperature Finger 温度系数	$\Delta V_O/\Delta Ta$	I_O=10mA,V_I=6V -40℃≤Ta≤85℃		±0.7		mV/℃

■Electrical Characteristics 电特性

HT7544S (T_{opt}=25℃)

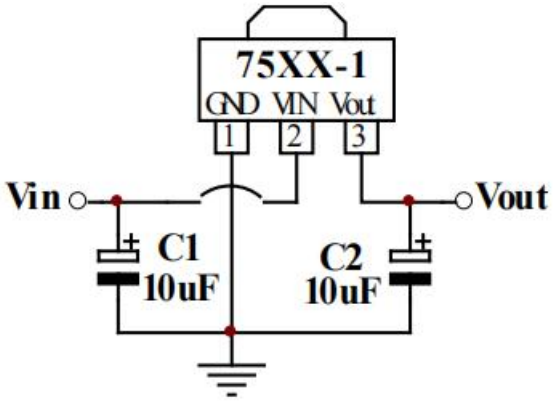
Characteristic 特性参数	Symbol 符号	Test Condition 测试条件	Min 最小值	Type 典型值	Max 最大值	Unit 单位
Output Voltage 输出电压	V_O	I_O=10mA V_I=6.4V	4.268	4.4	4.532	V
Output Current 输出电流	I_O	V_I=6.4V	60	100		mA
Dropout Voltage 落差电压	V_D	I_O=1mA		100		mV
Quiescent Current 静态电流	I_q	I_O=0		2	3	μA
Line Regulation 线性调整	$\Delta V_O/\Delta V_i*V_O$	I_O=1mA 5.4≤V_I≤24		0.2		%/V
Load Regulation 负载调整	ΔV_O	1mA≤I_O≤50mA V_I=6.4V		100	150	mV
Temperature Finger 温度系数	$\Delta V_O/\Delta Ta$	I_O=10mA,V_I=6.4V -40℃≤Ta≤85℃		±0.7		mV/℃

HT7550S (T_{opt}=25℃)

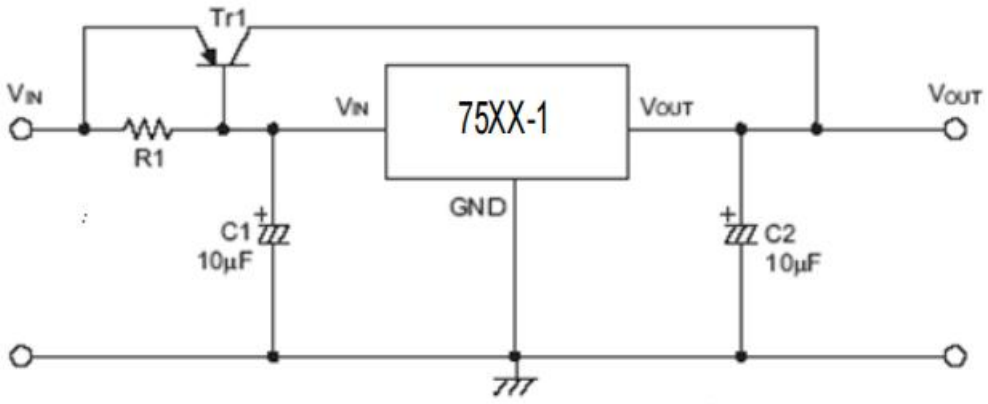
Characteristic 特性参数	Symbol 符号	Test Condition 测试条件	Min 最小值	Type 典型值	Max 最大值	Unit 单位
Output Voltage 输出电压	V_O	I_O=10mA V_I=7V	4.85	5	5.15	V
Output Current 输出电流	I_O	V_I=7V	60	100		mA
Dropout Voltage 落差电压	V_D	I_O=1mA		100		mV
Quiescent Current 静态电流	I_q	I_O=0		2	3	μA
Line Regulation 线性调整	$\Delta V_O/\Delta V_i*V_O$	I_O=1mA 6≤V_I≤24		0.2		%/V
Load Regulation 负载调整	ΔV_O	1mA≤I_O≤70mA V_I=7V		100	150	mV
Temperature Finger 温度系数	$\Delta V_O/\Delta Ta$	I_O=10mA,V_I=7V -40℃≤Ta≤85℃		±0.75		mV/℃

■**Application Circuit 应用电路**

Basic Circuit 基本电路

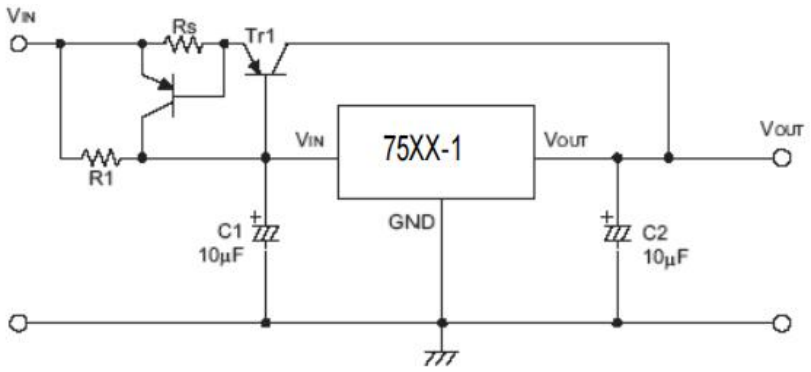


High Output Current Regulator Circuit 高输出电流稳压电路

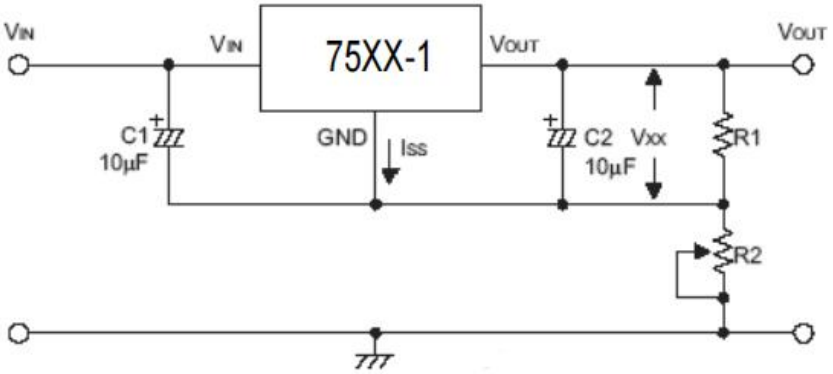


■**Application Circuit 应用电路**

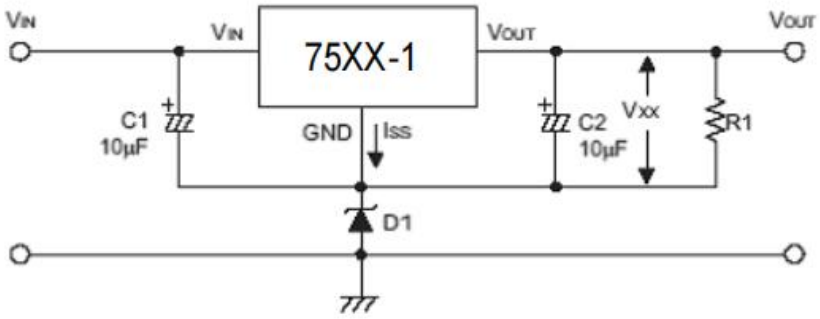
Shortage Protection Circuit 短路保护电路



High Output Voltage Circuit 高输出电压电路 V_{OUT}=Vxx(1+R2/R1)+Iq*R2

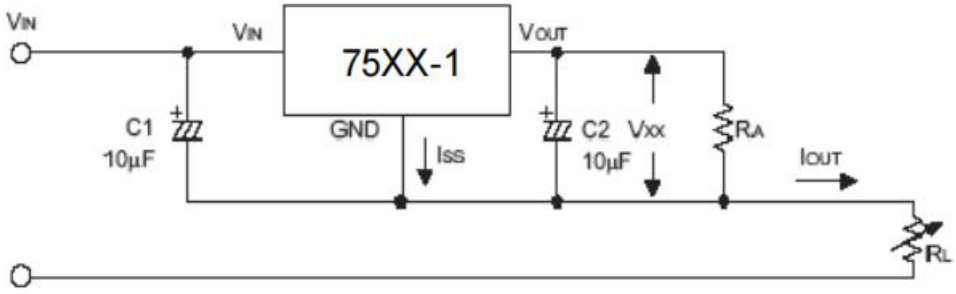


High Output Voltage Circuit 高输出电压电路 V_{OUT}=Vxx+VD1

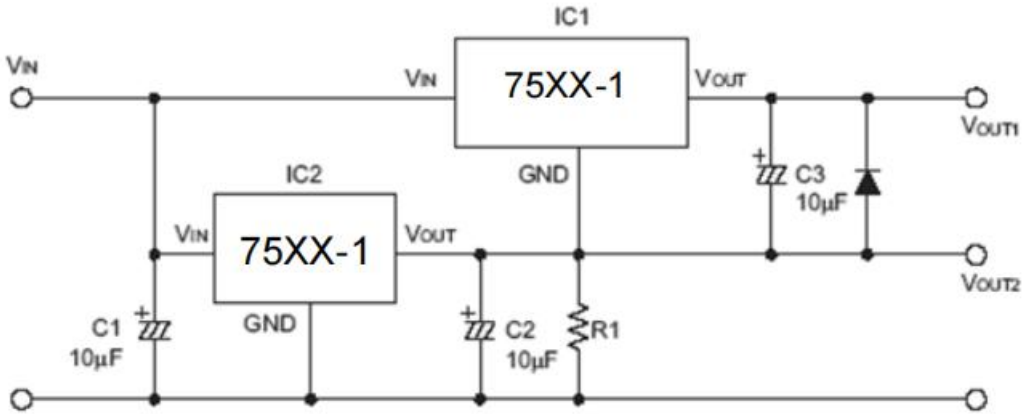


■Application Circuit 应用电路

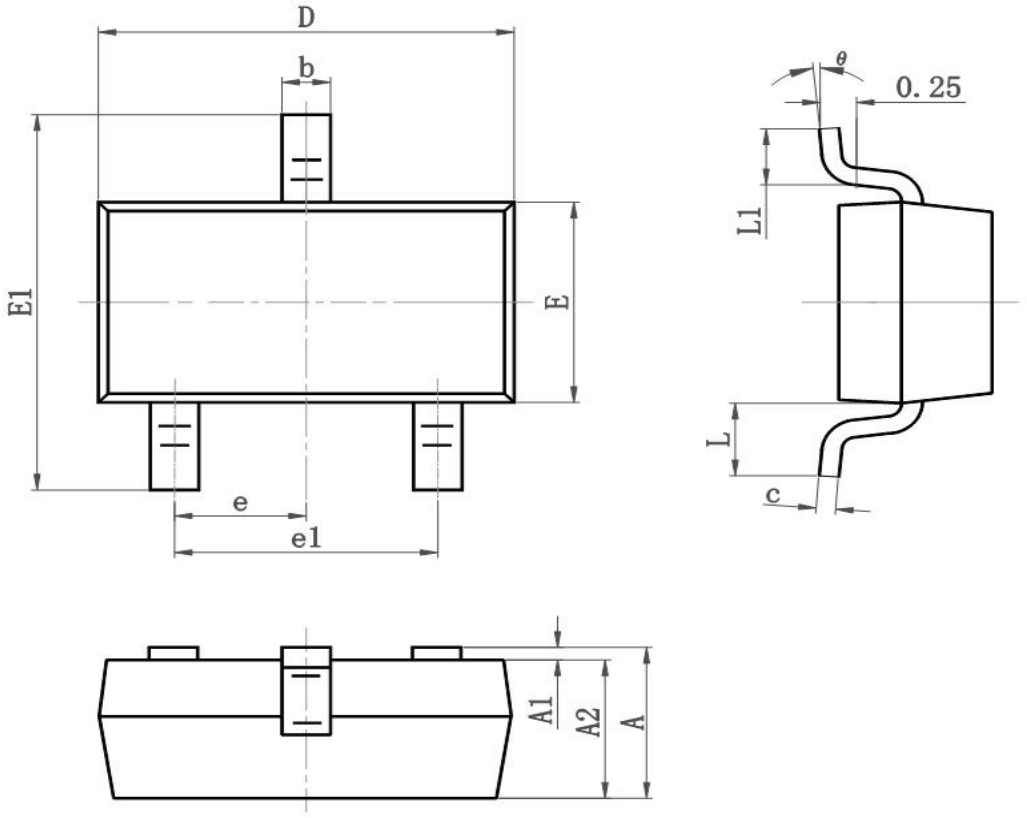
Current Adjustment Circuit 电流调节电路 $I_{OUT}=Vxx/Rx+Iq$



Dual Output Circuit 双端输出电路



■**SOT-23 Dimension 外形封装尺寸**



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	0.050	0.055
E1	2.250	2.550	0.089	0.100
e	0.900	1.00	0.035	0.039
e1	1.800	2.000	0.071	0.079
L	0.500	0.600	0.020	0.024
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°