

SOT-23-3L SOT-89 LDO High Input Voltage Three Terminal Regulator
低落差高电压三端稳压 IC

■ **Features 特点**

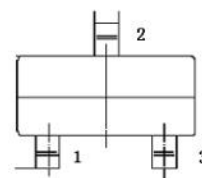
1.GND 2.Vi 3.Vo

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 30V

High Precision Output Voltage 高精度输出电压: ±2%



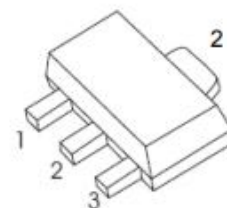
■ **Application 应用**

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**

($T_A=25^{\circ}\text{C}$ unless otherwise noted 如无特殊说明, 温度为 25°C)

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 (SOT-23-3L SOT-89)	200 300	mW
Thermal Resistance Junction-Ambient 热阻	$R_{\theta JA}$ (SOT-23-3L SOT-89)	625 418	$^{\circ}\text{C}/\text{W}$
Solder Temperature/Time 焊接温度/时间	T_d	260/10	$^{\circ}\text{C}/\text{S}$
Operating Ambient Temperature 工作温度	T_A	-25~+85	$^{\circ}\text{C}$
Junction and Storage Temperature 结温和储藏温度	T_J, T_{stg}	-50to+125 $^{\circ}\text{C}$	

■ Electrical Characteristics 电特性

FS7130 (T_{opt}=25°C)

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	2.94	3	3.06	V
Output Current 输出电流	I _O	V _I =5V	70	100		mA
Dropout Voltage 落差电压	V _D	I _O =1mA ΔV _O =2%		30	100	mV
Quiescent Current 静态电流	I _q	V _I =5V I _O =0		1.5	3	μA
Line Regulation 线性调整	ΔV _O /ΔV _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		25	60	mV
Temperature Finger 温度系数	ΔV _O /ΔT _a *V _O	I _O =10mA V _I =5V 0°C≤T _a ≤85°C		100		ppm/°C

FS7133 (T_{opt}=25°C)

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 =5.5V	3.234	3.3	3.366	V
Output Current 输出电流	I _O	V _I =5.5V	70	100		mA
Dropout Voltage 落差电压	V _D	I _O =1mA ΔV _O =2%		25	55	mV
Quiescent Current 静态电流	I _q	V _I =5.5V I _O =0		1.5	3	μA
Line Regulation 线性调整	ΔV _O /ΔV _I *V _O	I _O =1mA 4.5≤V _I ≤24		0.2		%/V
Load Regulation 负载调整	ΔV _O	1mA≤I _O ≤50mA V _I =5.5V		25	60	mV
Temperature Finger 温度系数	ΔV _O /ΔT _a *V _O	I _O =10mA V _I =5.5V 0°C≤T _a ≤85°C		100		ppm/°C

■ Electrical Characteristics 电特性

FS7136 ($T_{opt}=25^{\circ}C$)

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	$I_O=10mA$ $V_I=5.6V$	3.528	3.6	3.672	V
Output Current 输出电流	I_O	$V_I=5.6V$	70	100		mA
Dropout Voltage 落差电压	V_D	$I_O=1mA$ $\Delta V_O=2\%$		25	55	mV
Quiescent Current 静态电流	I_q	$V_I=5.6V$ $I_O=0$		1.5	3	μA
Line Regulation 线性调整	$\Delta V_O/\Delta V_I * V_O$	$I_O=1mA$ $4.6 \leq V_I \leq 24$		0.2		%/V
Load Regulation 负载调整	ΔV_O	$1mA \leq I_O \leq 50mA$ $V_I=5.6V$		25	60	mV
Temperature Finger 温度系数	$\Delta V_O/\Delta T_a * V_O$	$I_O=10mA$ $V_I=5.6V$ $0^{\circ}C \leq T_a \leq 85^{\circ}C$		100		ppm/ $^{\circ}C$

FS7140 ($T_{opt}=25^{\circ}C$)

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	$I_O=10mA$ $V_I=6V$	3.92	4	4.08	V
Output Current 输出电流	I_O	$V_I=6V$	70	100		mA
Dropout Voltage 落差电压	V_D	$I_O=1mA$ $\Delta V_O=2\%$		25	55	mV
Quiescent Current 静态电流	I_q	$V_I=6V$ $I_O=0$		1.5	3	μA
Line Regulation 线性调整	$\Delta V_O/\Delta V_I * V_O$	$I_O=1mA$ $5 \leq V_I \leq 24$		0.2		%/V
Load Regulation 负载调整	ΔV_O	$1mA \leq I_O \leq 50mA$ $V_I=6V$		25	60	mV
Temperature Finger 温度系数	$\Delta V_O/\Delta T_a * V_O$	$I_O=10mA$ $V_I=6V$ $0^{\circ}C \leq T_a \leq 85^{\circ}C$		100		ppm/ $^{\circ}C$

■ Electrical Characteristics 电特性

FS7144 (T_{opt}=25°C)

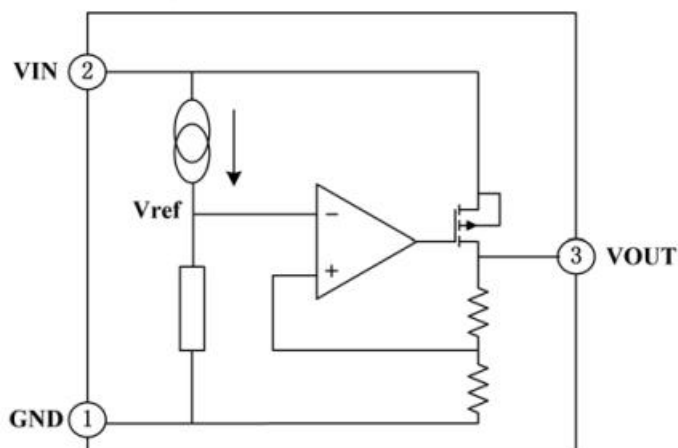
Characteristic 特性参数	Symbol 符号	Test Condition 测试条件	Min 最小值	Type 典型值	Max 最大值	Unit 单位
Output Voltage 输出电压	V _O	I _O =10mA V _I =6.4V	4.312	4.4	4.488	V
Output Current 输出电流	I _O	V _I =6.4V	70	100		mA
Dropout Voltage 落差电压	V _D	I _O =1mA ΔV _O =2%		25	55	mV
Quiescent Current 静态电流	I _q	V _I =6.4V I _O =0		1.5	3	μA
Line Regulation 线性调整	ΔV _O /ΔV _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		25	60	mV
Temperature Finger 温度系数	ΔV _O /ΔT _a *V _O	I _O =10mA V _I =6.4V 0°C≤T _a ≤85°C		100		ppm/°C

FS7150 (T_{opt}=25°C)

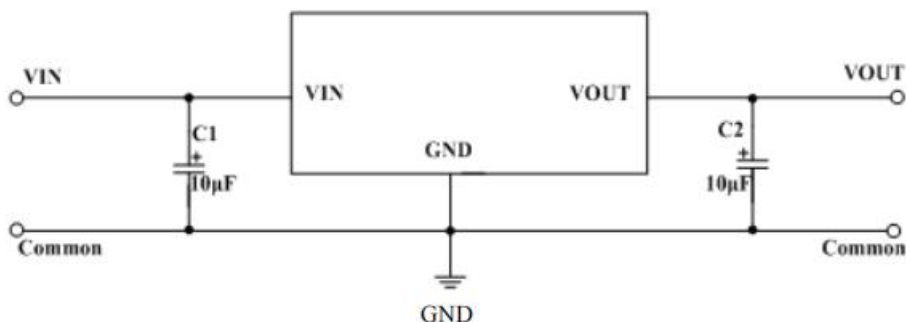
Characteristic 特性参数	Symbol 符号	Test Condition 测试条件	Min 最小值	Type 典型值	Max 最大值	Unit 单位
Output Voltage 输出电压	V _O	I _O =10mA V _I =7V	4.9	5	5.1	V
Output Current 输出电流	I _O	V _I =7V	100	150		mA
Dropout Voltage 落差电压	V _D	I _O =1mA ΔV _O =2%		25	55	mV
Quiescent Current 静态电流	I _q	V _I =7V I _O =0		1.5	3	μA
Line Regulation 线性调整	ΔV _O /ΔV _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		25	60	mV
Temperature Finger 温度系数	ΔV _O /ΔT _a *V _O	I _O =10mA V _I =7V 0°C≤T _a ≤85°C		100		ppm/°C

■ Application Circuit 应用电路

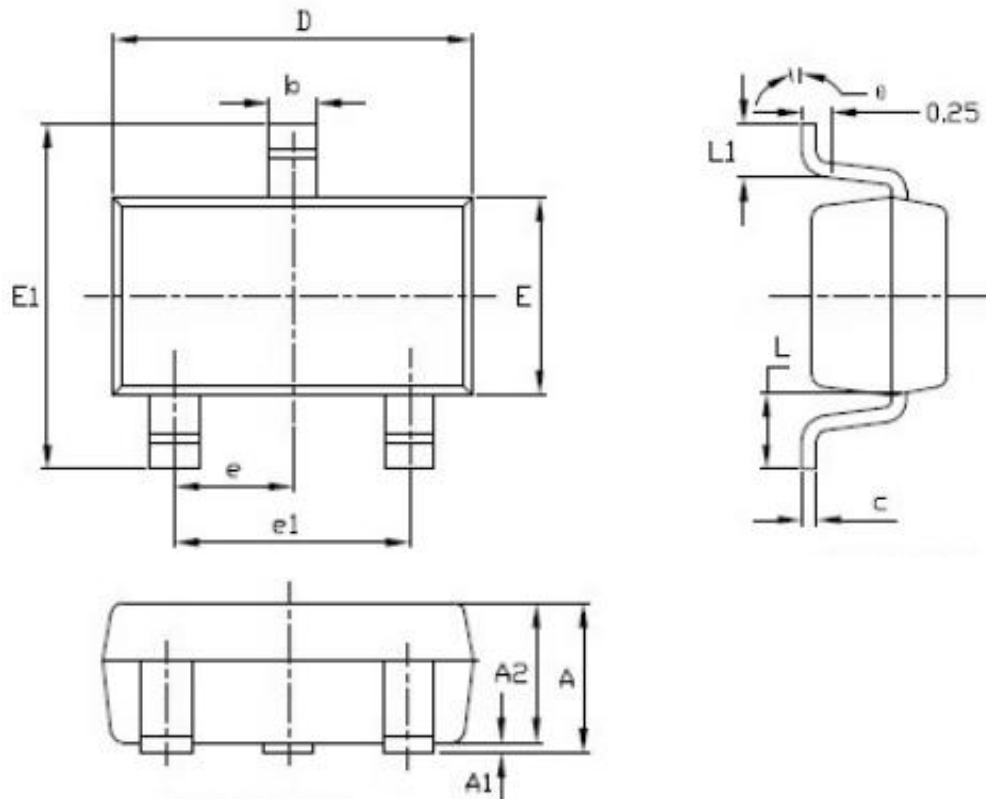
Block Circuit 电路框图



Basic Circuit 基本电路

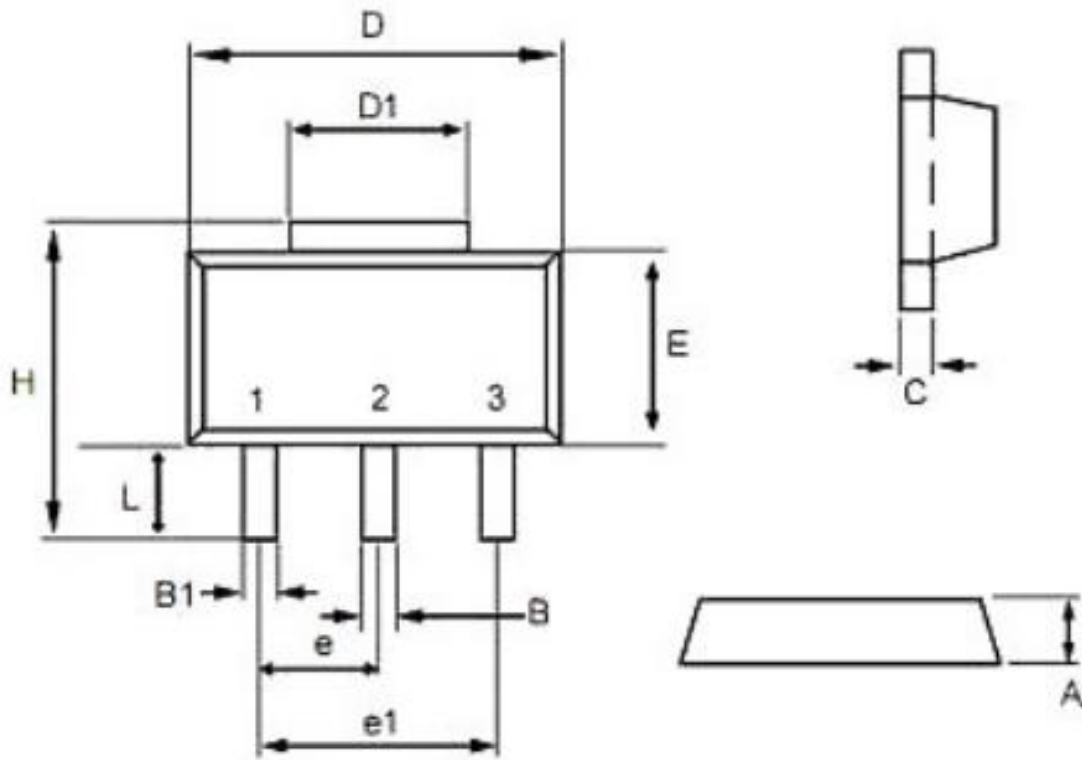


■SOT-23-3L Dimension 外形封装尺寸



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.900	1.00	0.035	0.039
e1	1.800	2.000	0.071	0.079
L	0.450	0.650	0.018	0.026
L1	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

■SOT-89 Dimension 外形封装尺寸



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.40	1.60	0.055	0.063
B	0.40	0.56	0.016	0.022
B1	0.35	0.48	0.014	0.019
C	0.35	0.44	0.014	0.017
D	4.40	4.60	0.173	0.181
D1	1.35	1.83	0.053	0.072
e	1.45	1.55	0.057	0.061
e1	2.95	3.05	0.116	0.120
E	2.29	2.60	0.090	0.102
H	3.75	4.25	0.148	0.167
L	0.80	1.20	0.031	0.047