

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

■ **Features 特点**

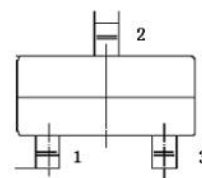
1.GND 2.Vi 3.Vo

**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%**



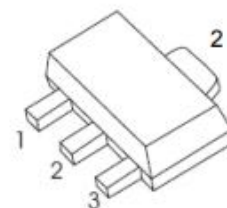
■ **Application 应用**

**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**

(TA=25°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 <sub>i</sub>	30	V
Operating Current 工作电流	I <sub>o</sub>	100	mA
Power dissipation 耗散功率	P <sub>D</sub> (SOT-23-3L SOT-89-3L)	200 300	mW
Thermal Resistance Junction-Ambient 热阻	R <sub>θJA</sub> (SOT-23-3L SOT-89-3L)	625 418	°C/W
Solder Temperature/Time 焊接温度/时间	T <sub>d</sub>	260/10	°C/S
Operating Ambient Temperature 工作温度	T <sub>A</sub>	-25~+85	°C
Junction and Storage Temperature 结温和储藏温度	T <sub>J</sub> , T <sub>stg</sub>	-50to+125°C	

■ Electrical Characteristics 电特性

FS(S)7130(M) (T<sub>opt</sub>=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 <sub>O</sub>	I <sub>O</sub> =10mA V <sub>I</sub> =5V	2.94	3	3.06	V
Output Current 输出电流	I <sub>O</sub>	V <sub>I</sub> =5V	70	100		mA
Dropout Voltage 落差电压	V <sub>D</sub>	I <sub>O</sub> =1mA ΔV <sub>O</sub> =2%		30	100	mV
Quiescent Current 静态电流	I <sub>q</sub>	V <sub>I</sub> =5V I <sub>O</sub> =0		1.5	3	μA
Line Regulation 线性调整	ΔV <sub>O</sub> /ΔV <sub>I</sub> *V <sub>O</sub>	I <sub>O</sub> =1mA 4≤V <sub>I</sub> ≤24			0.2	%/V
Load Regulation 负载调整	ΔV <sub>O</sub>	1mA≤I <sub>O</sub> ≤50mA V <sub>I</sub> =5V		25	60	mV
Temperature Finger 温度系数	ΔV <sub>O</sub> /ΔT <sub>a</sub> *V <sub>O</sub>	I <sub>O</sub> =10mA V <sub>I</sub> =5V 0°C≤T <sub>a</sub> ≤85°C		100		ppm/°C

FS(S)7133(M) (T<sub>opt</sub>=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 <sub>O</sub>	I <sub>O</sub> =10mA V <sub>I</sub> =5.5V	3.234	3.3	3.366	V
Output Current 输出电流	I <sub>O</sub>	V <sub>I</sub> =5.5V	70	100		mA
Dropout Voltage 落差电压	V <sub>D</sub>	I <sub>O</sub> =1mA ΔV <sub>O</sub> =2%		25	55	mV
Quiescent Current 静态电流	I <sub>q</sub>	V <sub>I</sub> =5.5V I <sub>O</sub> =0		1.5	3	μA
Line Regulation 线性调整	ΔV <sub>O</sub> /ΔV <sub>I</sub> *V <sub>O</sub>	I <sub>O</sub> =1mA 4.5≤V <sub>I</sub> ≤24		0.2		%/V
Load Regulation 负载调整	ΔV <sub>O</sub>	1mA≤I <sub>O</sub> ≤50mA V <sub>I</sub> =5.5V		25	60	mV
Temperature Finger 温度系数	ΔV <sub>O</sub> /ΔT <sub>a</sub> *V <sub>O</sub>	I <sub>O</sub> =10mA V <sub>I</sub> =5.5V 0°C≤T <sub>a</sub> ≤85°C		100		ppm/°C

■ Electrical Characteristics 电特性

FS(S)7136(M) (T<sub>opt</sub>=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 <sub>O</sub>	I <sub>O</sub> =10mA V <sub>I</sub> =5.6V	3.528	3.6	3.672	V
Output Current 输出电流	I <sub>O</sub>	V <sub>I</sub> =5.6V	70	100		mA
Dropout Voltage 落差电压	V <sub>D</sub>	I <sub>O</sub> =1mA ΔV <sub>O</sub> =2%		25	55	mV
Quiescent Current 静态电流	I <sub>q</sub>	V <sub>I</sub> =5.6V I <sub>O</sub> =0		1.5	3	μA
Line Regulation 线性调整	ΔV <sub>O</sub> /ΔV <sub>I</sub> *V <sub>O</sub>	I <sub>O</sub> =1mA 4.6≤V <sub>I</sub> ≤24		0.2		%/V
Load Regulation 负载调整	ΔV <sub>O</sub>	1mA≤I <sub>O</sub> ≤50mA V <sub>I</sub> =5.6V		25	60	mV
Temperature Finger 温度系数	ΔV <sub>O</sub> /ΔT <sub>a</sub> *V <sub>O</sub>	I <sub>O</sub> =10mA V <sub>I</sub> =5.6V 0°C≤T <sub>a</sub> ≤85°C		100		ppm/°C

FS(S)7140(M) (T<sub>opt</sub>=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 <sub>O</sub>	I <sub>O</sub> =10mA V <sub>I</sub> =6V	3.92	4	4.08	V
Output Current 输出电流	I <sub>O</sub>	V <sub>I</sub> =6V	70	100		mA
Dropout Voltage 落差电压	V <sub>D</sub>	I <sub>O</sub> =1mA ΔV <sub>O</sub> =2%		25	55	mV
Quiescent Current 静态电流	I <sub>q</sub>	V <sub>I</sub> =6V I <sub>O</sub> =0		1.5	3	μA
Line Regulation 线性调整	ΔV <sub>O</sub> /ΔV <sub>I</sub> *V <sub>O</sub>	I <sub>O</sub> =1mA 5≤V <sub>I</sub> ≤24		0.2		%/V
Load Regulation 负载调整	ΔV <sub>O</sub>	1mA≤I <sub>O</sub> ≤50mA V <sub>I</sub> =6V		25	60	mV
Temperature Finger 温度系数	ΔV <sub>O</sub> /ΔT <sub>a</sub> *V <sub>O</sub>	I <sub>O</sub> =10mA V <sub>I</sub> =6V 0°C≤T <sub>a</sub> ≤85°C		100		ppm/°C

■ Electrical Characteristics 电特性

FS(S)7144(M) (T<sub>opt</sub>=25°C)

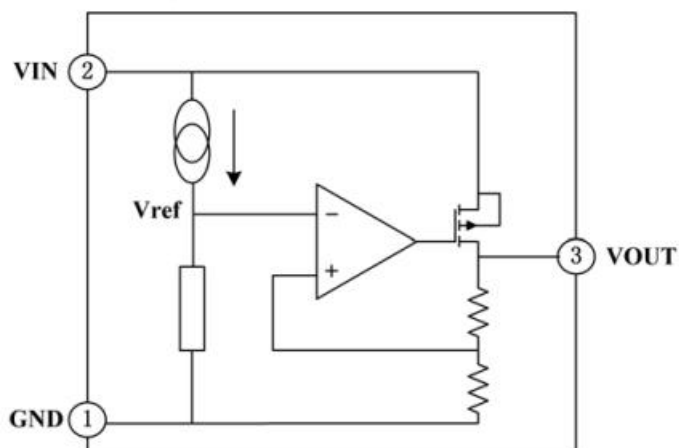
Characteristic 特性参数	Symbol 符号	Test Condition 测试条件	Min 最小值	Type 典型值	Max 最大值	Unit 单位
Output Voltage 输出电压	V <sub>O</sub>	I <sub>O</sub> =10mA V <sub>I</sub> =6.4V	4.312	4.4	4.488	V
Output Current 输出电流	I <sub>O</sub>	V <sub>I</sub> =6.4V	70	100		mA
Dropout Voltage 落差电压	V <sub>D</sub>	I <sub>O</sub> =1mA ΔV <sub>O</sub> =2%		25	55	mV
Quiescent Current 静态电流	I <sub>q</sub>	V <sub>I</sub> =6.4V I <sub>O</sub> =0		1.5	3	μA
Line Regulation 线性调整	ΔV <sub>O</sub> /ΔV <sub>I</sub> *V <sub>O</sub>	I <sub>O</sub> =1mA 5.4≤V <sub>I</sub> ≤24		0.2		%/V
Load Regulation 负载调整	ΔV <sub>O</sub>	1mA≤I <sub>O</sub> ≤50mA V <sub>I</sub> =6.4V		25	60	mV
Temperature Finger 温度系数	ΔV <sub>O</sub> /ΔT <sub>a</sub> *V <sub>O</sub>	I <sub>O</sub> =10mA V <sub>I</sub> =6.4V 0°C≤T <sub>a</sub> ≤85°C		100		ppm/°C

FS(S)7150(M) (T<sub>opt</sub>=25°C)

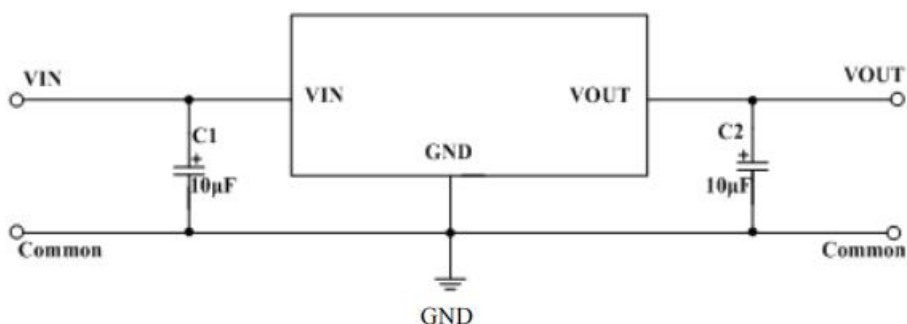
Characteristic 特性参数	Symbol 符号	Test Condition 测试条件	Min 最小值	Type 典型值	Max 最大值	Unit 单位
Output Voltage 输出电压	V <sub>O</sub>	I <sub>O</sub> =10mA V <sub>I</sub> =7V	4.9	5	5.1	V
Output Current 输出电流	I <sub>O</sub>	V <sub>I</sub> =7V	100	150		mA
Dropout Voltage 落差电压	V <sub>D</sub>	I <sub>O</sub> =1mA ΔV <sub>O</sub> =2%		25	55	mV
Quiescent Current 静态电流	I <sub>q</sub>	V <sub>I</sub> =7V I <sub>O</sub> =0		1.5	3	μA
Line Regulation 线性调整	ΔV <sub>O</sub> /ΔV <sub>I</sub> *V <sub>O</sub>	I <sub>O</sub> =1mA 6≤V <sub>I</sub> ≤24		0.2		%/V
Load Regulation 负载调整	ΔV <sub>O</sub>	1mA≤I <sub>O</sub> ≤70mA V <sub>I</sub> =7V		25	60	mV
Temperature Finger 温度系数	ΔV <sub>O</sub> /ΔT <sub>a</sub> *V <sub>O</sub>	I <sub>O</sub> =10mA V <sub>I</sub> =7V 0°C≤T <sub>a</sub> ≤85°C		100		ppm/°C

■ Application Circuit 应用电路

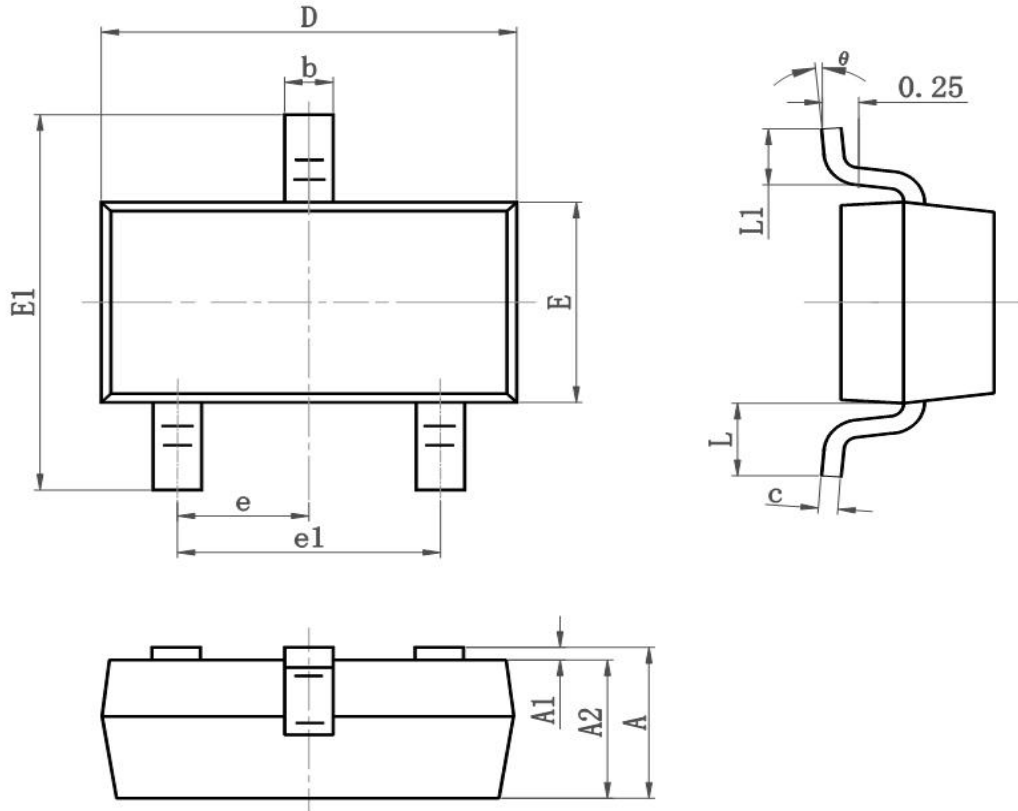
Block Circuit 电路框图



Basic Circuit 基本电路

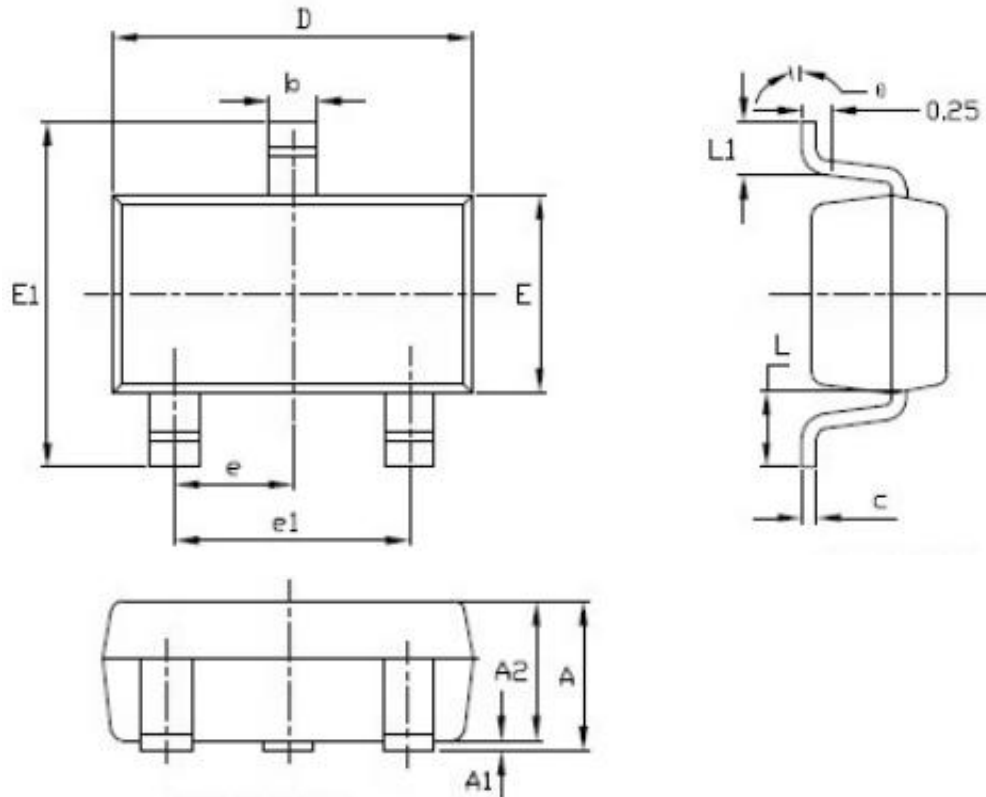


■SOT-23 Dimension 外形封装尺寸



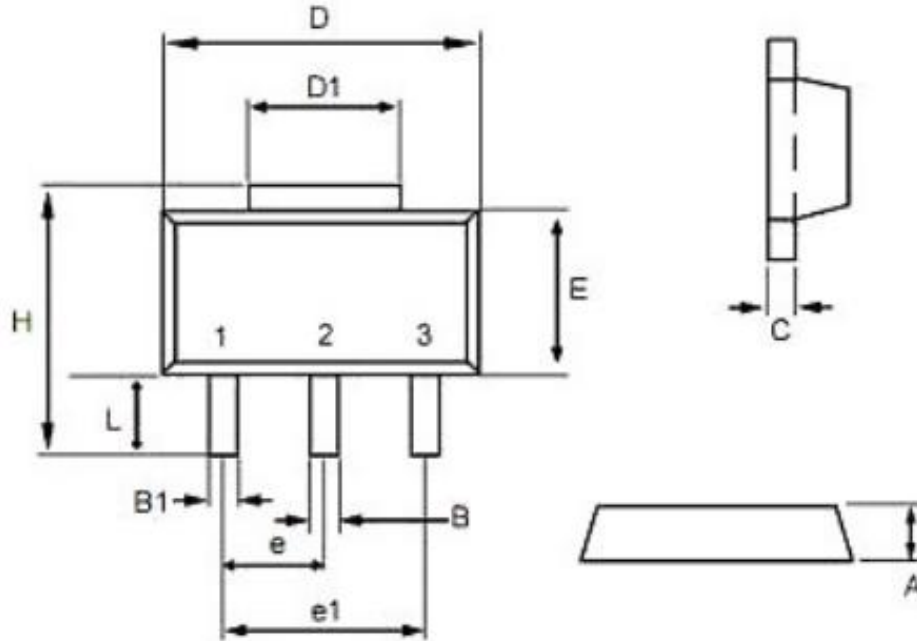
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.050	0.055
E1	2.250	2.550	0.089	0.100
e	0.900	1.00	0.035	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
$\theta$	0°	8°	0°	8°

■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-89-3L 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