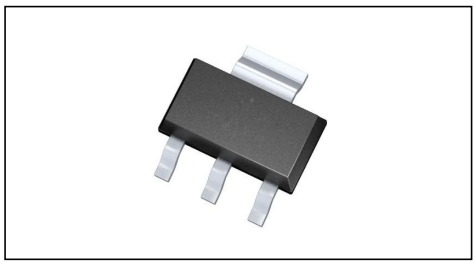
AT1117SR-XX

Low Dropout Voltage Regulator

SOT-223



Features

- Maximum output current is 1.0A
- Range of operation input voltage:Max 15V
- Line regulation:0.2%
- Load regulation:0.4%

Applications

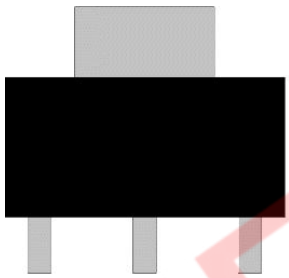
- Power Management for Computer Mother
- ADSL Modem
- LCD Monitor and LCD TV
- DVD Decode Board
- Post Regulators For Switching Supplies

General Description

AT1117SR-XX is a low dropout three-terminal regulators with a dropout of 1.3V at 1.0A load current.Its features a very low standby current 4mA compared to 8mA of competitor.

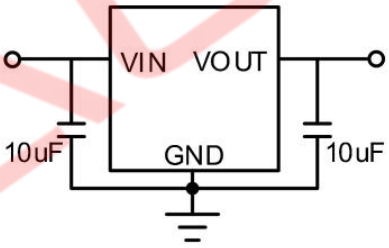
It offers thermal shut down function, to assure the stability of chip and power system.And it uses trimming technique to guarantee output voltage accuracy within ±2%。

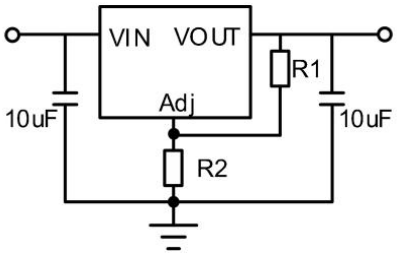
Pin Assignment



GND/ADJ VOUT VIN

Application Circuits





Absolute Maximum Ratings(Ta=25°C)

Symbol	Parameter	Rating	Units
V_{IN}	Maximum Supply Voltage	18	V
T_{OPR}	Operating Temperature	-40~125	℃
T_{STG}	Storage Temperature	-65~150	℃
$R_{\theta JA}$	Junction-to-Ambient	120	℃/W

AT1117SR-XX

Electrical Characteristics(Ta=25°C)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
Reference voltage	Vref	Iout=10mA,Vin-Vout=2V 10mA≤Iout≤1.0A ,1.4V≤Vin-Vout≤12V	1.231 1.225	1.250 1.250	1.269 1.275	V
Output voltage	Vout	AT1117SR-1.20V Iout=10mA,Vin=3.2V 0≤Iout≤1.0A ,3.0V≤Vin≤12V	1.182 1.176	1.200 1.200	1.218 1.224	V
		AT1117SR-1.50V Iout=10mA,Vin=3.5V 0≤Iout≤1.0A ,3.0V≤Vin≤12V	1.477 1.470	1.500 1.500	1.523 1.530	V
		AT1117SR-1.80V Iout=10mA,Vin=3.8V 0≤Iout≤1.0A ,3.2V≤Vin≤12V	1.773 1.764	1.800 1.800	1.827 1.836	V
		AT1117SR-2.5V Iout=10mA,Vin=4.5V 0≤Iout≤1.0A ,3.9V≤Vin≤12V	2.463 2.450	2.500 2.500	2.537 2.550	V
		AT1117SR-2.85V Iout=10mA,Vin=4.85V 0≤Iout≤1.0A ,4.25V≤Vin≤12V	2.807 2.793	2.850 2.850	2.893 2.907	V
		AT1117SR-3.3V Iout=10mA,Vin=5V 0≤Iout≤1.0A ,4.75V≤Vin≤12V	3.250 3.234	3.300 3.300	3.350 3.366	V
		AT1117SR-5V Iout=10mA,Vin=7V 0≤Iout≤1.0A ,6.5V≤Vin≤12V	4.925 4.900	5.000 5.000	5.075 5.100	V
Line regulation (Note1)	LNR	AT1117SR-adj Iout=10mA,1.4V≤Vin-Vout≤10.75V		0.035	0.2	%
		AT1117SR-XX Iout=10mA, Vout+1.4V≤Vin≤12V		4	12	mV
Load regulation (Note1,2)	LDR	AT1117SR-adj Vin-Vout=3V, 10mA≤Iout≤1.0A		0.2	0.4	%
		AT1117SR-XX Vin=Vout+1.4V, 0≤Iout≤1.0A		6	12	mV
Dropout voltage (Note3)	Vin-Vout	ΔVout, ΔVref=1%,Iout=100mA		1.0	1.2	V
		ΔVout, ΔVref=1%,Iout=500mA		1.05	1.25	V
		ΔVout, ΔVref=1%,Iout=1.0A		1.1	1.3	V
Maximum load current	Ilimit	Vin-Vout=2V, Tj=25℃	1.0	1.4		A
Minimum load current(Note4)				5	10	mA
Quiescent current	Iq	AT1117SR-XX Vin-Vout=1.25V		4	8	mA
Adjust pin current	Iadj	AT1117SR-adj		55	120	μA
Adjust change	Ichange			0.2	5	μA
Temperature coefficient	Ts				0.5	%

Note1: The voltage linearity and load regulation parameters given in the table are tested at room temperature. Please refer to the following typical parameter curve for the curve of load regulation with temperature.

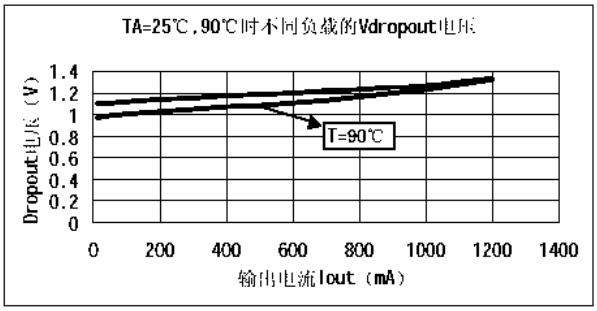
Note2: Under normal temperature, when Iout changes from 0 to 1.0A and Vin-Vout changes from 1.4V to 12V, the parameters can meet the specifications given in the table. If the temperature changes from -40°C to 125°C, in order to meet the specification, the circuit needs to output more than 10mA.

Note3: The input and output voltage difference Vdropout is tested under the following conditions. Under various output current values, the output voltage Vout when Vin=Vout+1.3V is used as the output reference voltage value, reduce the input voltage, when the value of Vout When it is reduced by 1%, the corresponding input and output voltage difference is Vdropout.

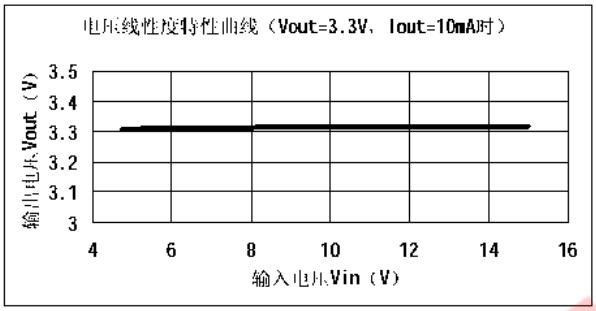
Note4: The minimum load current means that when the input voltage changes within the following range (1.4V≦Vin-Vout≦12V), in order to ensure that the change of Vout is within the specified range, the requirement for the output load current is that the load current is not less than 10mA.

Electrical Characteristics Curves

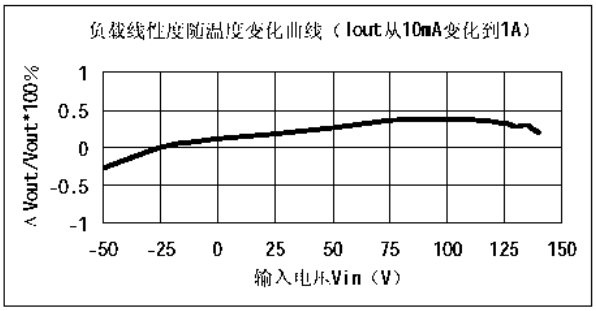
1.不同负载时输入输出电压差特性曲线

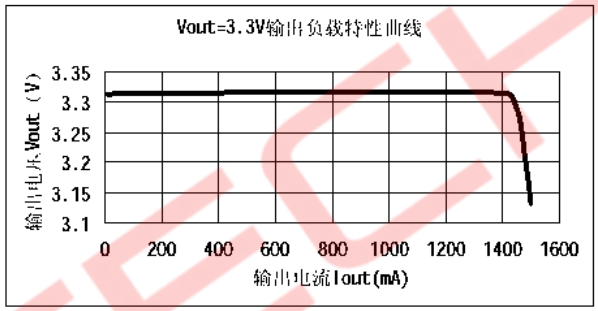


2.电压线性度特性曲线

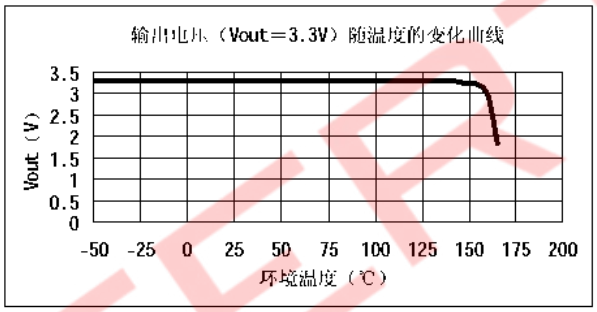


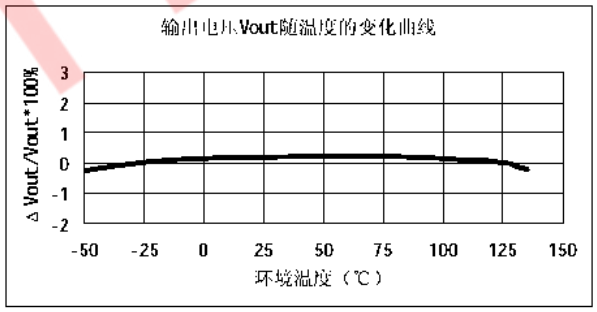
3.负载特性曲线



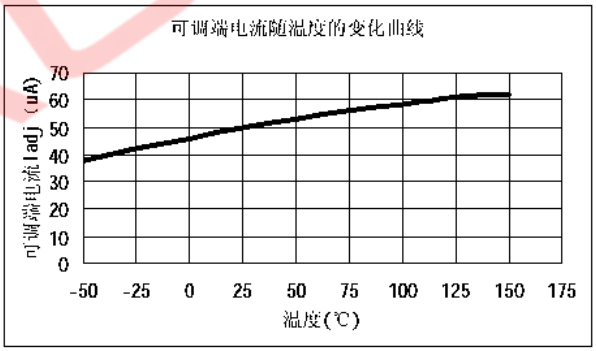


4.温度稳定性曲线



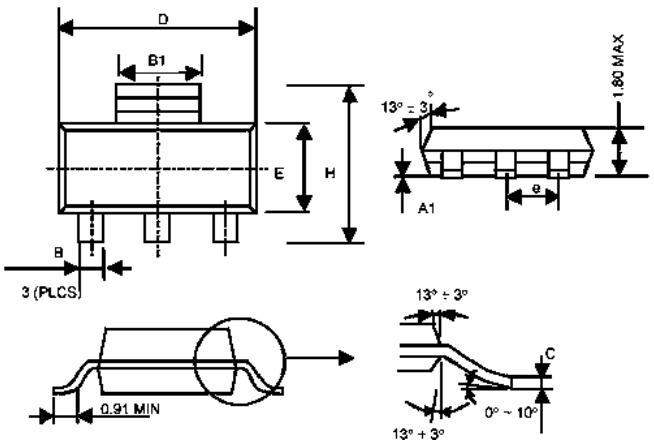


5.可调端输出电流随温度变化曲线



Package Outline

- **SOT-223**



SYMBOL	MIN	MAX
A1	0.02	0.12
B	0.60	0.80
B1	2.90	3.15
C	0.24	0.35
D	6.30	6.80
E	3.30	3.70
e	2.30 (TYP.)	
H	6.70	7.30