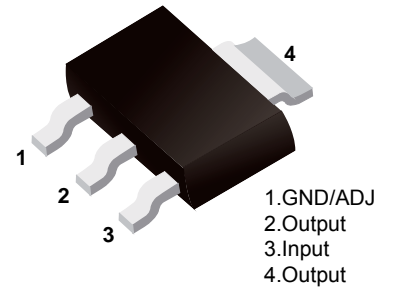


■ **Low Dropout Voltage Regulator**

■ **Features**

- Maximum output current is 800mA
- Output voltage accuracy is within  $\pm 1\%$
- Range of operation input voltage: 15V(Max)
- Line regulation : 0.2%
- Load regulation : 0.4%
- Environment Temperature:-40°C~125°C
- Three-terminal adjustable or fixed low drop out  
1.2V, 1.25V, 1.5V, 1.8V, 2.5V, 2.85V, 3.3V, 5.0V, Regulators



■ **Simplified outline(SOT-223)**

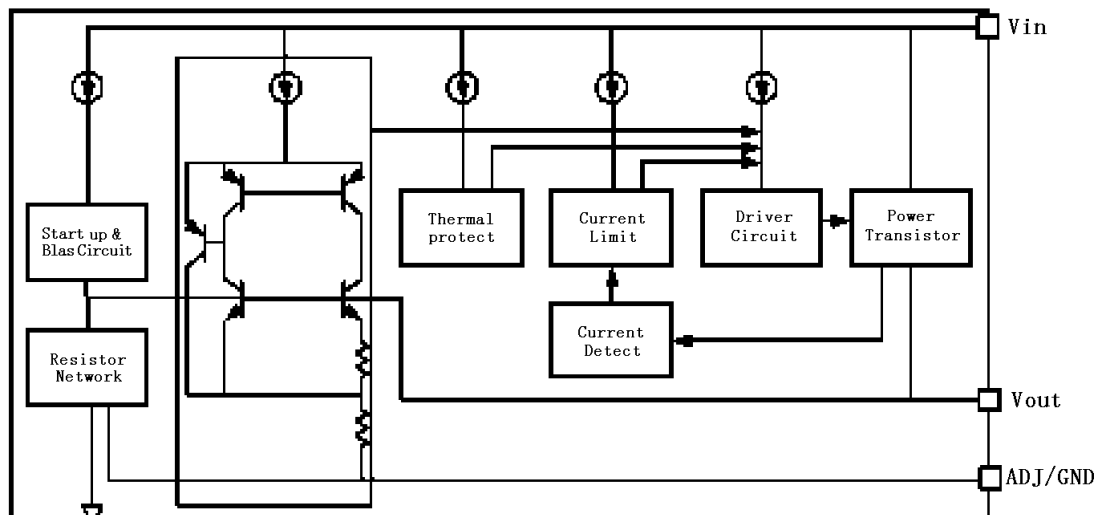
■ **Marking**

Marking	1117-X.X
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■ **Absolute Maximum Ratings Ta = 25°C**

Parameter	Symbol	Rating	Unit
Maximum input voltage	V <sub>in</sub>	18	V
Input voltage range	V <sub>in</sub>	15	
Lead temperature and time		300°C, 10S	
Adjust Pin Current (Adjustable Version)	I <sub>ADJ</sub>	120	uA
Adjust Pin Current Change	I <sub>change</sub>	5	
Temperature Stability		0.5	%
Junction Temperature	T <sub>J</sub>	150	°C
Environment temperature		-40 to 125	
Storage Temperature Range	T <sub>stg</sub>	-65 to 150	

■ **Block Diagrams**



**Electrical Characteristics**

Parameter	Symbol	Test Conditions	Min	Typ.	Max	Unit
Reference voltage	$V_{ref}$	$I_{out}=10mA, V_{in}-V_{out}=2V$ $10mA \leq I_{out} \leq 0.8A, 1.5V \leq V_{in}-V_{out} \leq 12V$	1.238 1.225	1.25 1.25	1.262 1.275	
Output voltage	$V_{out}$	AMS1117-1.2S $I_{out}=10mA, V_{in}=3.3V, T_j=25^\circ C$ $0 \leq I_{out} \leq 800mA, 2.6V \leq V_{in} \leq 12V$	1.175	1.2	1.225	V
		AMS1117-1.25S $I_{out}=10mA, V_{in}=3.35V, T_j=25^\circ C$ $0 \leq I_{out} \leq 800mA, 2.65V \leq V_{in} \leq 12V$	1.238 1.225	1.25 1.25	1.262 1.275	
		AMS1117-1.5S $I_{out}=10mA, V_{in}=3.6V, T_j=25^\circ C$ $0 \leq I_{out} \leq 800mA, 2.9V \leq V_{in} \leq 12V$	1.47	1.5	1.53	
		AMS1117-1.8S $I_{out}=10mA, V_{in}=3.8V, T_j=25^\circ C$ $0 \leq I_{out} \leq 800mA, 3.2V \leq V_{in} \leq 12V$	2.475 2.45	2.5 2.5	2.525 2.55	
		AMS1117-2.5S $I_{out}=10mA, V_{in}=4.5V, T_j=25^\circ C$ $0 \leq I_{out} \leq 800mA, 3.9V \leq V_{in} \leq 12V$	2.475 2.45	2.5 2.5	2.525 2.55	
		AMS1117-2.85S $I_{out}=10mA, V_{in}=4.85V, T_j=25^\circ C$ $0 \leq I_{out} \leq 800mA, 4.25V \leq V_{in} \leq 12V$	2.822 2.793	2.85 2.85	2.878 2.907	
		AMS1117-3.3S $I_{out}=10mA, V_{in}=5V, T_j=25^\circ C$ $0 \leq I_{out} \leq 800mA, 4.75V \leq V_{in} \leq 12V$	3.267 3.234	3.3 3.3	3.333 3.366	
		AMS1117-5.0S $I_{out}=10mA, V_{in}=7V, T_j=25^\circ C$ $0 \leq I_{out} \leq 800mA, 6.5V \leq V_{in} \leq 12V$	4.95 4.9	5 5	5.05 5.1	
		Line regulation	AMS1117-ADJ AMS1117-1.2S AMS1117-1.25S AMS1117-1.5S AMS1117-1.8S AMS1117-2.5S AMS1117-2.85S AMS1117-3.3S AMS1117-5.0S	$I_{out}=10mA, 1.5V \leq V_{in}-V_{out} \leq 12V$ $I_{out}=10mA, 2.6V \leq V_{in} \leq 15V$ $I_{out}=10mA, 2.65V \leq V_{in} \leq 15V$ $I_{out}=10mA, 2.9V \leq V_{in} \leq 15V$ $I_{out}=10mA, 3.2V \leq V_{in} \leq 15V$ $I_{out}=10mA, 3.9V \leq V_{in} \leq 15V$ $I_{out}=10mA, 4.25V \leq V_{in} \leq 15V$ $I_{out}=10mA, 4.75V \leq V_{in} \leq 15V$ $I_{out}=10mA, 6.5V \leq V_{in} \leq 15V$		
Line regulation	AMS1117-ADJ AMS1117-1.2S AMS1117-1.25S AMS1117-1.5S AMS1117-1.8S AMS1117-2.5S AMS1117-2.85S AMS1117-3.3S AMS1117-5.0S	$V_{in}-V_{out}=3V, 10mA \leq I_{out} \leq 800mA$ $V_{in}=2.6V, 0 \leq I_{out} \leq 800mA$ $V_{in}=2.65V, 0 \leq I_{out} \leq 800mA$ $V_{in}=2.9V, 0 \leq I_{out} \leq 800mA$ $V_{in}=3.2V, 0 \leq I_{out} \leq 800mA$ $V_{in}=3.9V, 0 \leq I_{out} \leq 800mA$ $V_{in}=4.25V, 0 \leq I_{out} \leq 800mA$ $V_{in}=4.75V, 0 \leq I_{out} \leq 800mA$ $V_{in}=6.5V, 0 \leq I_{out} \leq 800mA$		0.2 3	0.4 10	% mV

■ Electrical Characteristics

Dropout voltage	Vin-Vout	$\Delta V_{out}, \Delta V_{ref} = 1\%, I_{out} = 100mA$		1.11	1.2	V
		$\Delta V_{out}, \Delta V_{ref} = 1\%, I_{out} = 500mA$		1.18	1.25	
		$\Delta V_{out}, \Delta V_{ref} = 1\%, I_{out} = 800mA$		1.26	1.3	
Current limit	Ilimit	Vin-Vout=2V, Tj=25°C	1.25	1.4	1.6	A
Minimum load current		AMS1117-ADJS		5	10	mA
Quiescent current	Iq	AMS1117-1.2S, Vin-Vout=1.25V		4	8	
		AMS1117-1.25S, Vin-Vout=1.25V				
		AMS1117-1.5S, Vin-Vout=1.25V				
		AMS1117-2.5S, Vin-Vout=1.25V				
		AMS1117-2.85S, Vin-Vout=1.25V				
		AMS1117-3.3S, Vin-Vout=1.25V				
		AMS1117-5S, Vin-Vout=1.25V				

■ Typical Application

AMS1117 has an adjustable version and five fixed versions, Chart 1 is its typical application:

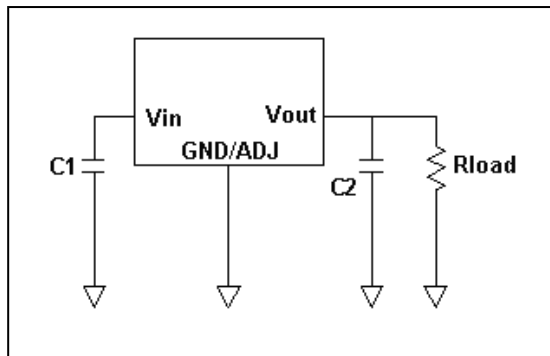


Chart 1: Application circuit of AMS1117 fixed version

The AMS1117 adjustable version provide 1.25V Reference Voltage. Any output voltage between 1.25V~13.8V can be available by choosing two external resistors (connection method is shown in chart 2). In chart 2, R1, R2 is the two external resistors.

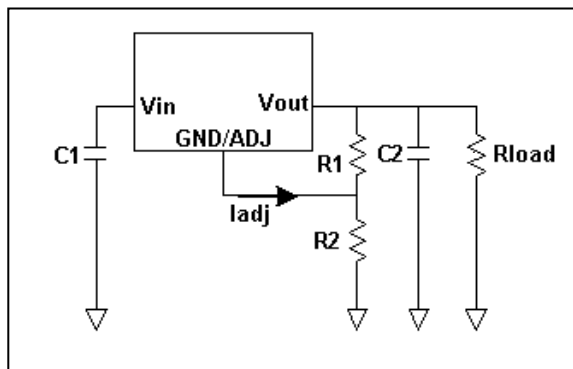
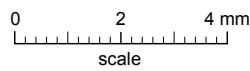
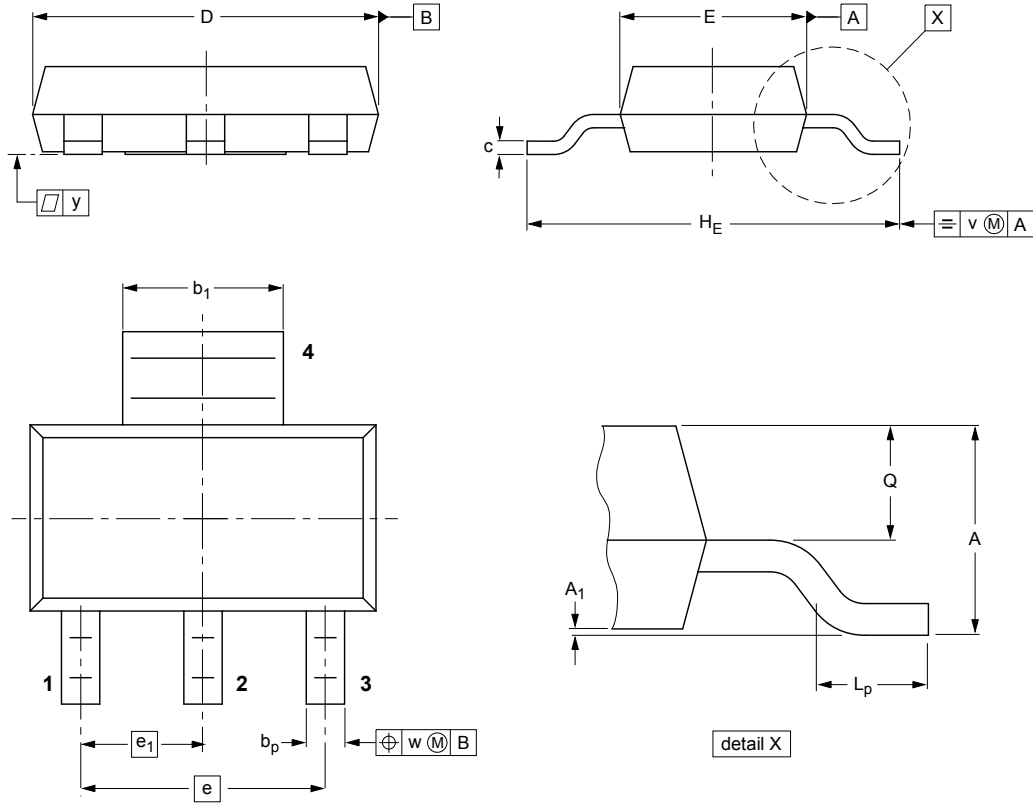


Chart 2. Application Circuit of AMS1117 adjustable version

Package Outline

SOT-223



- 1.GND/ADJ
- 2.Output
- 3.Input
- 4.Output

DIMENSIONS (mm are the original dimensions)

UNIT	A	A <sub>1</sub>	b <sub>p</sub>	b <sub>1</sub>	c	D	E	e	e <sub>1</sub>	H <sub>E</sub>	L <sub>p</sub>	Q	v	w	y
mm	1.8 1.5	0.10 0.01	0.80 0.60	3.1 2.9	0.32 0.22	6.7 6.3	3.7 3.3	4.6	2.3	7.3 6.7	1.1 0.7	0.95 0.85	0.2	0.1	0.1

Summary of Packing Options

Package	Package Description	Packing Quantity	Industry Standard
SOT-223	Tape/Reel,13"reel	2500	EIA-481-1