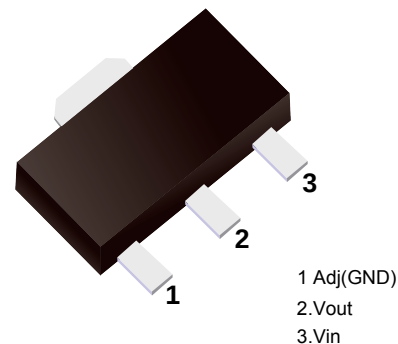


AMS1117-X.X

Low Dropout Linear Regulator

Features

- Low dropout voltage
- Load regulation: 0.2% typical
- Optimized for Low Voltage
- On-chip thermal limiting
- 1A Adjustable/Fixed Low Dropout Linear Regulator
- Three-terminal adjustable or fixed low drop out
1.2V, 1.25V, 1.5V, 1.8V, 1.9V, 2.5V, 2.85V, 3.3V, 5V. Regulators



■ Simplified outline(SOT-89)

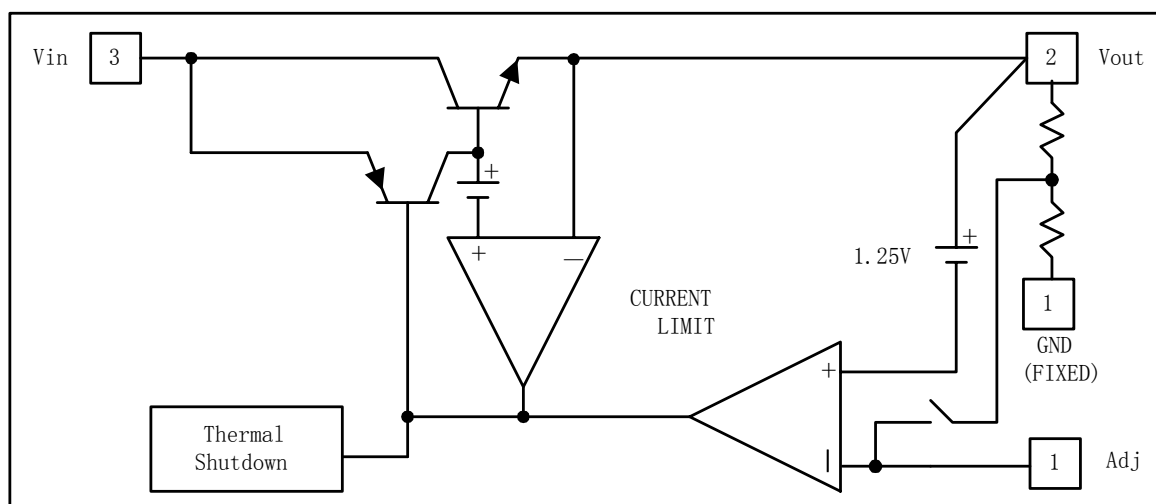
Marking

Marking	1117-X.X
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Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Maximum Input Voltage	V_{in}	18	V
Power Dissipation	P_D	Internally Limited	
Operating Junction Temperature Range	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{ST}	-65 to +150	$^\circ\text{C}$

Block Diagram



AMS1117-X.X

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reference Voltage	VREF	AMS1117-ADJ 10mA ≤ I _{OUT} ≤ 800mA, 1.5V ≤ V _{IN} - V _{OUT} ≤ 12V	1.225	1.25	1.275	
Output Voltage	V _{OUT}	AMS1117-1.2 0 ≤ I _{OUT} ≤ 800mA, 2.6V ≤ V _{IN} - V _{OUT} ≤ 12V	1.175	1.2	1.225	V
		AMS1117-1.25 0 ≤ I _{OUT} ≤ 800mA, 2.65 V ≤ V _{IN} - V _{OUT} ≤ 12V	1.238	1.25	1.275	
		AMS1117-1.5 0 ≤ I _{OUT} ≤ 800mA, 2.9V ≤ V _{IN} - V _{OUT} ≤ 12V	1.47	1.5	1.53	
		AMS1117-1.8 0 ≤ I _{OUT} ≤ 800mA, 3.2V ≤ V _{IN} - V _{OUT} ≤ 12V	1.764	1.8	1.836	
		AMS1117-1.9 0 ≤ I _{OUT} ≤ 800mA, 3.3V ≤ V _{IN} - V _{OUT} ≤ 12V	1.862	1.9	1.938	
		AMS1117-2.5 0 ≤ I _{OUT} ≤ 800mA, 3.9V ≤ V _{IN} - V _{OUT} ≤ 12V	2.45	5.5	2.55	
		AMS1117-2.85 0 ≤ I _{OUT} ≤ 800mA, 4.25V ≤ V _{IN} - V _{OUT} ≤ 12V	2.822	2.85	2.878	
		AMS1117-3.3 0 ≤ I _{OUT} ≤ 800mA, 4.75V ≤ V _{IN} - V _{OUT} ≤ 12V	3.234	3.3	3.366	
		AMS1117-5.0 0 ≤ I _{OUT} ≤ 800mA, 6.5V ≤ V _{IN} - V _{OUT} ≤ 12V	4.9	5	5.1	
Line Regulation	ΔV _{OUT}	AMS1117-ADJ I _{OUT} =10mA, 1.5V ≤ V _{IN} -V _{OUT} ≤ 12V		0.035	0.2	%
		AMS1117-1.2 I _{OUT} =10mA, 2.6V ≤ V _{IN} -V _{OUT} ≤ 12V		9	12	mV
		AMS1117-1.25 I _{OUT} =10mA, 2.65V ≤ V _{IN} -V _{OUT} ≤ 12V				
		AMS1117-1.5 I _{OUT} =10mA, 2.9V ≤ V _{IN} -V _{OUT} ≤ 12V				
		AMS1117-1.8 I _{OUT} =10mA, 3.2V ≤ V _{IN} -V _{OUT} ≤ 12V				
		AMS1117-1.9 I _{OUT} =10mA, 3.3V ≤ V _{IN} -V _{OUT} ≤ 12V				
		AMS1117-2.5 I _{OUT} =10mA, 3.9V ≤ V _{IN} -V _{OUT} ≤ 12V				
		AMS1117-2.85 I _{OUT} =10mA, 4.25V ≤ V _{IN} -V _{OUT} ≤ 12V				
		AMS1117-3.3 I _{OUT} =10mA, 4.75V ≤ V _{IN} -V _{OUT} ≤ 12V				
		AMS1117-5.0 I _{OUT} =10mA, 6.5V ≤ V _{IN} -V _{OUT} ≤ 12V				
Load Regulation	ΔV _{OUT}	AMS1117-ADJ V _{IN} -V _{OUT} =3V, 10mA ≤ I _{OUT} ≤ 800mA		0.2	0.4	%
		AMS1117-1.2 V _{IN} =2.6V, 10mA ≤ I _{OUT} ≤ 800mA		3	10	mV
		AMS1117-1.25 V _{IN} =2.65V, 10mA ≤ I _{OUT} ≤ 800mA				
		AMS1117-1.5 V _{IN} =2.9V, 10mA ≤ I _{OUT} ≤ 800mA				
		AMS1117-1.8 V _{IN} =3.2V, 10mA ≤ I _{OUT} ≤ 800mA				
		AMS1117-1.9 V _{IN} =3.3V, 10mA ≤ I _{OUT} ≤ 800mA				
		AMS1117-2.5 V _{IN} =3.9V, 10mA ≤ I _{OUT} ≤ 800mA				
		AMS1117-2.85 V _{IN} =4.25V, 10mA ≤ I _{OUT} ≤ 800mA				
		AMS1117-3.3 V _{IN} =4.75V, 10mA ≤ I _{OUT} ≤ 800mA				
		AMS1117-5.0 V _{IN} =6.5V, 10mA ≤ I _{OUT} ≤ 800mA				
Dropout Voltage	V _{IN} -V _{OUT}	AMS1117-XXX ΔV _{OUT} , ΔV _{REF} =1%, I _{OUT} =0.1A		1.11	1.2	V
		AMS1117-XXX ΔV _{OUT} , ΔV _{REF} =1%, I _{OUT} =0.5A		1.18	1.25	
		AMS1117-XXX ΔV _{OUT} , ΔV _{REF} =1%, I _{OUT} =0.8A		1.26	1.3	
Current Limit	I _{limit}	AMS1117-XXX V _{IN} -V _{OUT} =5V, T _J = 25℃	1.25	1.4	1.6	A
		AMS1117-XXX AMS1117-ADJ		5	10	mA
Adjust Pin Current	I _{ADJ}			55	120	uA
Adjust Pin Current Change	I _{Change}			0.2		

■ Electrical Characteristics Ta = 25℃

Quiescent Current	I _Q	AMS1117-1.2	V _{IN} -V _{OUT} =1.25V		4	8	mA
		AMS1117-1.25					
		AMS1117-1.5					
		AMS1117-1.8					
		AMS1117-1.9					
		AMS1117-2.5					
		AMS1117-2.85					
		AMS1117-3.3					
		AMS1117-5.0					

■ Typical Applications

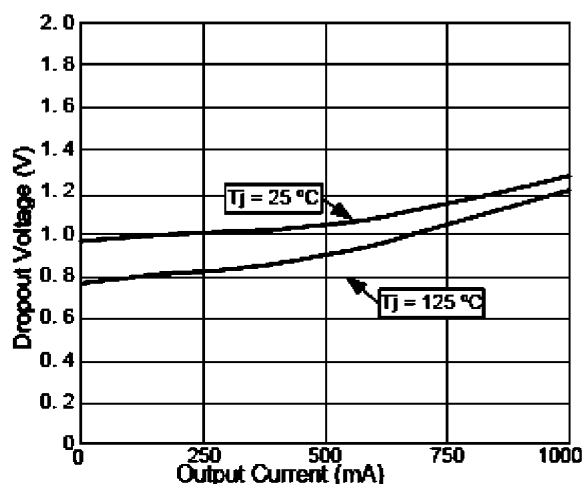


Fig.1 Dropout Voltage vs Output Current

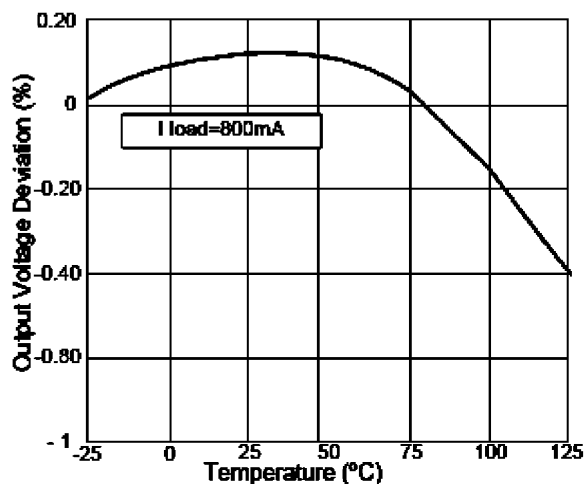


Fig.2 Load Regulation vs Temperature

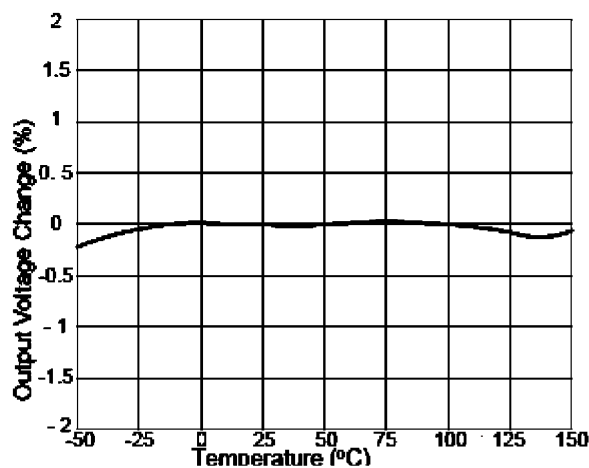


Fig.3 Percent Change in Output Voltage vs Temperature

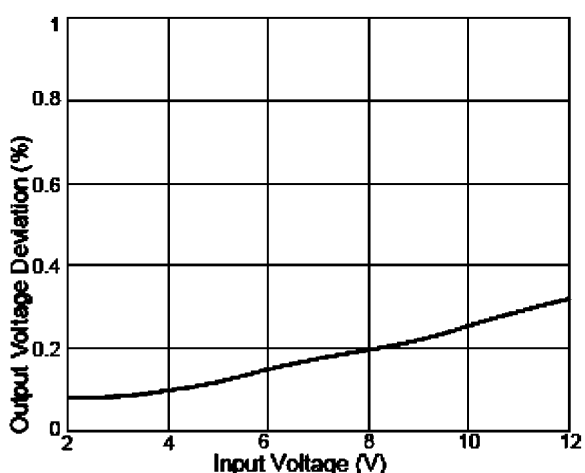


Fig.4 Line Regulation

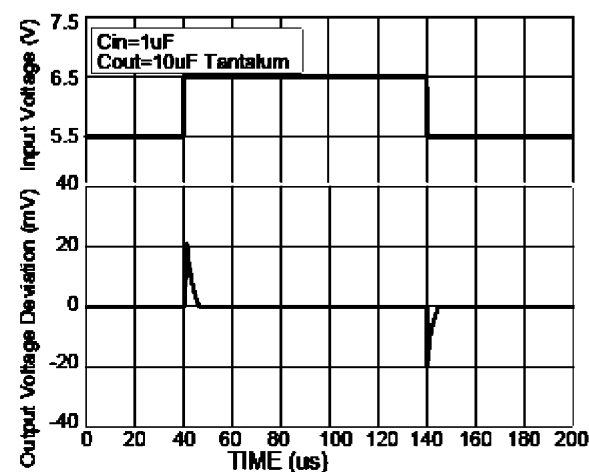


Fig.5 Line Transient Response

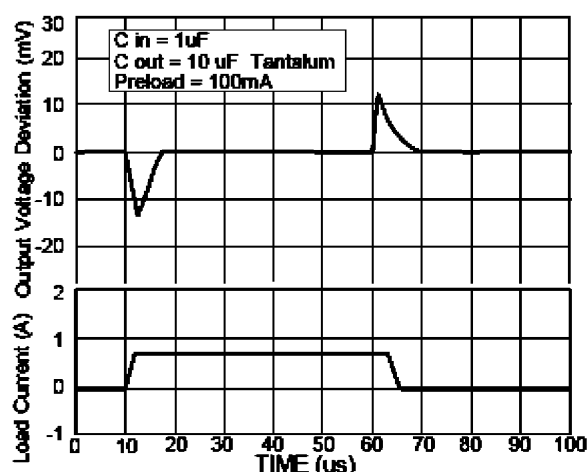
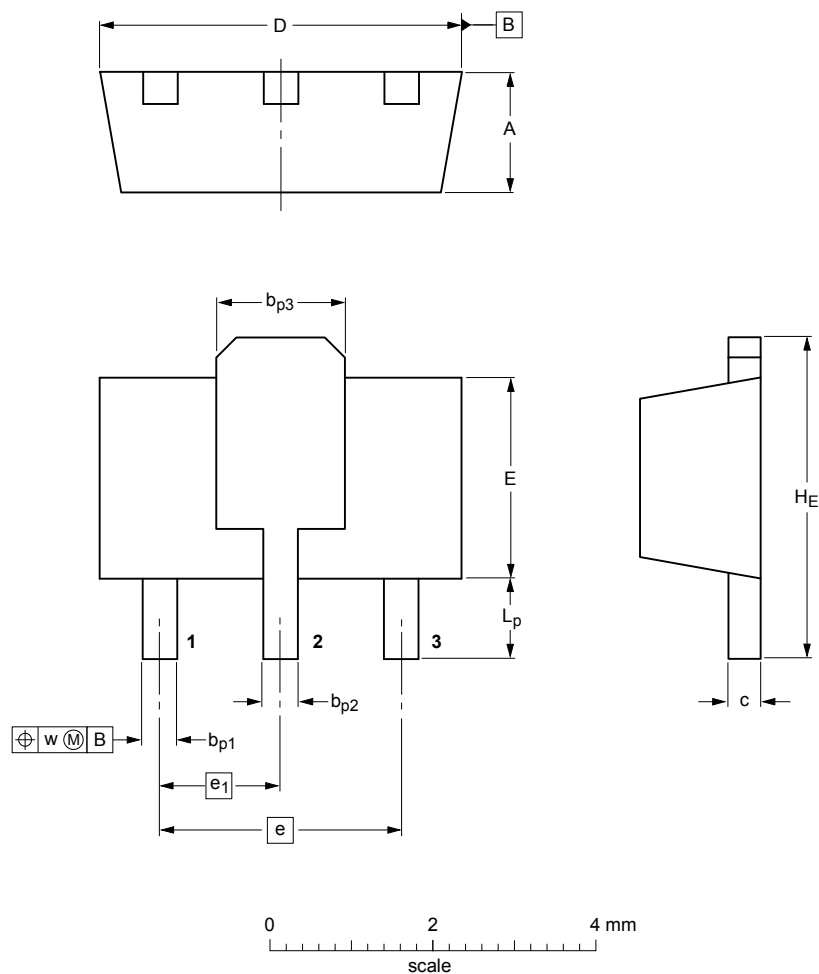


Fig.6 Load Transient Response

■ SOT-89



DIMENSIONS (mm are the original dimensions)

UNIT	A	b _{p1}	b _{p2}	b _{p3}	c	D	E	e	e ₁	H _E	L _p	w
mm	1.6 1.4	0.48 0.35	0.53 0.40	1.8 1.4	0.44 0.23	4.6 4.4	2.6 2.4	3.0	1.5	4.25 3.75	1.2 0.8	0.13