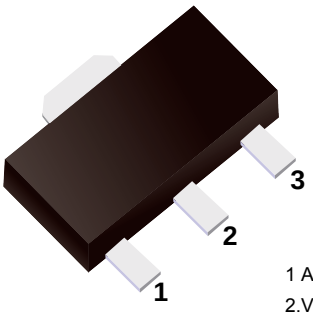
■Low Dropout Linear Regulator

■ Features

- Low dropout voltage
- Load regulation: 0.2% typic al
- 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



1 Adj(GND)
2.Vout
3.Vin

■ Simplified outline(SOT-89)

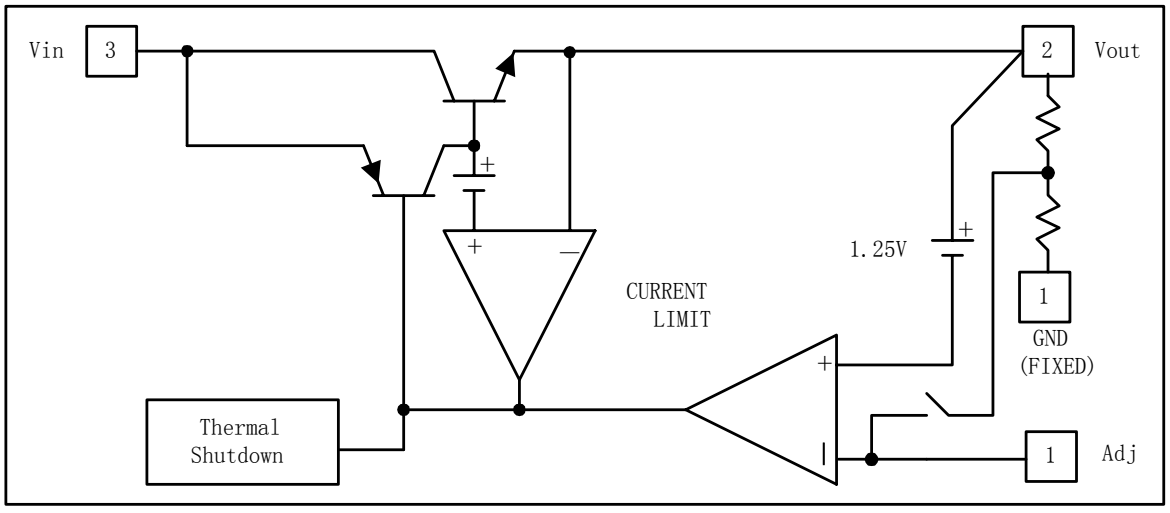
■ Marking

Marking	1117-X.X

■ Absolute Maximum Ratings Ta = 25℃

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

■ Block Diagram



■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Reference Voltage	V_{REF}	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	△V_{OUT}	AMS1117-ADJ	Iout=10mA,1.5V≤Vin-Vout≤12V		0.035	0.2	%
		AMS1117-1.2	Iout=10mA,2.6V≤Vin-Vout≤12V		9	12	mV
		AMS1117-1.25	Iout=10mA,2.65V≤Vin-Vout≤12V				
		AMS1117-1.5	Iout=10mA,2.9V≤Vin-Vout≤12V				
		AMS1117-1.8	Iout=10mA,3.2V≤Vin-Vout≤12V				
		AMS1117-1.9	Iout=10mA,3.3V≤Vin-Vout≤12V				
		AMS1117-2.5	Iout=10mA,3.9V≤Vin-Vout≤12V				
		AMS1117-2.85	Iout=10mA,4.25V≤Vin-Vout≤12V				
		AMS1117-3.3	Iout=10mA,4.75V≤Vin-Vout≤12V				
		AMS1117-5.0	Iout=10mA,6.5V≤Vin-Vout≤12V				
Load Regulation	△V_{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	ΔVout,ΔV_{REF}=1%, I_{OUT}=0.1A		1.11	1.2	V
			ΔVout,ΔV_{REF}=1%, I_{OUT}=0.5A		1.18	1.25	
			ΔVout,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	IChange				0.2		

■ Electrical Characteristics Ta = 25℃

Quiescent Current	I_Q	AMS1117-1.2	Vin-Vout=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

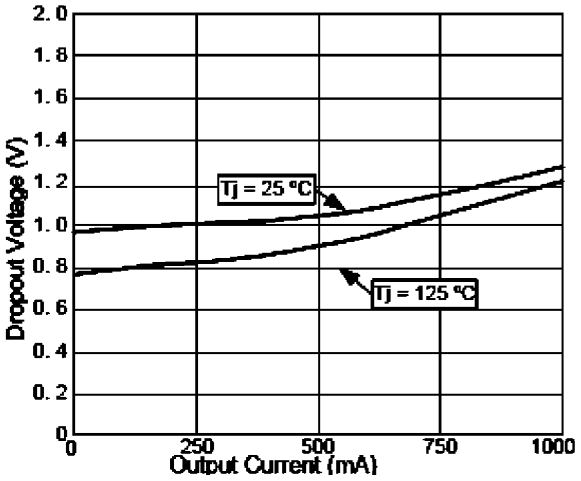


Fig.1 Dropout Voltage vs Output Current

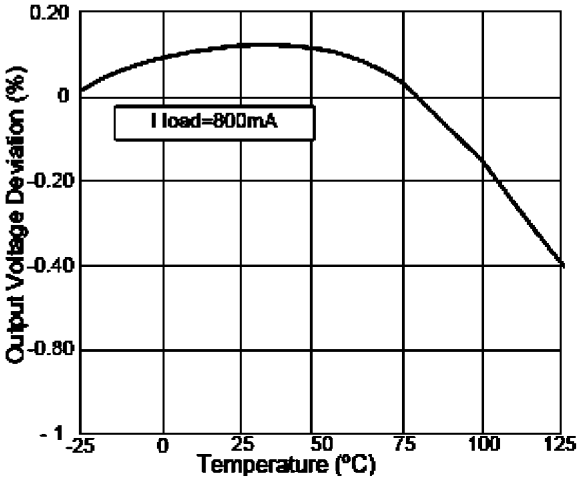


Fig.2 Load Regulation vs Temperature

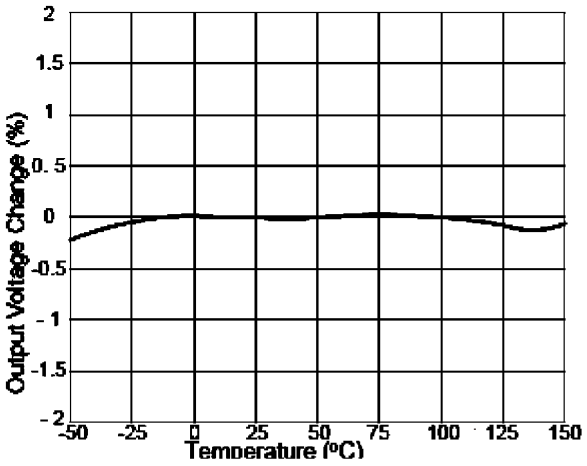


Fig.3 Percent Change in Output Voltage vs Temperature

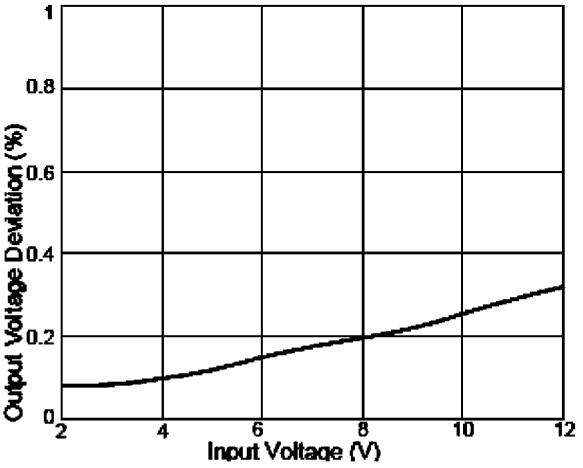


Fig.4 Line Regulation

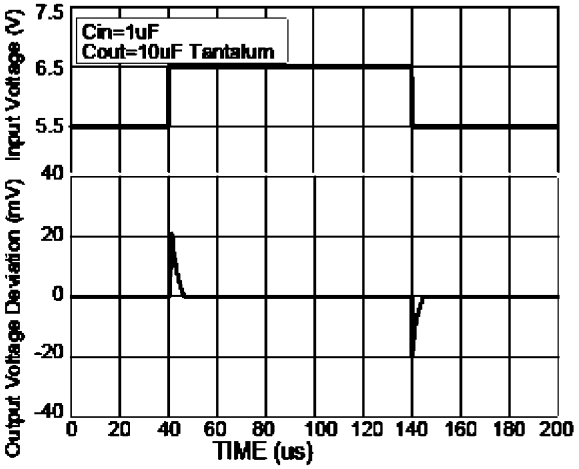


Fig.5 Line Transient Response

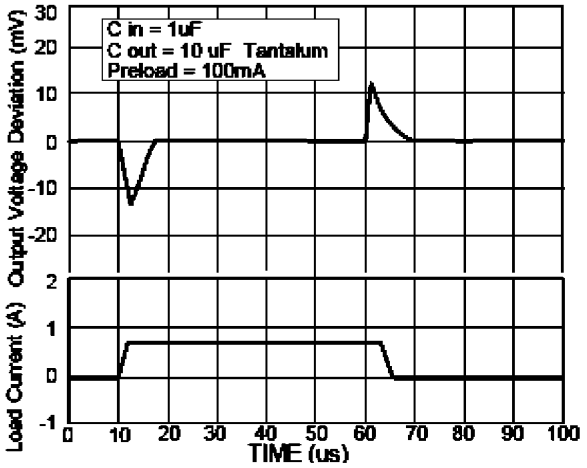
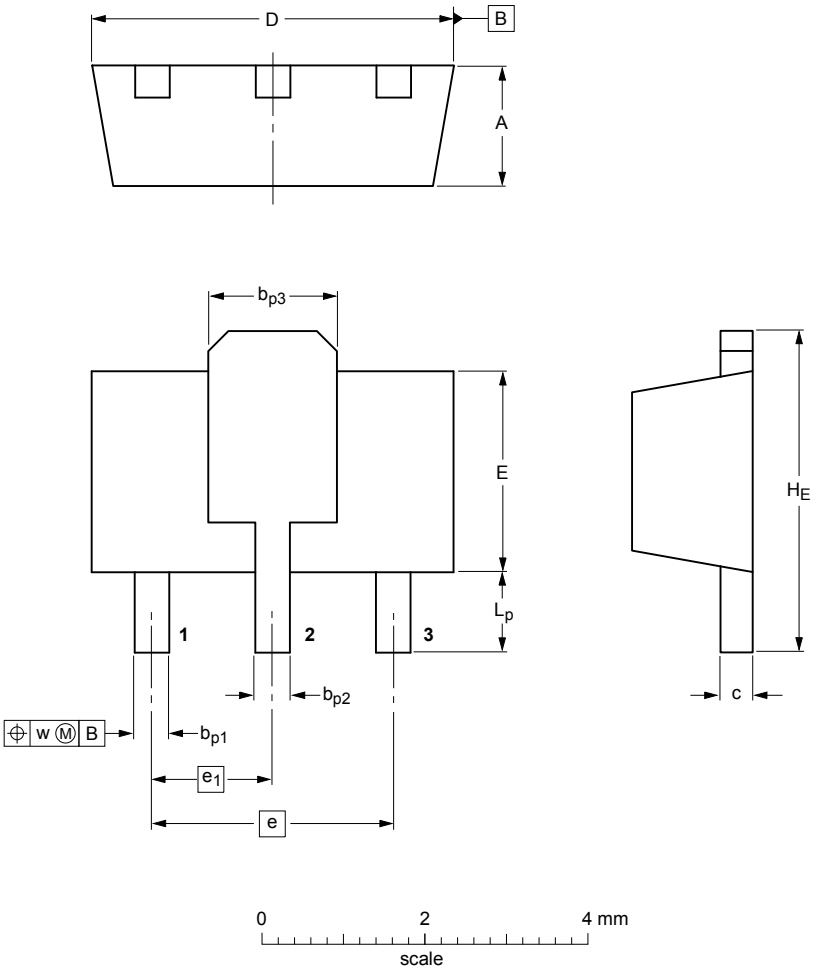


Fig.6 Load Transient Response

Package Outline 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

Summary of Packing Options

Package	Package Description	Packing Quantity	Industry Standard
SOT-89	Tape/Reel,7"reel	1000	EIA-481-1