

SOT-89 Plastic-Encapsulate Regulator

AMS1117-2.5

0.8A Low Dropout Linear Regulator

Features

- Three Terminal Adjustable or Fixed Voltages* 2.5V.
- Output Current of 800mA
- Operates Down to 1V Dropout
- Line Regulation: 0.2% Max.
- Load Regulation: 0.4% Max.

Application

- High Efficiency Linear Regulators
- Post Regulators for Switching Supplies
- 5V to 3.3V Linear Regulator
- Battery Chargers
- Active SCSI Terminators
- Power Management for Notebook
- Battery Powered Instrumentation

Marking:AMS11172.5LJ13

Description

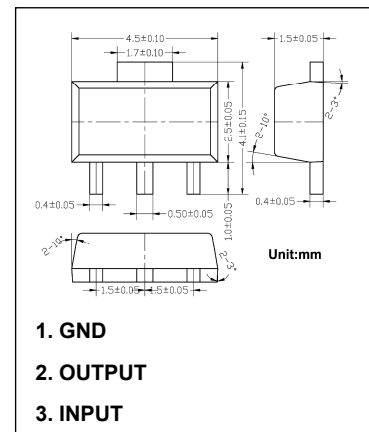
The AMS1117 fixed voltage regulators are designed to provide 800mA output current and to operate down to 1V input-to-output differential. The dropout voltage of the device is guaranteed maximum 1.3V at maximum output current, decreasing at lower load currents.

On-chip trimming adjusts the reference voltage to 1%. Current limit is also trimmed, minimizing the stress under overload conditions on both the regulator and power source circuitry.

The AMS1117 devices are pin compatible with other three-terminal SCSI regulators and are offered in the low profile surface mount SOT-89 package.

Absolute Maximum Ratings ¹⁾

Parameter	Value	Unit
Input Voltage	15	V
Operating Junction Temperature, Control Section	0°C to 125°C	°C
Operating Junction Temperature, Power Transistor	0°C to 150°C	°C
Storage Temperature Range	-65 to 150	°C
Lead Temperature (Soldering, 10sec.)	300	°C
Thermal Resistance	80	°C/W
Power Dissipation	Internally limited	



Electrical Characteristics (Operating Conditions: $V_{IN} \leq 10V$, $T_J = 25^\circ C$ unless otherwise specified)

Parameter	Conditions	Min	Typ	Max	unit
Output Voltage	$0 \leq I_{OUT} \leq 800mA$, $4.0V \leq V_{IN} \leq 12V$	2.475 2.460	2.5 2.5	2.525 2.560	V
Line Regulation	$I_{OUT} = 10mA$, $4.0V \leq V_{IN} \leq 12V$		0.3 0.6	6 6	mV
Load Regulation ^{2,3)}	$V_{IN} = 5V$, $0 \leq I_{OUT} \leq 800mA$		3 6	12 20	mV
Dropout Voltage ($V_{IN} - V_{OUT}$)	ΔV_{OUT} , $\Delta V_{REF} = 1\%$, $I_{OUT} = 800mA$ ⁴⁾		1.1	1.3	V
Current Limit	$V_{IN} - V_{OUT} = 5V$	0.9	1.1	1.5	A
Quiescent Current	$V_{IN} \leq 12V$		5	10	mA
Ripple Rejection	$f = 120Hz$, $C_{OUT} = 22\mu F$ Tantalum, $V_{IN} = 3V$, $I_{OUT} = 800mA$	60	75		dB
Temperature Stability			0.5		%
Long-Term Stability	$T_A = 125^\circ C$, 1000hrs		0.3	1	%
RMS Output Noise(% of V_{OUT})	$T_A = 25^\circ C$, $10Hz \leq f \leq 10KHz$		0.003		%
Thermal Resistance, Junction to Case *			15		$^\circ C/W$

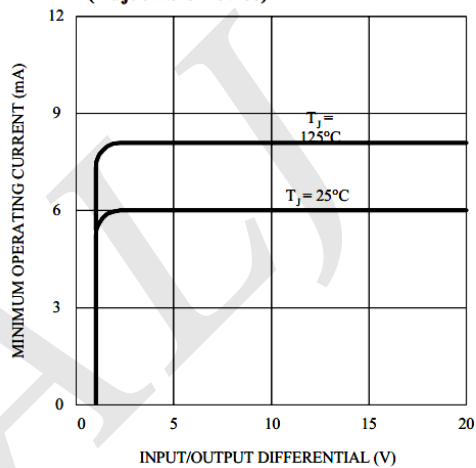
Notes:

Parameters identified with boldface type apply over the full operating temperature range.

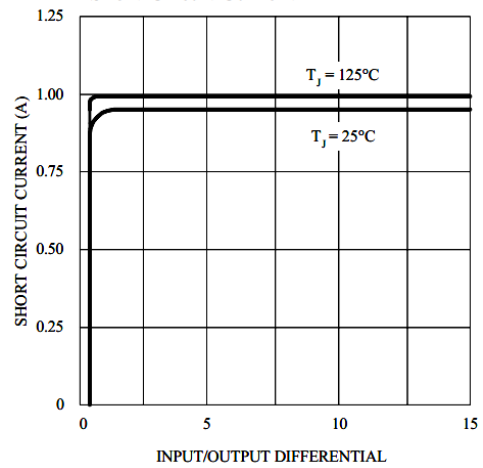
1. Absolute Maximum Ratings indicate limits beyond which damage to the device may occur. For guaranteed specifications and test conditions, see the Electrical Characteristics. The guaranteed specifications apply only for the test conditions listed.
2. Line and Load regulation are guaranteed up to the maximum power dissipation of 1.2 W. Power dissipation is determined by the input/output differential and the output current. Guaranteed maximum power dissipation will not be available over the full input/output range.
3. See thermal regulation specifications for changes in output voltage due to heating effects. Line and load regulation are measured at a constant junction temperature by low duty cycle pulse testing. Load regulation is measured at the output lead ~1/8" from the package.
4. Dropout voltage is specified over the full output current range of the device.

Typical Characteristics

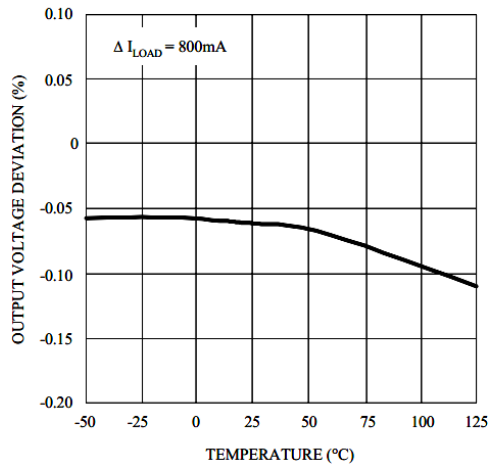
**Minimum Operating Current
(Adjustable Device)**



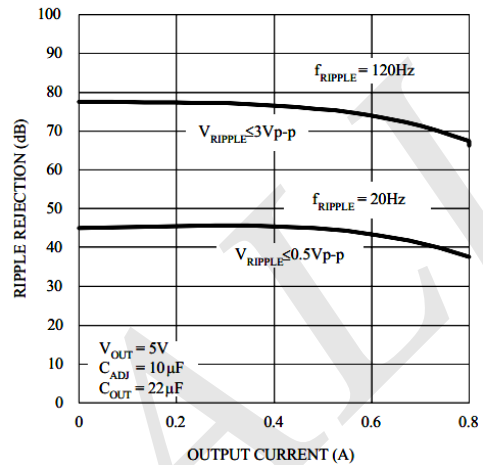
Short-Circuit Current



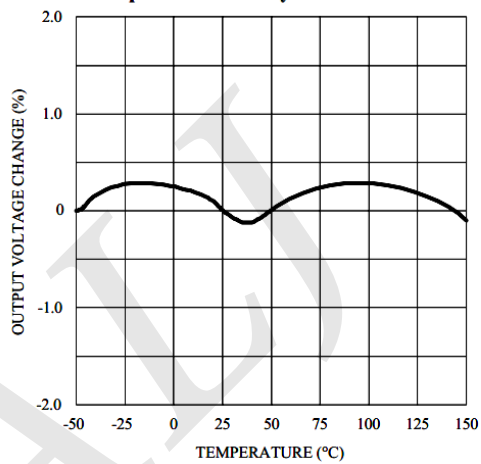
Load Regulation



Ripple Rejection vs. Current



Temperature Stability



Adjust Pin Current

