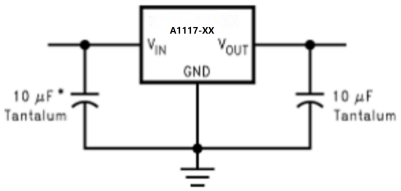
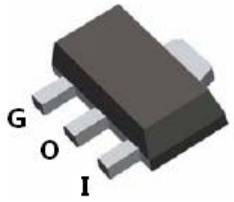
A1117-XX

800 mA Low-Dropout Linear Regulator

FEATURES

- Available in 1.5V,1.8V,2.5V,2.85V,3.3V 5V, and adjustable versions
- Current limiting and thermal protection
- Output current (800mA)
- Line regulation (0.2%Max)
- Load regulation (0.4%Max)





SOT-89

APPLICATIONS

- Post regualtor for switching DC/DC converter
- High efficiency linear regulators.
- Battery charger.
- Batterty powered instrumentation.

ORDERING INFORMATION

Type No.	Marking	Package Code
A1117-ADJ	1117-ADJ	SOT-89
A1117-1.5	1117-1.5	SOT-89
A1117-1.8	1117-1.8	SOT-89
A1117-2.5	1117-2.5	SOT-89
A1117-2.85	1117-2.85	SOT-89
A1117-3.3	1117-3.3	SOT-89
A1117-5.0	1117-5.0	SOT-89

MAXIMUM RATING operating temperature range applies unless otherwise specified

Symbol	Parameter	Value	Units
V_I	Input voltage	15	V
I_{CM}	Maximum output current	800	mA
P_D	Power dissipation	500	mW
$R_{\theta JA}$	Thermal Resistance Junction-Air	200	°C/W
$R_{\theta JC}$	Thermal Resistance Junction-Case	25	°C/W
$R_{\theta JL}$	Thermal Resistance Junction-Lead	11.5	°C/W
T_J	Operating Junction Temperature Range	0 to +125	°C
T_{STG}	Storage TemperatureRange	-65 to +150	°C

ELECTRICAL CHARACTERISTICS

Typicals and limits appearing in normal type apply for T_J=25℃.Limits appearing in Boldface type apply over the entire junction temperature range for operation,0℃ to 125℃

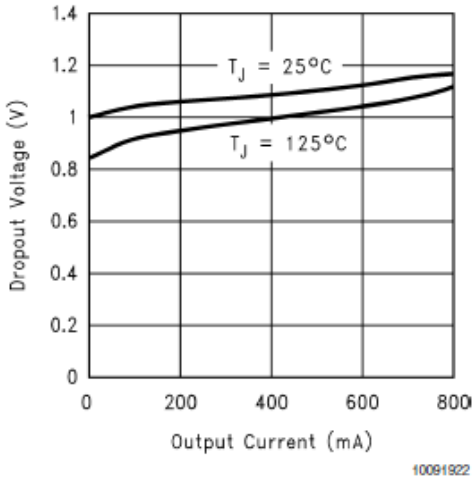
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Reference Voltage	V_{REF}	A1117-ADJ I_{OUT}=10mA,V_{IN}-V_{OUT}=2V,T_J=25℃ 10mA≤I_{OUT}≤800mA,1.4V≤V_{IN}-V_{OUT}≤10V	 1.238 1.225	 1.250 1.250	 1.262 1.270	V
Output Voltage	V_{OUT}	A1117-1.5 I_{OUT}=10mA,V_{IN}=3.5V,T_J=25℃ 10mA≤I_{OUT}≤800mA,3.0V≤V_{IN}≤10V	 1.485 1.470	 1.5 1.5	 1.515 1.530	V
		A1117-1.8 I_{OUT}=10mA,V_{IN}=3.8V,T_J=25℃ 0mA≤I_{OUT}≤800mA,3.2V≤V_{IN}≤10V	 1.782 1.746	 1.800 1.800	 1.818 1.854	V
		A1117-2.5 I_{OUT}=10mA,V_{IN}=4.5V,T_J=25℃ 0mA≤I_{OUT}≤800mA,3.9V≤V_{IN}≤10V	 2.475 2.450	 2.500 2.500	 2.525 2.550	V
		A1117-2.85 I_{OUT}=10mA,V_{IN}=4.85V,T_J=25℃ 0mA≤I_{OUT}≤800mA,4.25V≤V_{IN}≤10V 0mA≤I_{OUT}≤800mA,V_{IN}=4.1V	 2.82 2.79 2.79	 2.85 2.85 2.85	 2.88 2.91 2.91	V
		A1117-3.3 I_{OUT}=10mA,V_{IN}=5V,T_J=25℃ 0mA≤I_{OUT}≤800mA,4.75V≤V_{IN}≤10V	 3.267 3.235	 3.3 3.3	 3.333 3.365	V
		A1117-5.0 I_{OUT}=10mA,V_{IN}=7V,T_J=25℃ 0mA≤I_{OUT}≤800mA,6.5V≤V_{IN}≤12V	 4.95 4.9	 5.0 5.0	 5.05 5.1	V
Line regulation	ΔV_{OUT}	A1117-ADJ I_{OUT}=10mA,1.5V≤V_{IN}-V_{OUT}≤13.75V		 0.035	 0.2	%
		A1117-1.5 I_{OUT}=10mA,1.5V≤V_{IN}-V_{OUT}≤10V		 1	 6	mV
		A1117-1.8 I_{OUT}=10mA,3.2V≤V_{IN}≤10V		 1	 6	mV

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Line regulation	ΔV_{OUT}	A1117-2.5 I_{OUT}=10mA,3.9V≤V_{IN}≤10V		1	6	mV
		A1117-2.85 I_{OUT}=10mA,4.25V≤V_{IN}≤10V		1	6	mV
		A1117-3.3 I_{OUT}=10mA,4.75V≤V_{IN}≤15V		1	6	mV
		A1117-5.0 I_{OUT}=10mA,6.5V≤V_{IN}≤15V		1	10	mV
Load regulation	ΔV_{OUT}	A1117-ADJ V_{IN}-V_{OUT}=3V,10≤I_{OUT}≤800mA		0.2	0.4	%
		A1117-1.5 V_{IN}-V_{OUT}=2V,10≤ I_{OUT}≤800mA		1	10	mV
		A1117-1.8 V_{IN}=3.2V,0≤ I_{OUT}≤800mA		1	10	mV
		A1117-2.5 V_{IN}=3.9V,0≤ I_{OUT}≤800mA		1	10	mV
		A1117-2.85 V_{IN}=4.25V,0≤ I_{OUT}≤800mA		1	10	mV
		A1117-3.3 V_{IN}=4.75V,0≤ I_{OUT}≤800mA		1	10	mV
		A1117-5.0 V_{IN}=6.5V,0≤ I_{OUT}≤800mA		1	15	mV
Droput Voltage	V_{IN}-V_{OUT}	I_{OUT}=100mA I_{OUT}=500mA I_{OUT}=800mA		1.1 1.15 1.2	1.25 1.3 1.4	V
Current Limit	I_{LIMIT}	V_{IN}-V_{OUT}=5V, T_J=25℃	800	1200	1500	mA
Minimum Load Current		A1117-ADJ V_{IN}=15V		1.7	5	mA

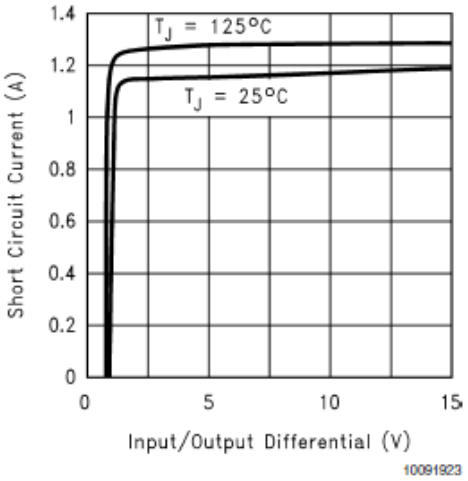
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Quiescent Currnt		A1117-1.5 V_{IN}-V_{OUT}=2V		5	10	mA
		A1117-1.8 V_{IN}≤15V		5	10	mA
		A1117-2.5 V_{IN}≤15V		5	10	mA
		A1117-2.85 V_{IN}≤10V		5	10	mA
		A1117-3.3 V_{IN}≤15V		5	10	mA
		A1117-5.0 V_{IN}≤15V		5	10	mA
Thermal Regulation		T_A=25℃,30ma Pulse		0.01	0.1	%/W
Ripple Regulation	I_{LIMIT}	f_{RIPPLE}=120Hz,V_{IN}-V_{OUT}=3V,V_{RIPPLE}=1V_{PP}	60	75		dB
Ajust Pin Current				60	120	uA
Ajust Pin Current Change		10≤I_{OUT}≤800mA		0.2	5	uA

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

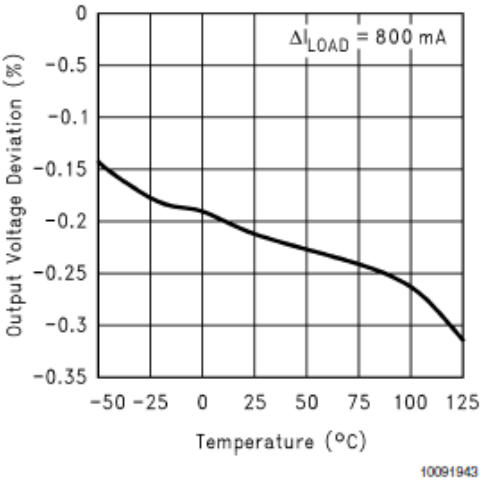
Dropout Voltage (V_{IN}-V_{OUT})



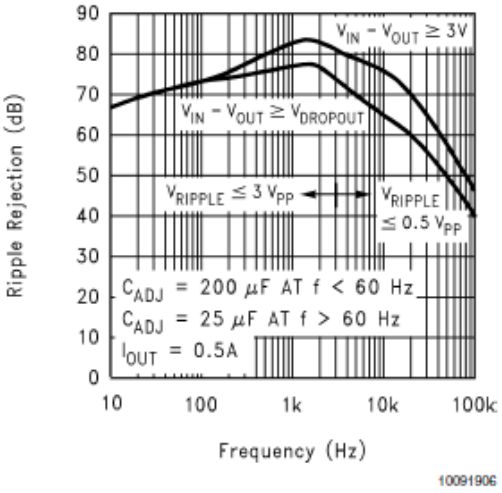
Short-Circuit Current



Load Regulation



LM1117-ADJ Ripple Rejection



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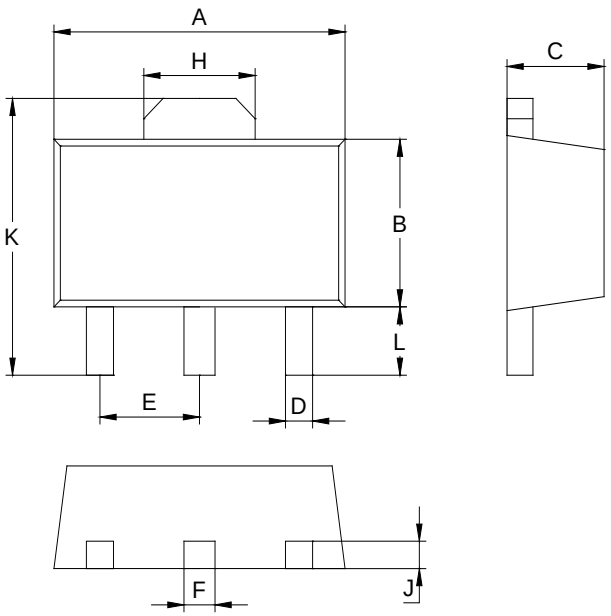
800 mA Low-Dropout Linear Regulator

PACKAGE OUTLINE

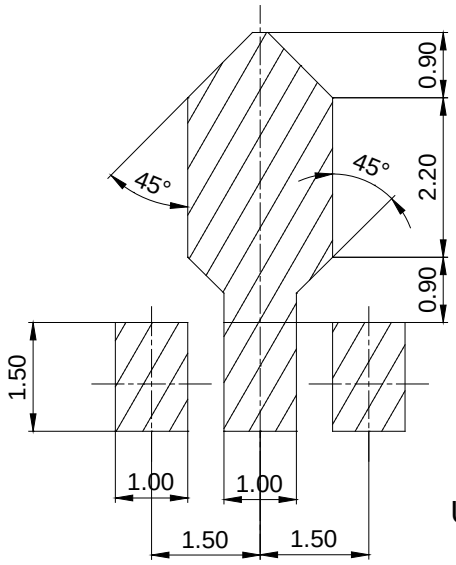
Plastic surface mounted package

SOT-89



SOT-89		
Dim	Min	Max
A	4.30	4.70
B	2.25	2.65
C	1.30	1.70
D	0.30	0.50
E	1.40	1.60
F	0.38	0.58
H	1.60	1.80
J	0.30	0.50
L	0.90	1.10
K	3.95	4.35
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit: mm

PACKAGE INFORMATION

Device	Package	Shipping
A1117-XX	SOT-89	1000pcs / Tape & Reel