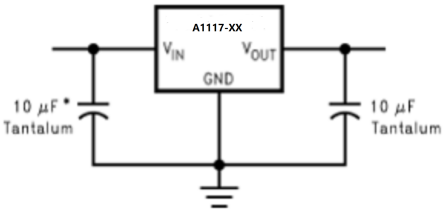
A1117-XX

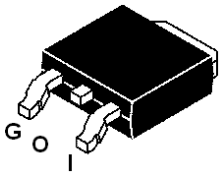
800 mA Low-Dropout Linear Regulator

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)



TO-251



TO-252

APPLICATIONS

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

Ordering Information

Part Number	Package	Shipping	Marking Code
A1117-ADJ	TO-251/TO-252	80/Tube or 2500/Tape Reel	1117-ADJ
A1117-1.5	TO-251/TO-252	80/Tube or 2500/Tape Reel	1117-1.5
A1117-1.8	TO-251/TO-252	80/Tube or 2500/Tape Reel	1117-1.8
A1117-2.5	TO-251/TO-252	80/Tube or 2500/Tape Reel	1117-2.5
A1117-2.85	TO-251/TO-252	80/Tube or 2500/Tape Reel	1117-2.85
A1117-3.3	TO-251/TO-252	80/Tube or 2500/Tape Reel	1117-3.3
A1117-5.0	TO-251/TO-252	80/Tube or 2500/Tape Reel	1117-5.0

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	1.25	W
$R_{\theta JA}$	Thermal Resistance Junction-Air	80	°C /W
$R_{\theta JC}$	Thermal Resistance Junction-Case	10	°C /W
T_J	Operating Junction Temperature Range	-40 to +125	℃
T_{STG}	Storage TemperatureRange	-65 to +150	℃

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℃

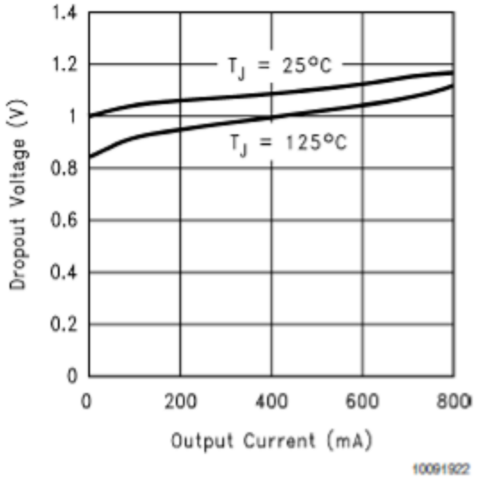
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Reference Voltage	V_{REF}	A1117-ADJ I_{OUT}=10mA,V_{IN}-V_{OUT}=2V,T_J=25℃ 10mA≤I_{OUT}≤800mA,1.4V≤V_{IN}-V_{OUT}≤10V	1.238 **1.225**	1.250 1.250	1.262 **1.270**	V
Output Voltage	V_{OUT}	A1117-1.5 I_{OUT}=10mA,V_{IN}=3.5V,T_J=25℃ 10mA≤I_{OUT}≤800mA,3.0V≤V_{IN}≤10V	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	**1.2** **1.25** **1.3**	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

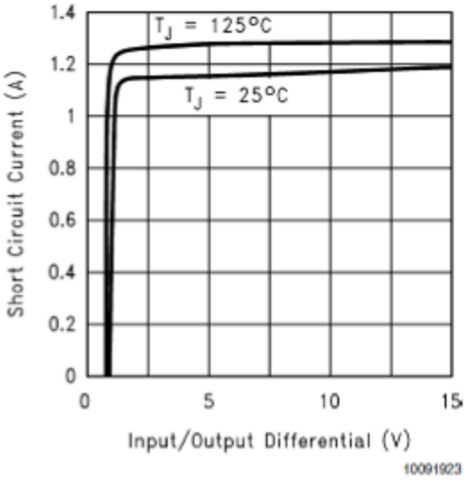
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Quiescent Currnt		A1117-1.5 V_{IN}-V_{OUT}=2V		5	10	mA
		A1117-1.8 $V_{IN}\leqslant$15V		5	10	mA
		A1117-2.5 $V_{IN}\leqslant$15V		5	**10**	mA
		A1117-2.85 $V_{IN}\leqslant$10V		5	**10**	mA
		A1117-3.3 $V_{IN}\leqslant$15V		5	**10**	mA
		A1117-5.0 $V_{IN}\leqslant$15V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

TYPICAL CHARACTERISTICS @ Ta=25℃ unless otherwise specified

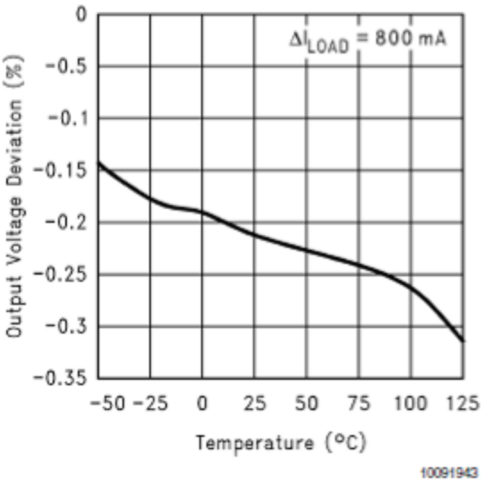
Dropout Voltage (V_{IN}-V_{OUT})



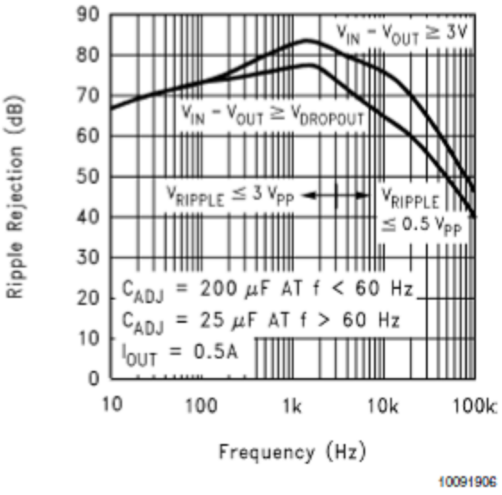
Short-Circuit Current



Load Regulation



1117-ADJ Ripple Rejection

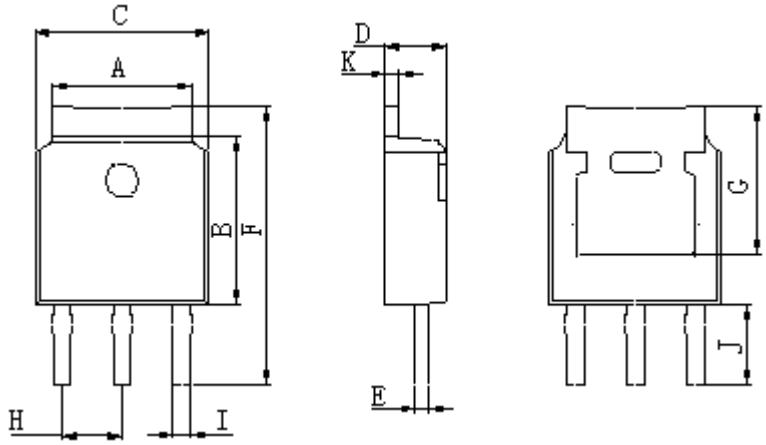


A1117-XX

800 mA Low-Dropout Linear Regulator

PACKAGE OUTLINE

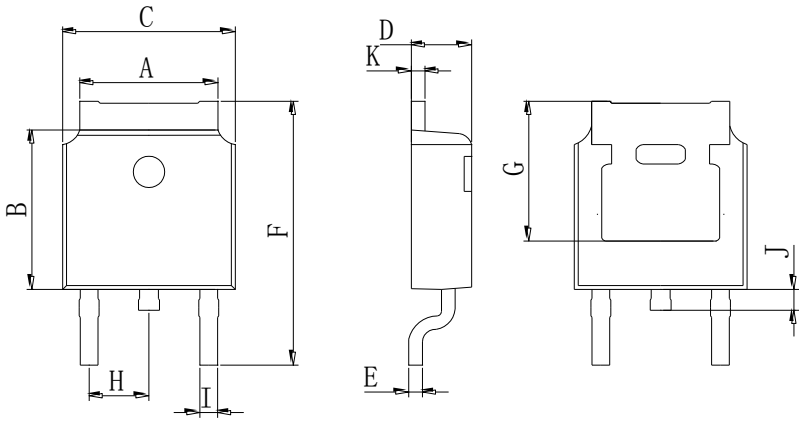
Plastic surface mounted package



TO-251		
A	5.05	5.65
B	5.80	6.40
C	6.25	6.85
D	2.20	2.40
E	0.40	0.60
F	12.00	12.60
G	5.05	5.65
H	2.10	2.50
I	0.70	0.90
J	4.90	5.50
K	0.40	0.60
All Dimensions in mm		

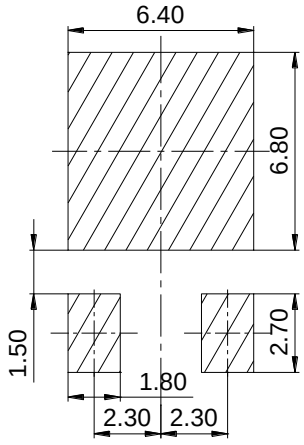
PACKAGE OUTLINE

Plastic surface mounted package



TO-252		
A	5.05	5.65
B	5.80	6.40
C	6.25	6.85
D	2.20	2.40
E	0.40	0.60
F	9.71	10.31
G	5.05	5.65
H	2.10	2.50
I	0.70	0.90
J	0.50	0.7
K	0.40	0.60
All Dimensions in mm		

SOLDERING FOOTPRINT



Unit: mm