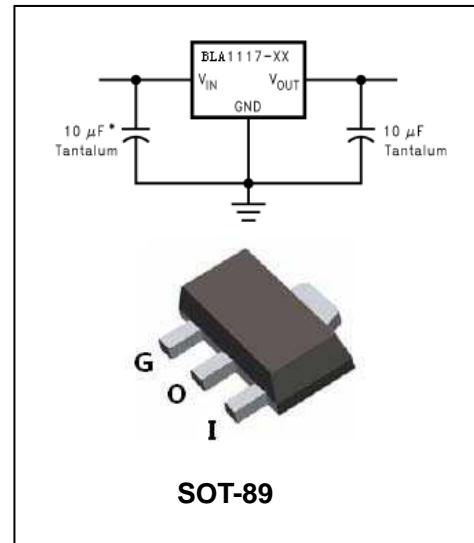


800 mA Low-Dropout Linear Regulator

BLA1117-XX

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).



APPLICATIONS

- Post Regualtor for Switching DC/DC Converter.
- High Efficiency Linear Regulators.
- Battery Charger.
- Battery Powered Instrumentation.

ORDERING INFORMATION

Type No.	Marking	Package Code
BLA1117-ADJ	1117-ADJ	SOT-89
BLA1117-1.5	1117-1.5	SOT-89
BLA1117-1.8	1117-1.8	SOT-89
BLA1117-2.5	1117-2.5	SOT-89
BLA1117-2.85	1117-2.85	SOT-89
BLA1117-3.3	1117-3.3	SOT-89
BLA1117-5.0	1117-5.0	SOT-89

MAXIMUM RATING operating temperature range applies unless otherwise specified

Symbol	Parameter	Value	Units
V_I	Input voltage	20	V
I_{CM}	Maximum output current	800	mA
P_D	Power dissipation	500	mW
T_j, T_{stg}	Storage temperature range	-65 to +150	°C
$R_{\theta JC}$	Thermal Resistance Junction-case	25	°C/W
$R_{\theta JL}$	Thermal Resistance Junction-lead	11.5	°C/W

800 mA Low-Dropout Linear Regulator

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ELECTRICAL CHARACTERISTICS

Typicals and limits appearing in normal type apply for $T_J=25^\circ\text{C}$. Limits appearing in Boldface type apply over the entire junction temperature range for operation, 0°C to 125°C

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Reference Voltage	V_{REF}	BLA1117-ADJ $I_{OUT}=10\text{mA}, V_{IN}-V_{OUT}=2\text{V}, T_J=25^\circ\text{C}$	1.238	1.250	1.262	V
		$10\text{mA} \leq I_{OUT} \leq 800\text{mA}, 1.4\text{V} \leq V_{IN}-V_{OUT} \leq 10\text{V}$	1.225	1.250	1.270	
Output Voltage	V_{OUT}	BLA1117-1.5 $I_{OUT}=10\text{mA}, V_{IN}=3.5\text{V}, T_J=25^\circ\text{C}$	1.485	1.5	1.515	V
		$10\text{mA} \leq I_{OUT} \leq 800\text{mA}, 3.0\text{V} \leq V_{IN} \leq 10\text{V}$	1.470	1.5	1.530	
		BLA1117-1.8 $I_{OUT}=10\text{mA}, V_{IN}=3.8\text{V}, T_J=25^\circ\text{C}$	1.782	1.800	1.818	V
		$0\text{mA} \leq I_{OUT} \leq 800\text{mA}, 3.2\text{V} \leq V_{IN} \leq 10\text{V}$	1.746	1.800	1.854	
		BLA1117-2.5 $I_{OUT}=10\text{mA}, V_{IN}=4.5\text{V}, T_J=25^\circ\text{C}$	2.475	2.500	2.525	V
		$0\text{mA} \leq I_{OUT} \leq 800\text{mA}, 3.9\text{V} \leq V_{IN} \leq 10\text{V}$	2.450	2.500	2.550	
		BLA1117-2.85 $I_{OUT}=10\text{mA}, V_{IN}=4.85\text{V}, T_J=25^\circ\text{C}$	2.82	2.85	2.88	V
		$0\text{mA} \leq I_{OUT} \leq 800\text{mA}, 4.25\text{V} \leq V_{IN} \leq 10\text{V}$	2.79	2.85	2.91	
		$0\text{mA} \leq I_{OUT} \leq 800\text{mA}, V_{IN}=4.1\text{V}$	2.79	2.85	2.91	
		BLA1117-3.3 $I_{OUT}=10\text{mA}, V_{IN}=5\text{V}, T_J=25^\circ\text{C}$	3.267	3.3	3.333	V
		$0\text{mA} \leq I_{OUT} \leq 800\text{mA}, 4.75\text{V} \leq V_{IN} \leq 10\text{V}$	3.235	3.3	3.365	
		BLA1117-5.0 $I_{OUT}=10\text{mA}, V_{IN}=7\text{V}, T_J=25^\circ\text{C}$	4.95	5.0	5.05	V
$0\text{mA} \leq I_{OUT} \leq 800\text{mA}, 6.5\text{V} \leq V_{IN} \leq 12\text{V}$	4.9	5.0	5.1			
Line regulation	ΔV_{OUT}	BLA1117-ADJ $I_{OUT}=10\text{mA}, 1.5\text{V} \leq V_{IN}-V_{OUT} \leq 13.75\text{V}$		0.035	0.2	%
		BLA1117-1.5 $I_{OUT}=10\text{mA}, 1.5\text{V} \leq V_{IN}-V_{OUT} \leq 10\text{V}$		1	6	mV
		BLA1117-1.8 $I_{OUT}=10\text{mA}, 3.2\text{V} \leq V_{IN}-V_{OUT} \leq 10\text{V}$		1	6	mV

800 mA Low-Dropout Linear Regulator

BLA1117-XX

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Line regulation	ΔV_{OUT}	BLA1117-2.5 $I_{OUT}=10\text{mA}, 3.9\text{V} \leq V_{IN}-V_{OUT} \leq 10\text{V}$		1	6	mV
		BLA1117-2.85 $I_{OUT}=10\text{mA}, 4.25\text{V} \leq V_{IN}-V_{OUT} \leq 10\text{V}$		1	6	mV
		BLA1117-3.3 $I_{OUT}=10\text{mA}, 4.75\text{V} \leq V_{IN}-V_{OUT} \leq 15\text{V}$		1	6	mV
		BLA1117-5.0 $I_{OUT}=10\text{mA}, 6.5\text{V} \leq V_{IN}-V_{OUT} \leq 15\text{V}$		1	10	mV
Load regulation	ΔV_{OUT}	BLA1117-ADJ $V_{IN}-V_{OUT}=3\text{V}, 10 \leq I_{OUT} \leq 800\text{mA}$		0.2	0.4	%
		BLA1117-1.5 $V_{IN}-V_{OUT}=2\text{V}, 10 \leq I_{OUT} \leq 800\text{mA}$		1	10	mV
		BLA1117-1.8 $V_{IN}=3.2\text{V}, 0 \leq I_{OUT} \leq 800\text{mA}$		1	10	mV
		BLA1117-2.5 $V_{IN}=3.9\text{V}, 0 \leq I_{OUT} \leq 800\text{mA}$		1	10	mV
		BLA1117-2.85 $V_{IN}=4.25\text{V}, 0 \leq I_{OUT} \leq 800\text{mA}$		1	10	mV
		BLA1117-3.3 $V_{IN}=4.75\text{V}, 0 \leq I_{OUT} \leq 800\text{mA}$		1	10	mV
		BLA1117-5.0 $V_{IN}=6.5\text{V}, 0 \leq I_{OUT} \leq 800\text{mA}$		1	15	mV
Dropout Voltage	$V_{IN}-V_{OUT}$	$I_{OUT}=100\text{mA}$ $I_{OUT}=500\text{mA}$ $I_{OUT}=800\text{mA}$		1.1 1.15 1.2	1.2 1.25 1.3	V
Current Limit		$V_{IN}-V_{OUT}=5\text{V}, T_J=25^\circ\text{C}$	800	1200	1500	mA
Minimum Load Current	I_{LIMIT}	BLA1117-ADJ $V_{IN}=15\text{V}$		1.7	5	mA

800 mA Low-Dropout Linear Regulator

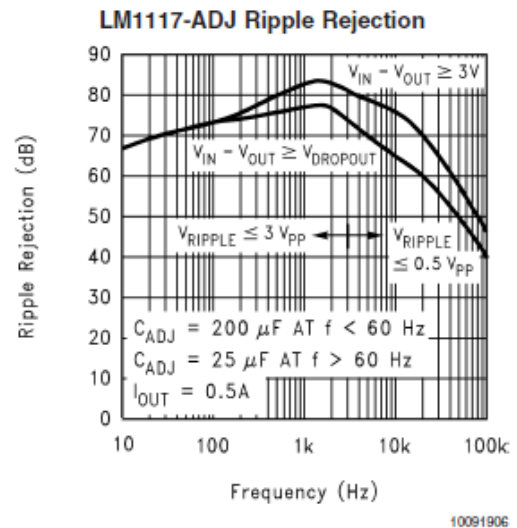
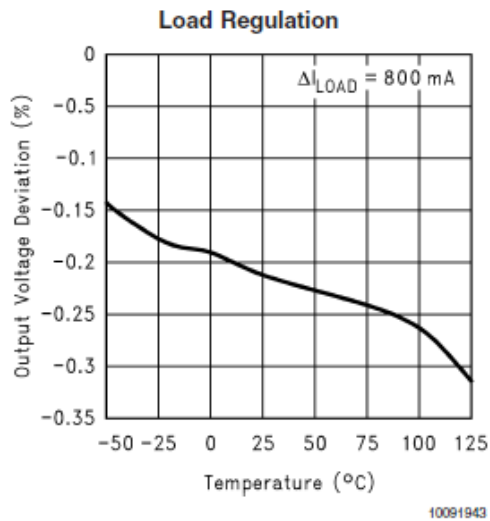
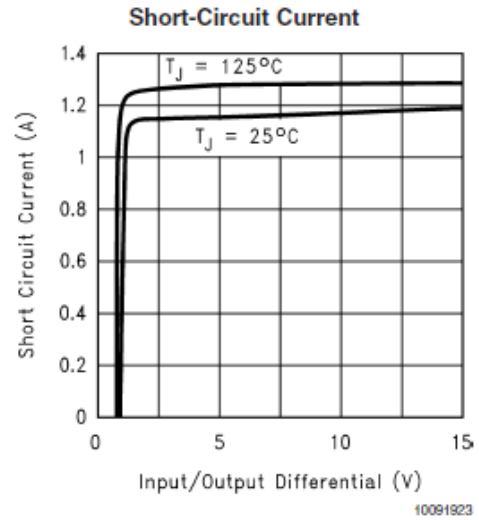
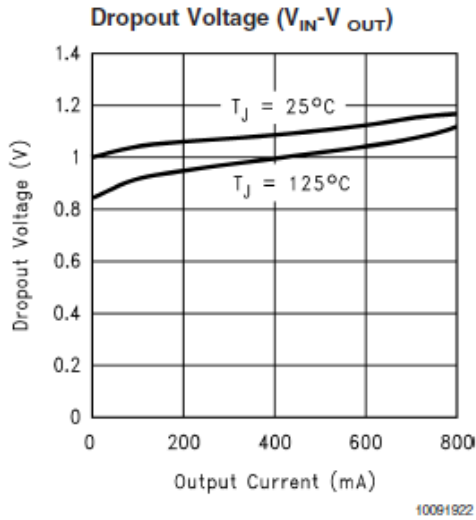
BLA1117-XX

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Quiescent Currnt		BLA1117-1.5 $V_{IN}-V_{OUT}=2V$		5	10	mA
		BLA1117-1.8 $V_{IN} \leq 15V$		5	10	mA
		BLA1117-2.5 $V_{IN} \leq 15V$		5	10	mA
		BLA1117-2.85 $V_{IN} \leq 10V$		5	10	mA
		BLA1117-3.3 $V_{IN} \leq 15V$		5	10	mA
		BLA1117-5.0 $V_{IN} \leq 15V$		5	10	mA
Thermal Regulation		$T_A=25^\circ C, 30ma$ 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		$10 \leq I_{OUT} \leq 800mA$		0.2	5	uA

800 mA Low-Dropout Linear Regulator

BLA1117-XX

TYPICAL CHARACTERISTICS @ $T_a=25^\circ\text{C}$ unless otherwise specified



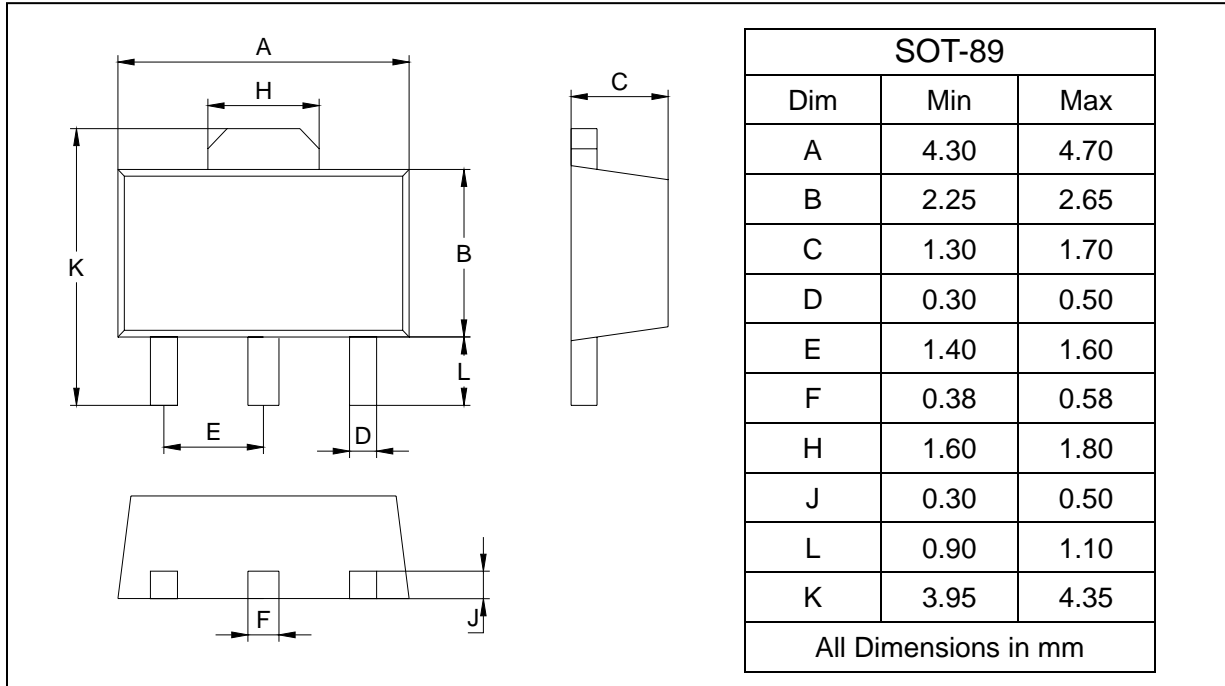
800 mA Low-Dropout Linear Regulator

BLA1117-XX

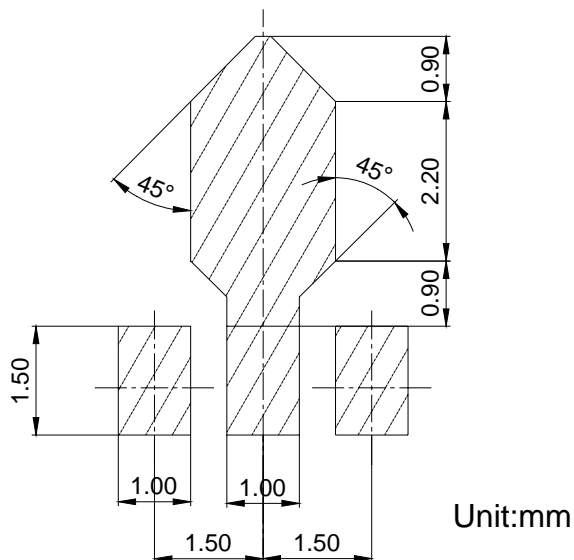
PACKAGE OUTLINE

Plastic surface mounted package

SOT-89



SOLDERING FOOTPRINT



PACKAGE INFORMATION

Device	Package	Shipping
BLA1117-XX	SOT-89	1000/Tape&Reel