

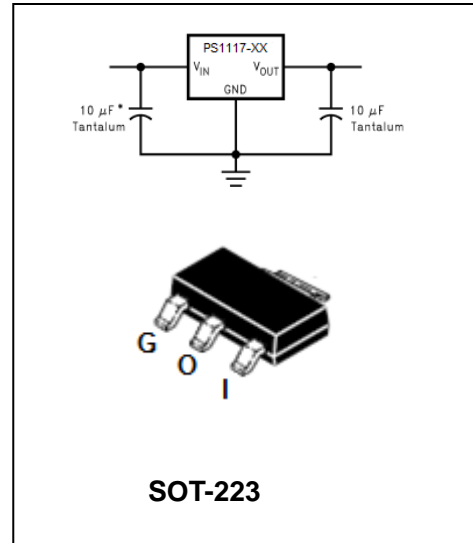
## 800 mA Low-Dropout Linear Regulator

## PS1117-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)

HF



### APPLICATIONS

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

### ORDERING INFORMATION

Type No.	Marking	Package Code
PS1117-ADJ	1117-ADJ	SOT-223
PS1117-1.5	1117-1.5	SOT-223
PS1117-1.8	1117-1.8	SOT-223
PS1117-2.5	1117-2.5	SOT-223
PS1117-2.85	1117-2.85	SOT-223
PS1117-3.3	1117-3.3	SOT-223
PS1117-5.0	1117-5.0	SOT-223

### 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	1.1	W
$R_{\theta JA}$	Thermal Resistance Junction-Air	90	$^{\circ}\text{C}/\text{W}$
$R_{\theta JC}$	Thermal Resistance Junction-Case	15	$^{\circ}\text{C}/\text{W}$
$T_J$	Operating Junction Temperature Range	0 to +125	$^{\circ}\text{C}$
$T_{STG}$	Storage Temperature Range	-65 to +150	$^{\circ}\text{C}$

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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,  $0^\circ\text{C}$  to  $125^\circ\text{C}$

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Reference Voltage	$V_{REF}$	PS1117-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	$V_{OUT}$	PS1117-1.5 $I_{OUT}=10\text{mA}, V_{IN}=3.5\text{V}, T_J=25^\circ\text{C}$	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	
		PS1117-1.8 $I_{OUT}=10\text{mA}, V_{IN}=3.8\text{V}, T_J=25^\circ\text{C}$	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	
		PS1117-2.5 $I_{OUT}=10\text{mA}, V_{IN}=4.5\text{V}, T_J=25^\circ\text{C}$	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	
		PS1117-2.85 $I_{OUT}=10\text{mA}, V_{IN}=4.85\text{V}, T_J=25^\circ\text{C}$	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	
		PS1117-3.3 $I_{OUT}=10\text{mA}, V_{IN}=5\text{V}, T_J=25^\circ\text{C}$	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	
		PS1117-5.0 $I_{OUT}=10\text{mA}, V_{IN}=7\text{V}, T_J=25^\circ\text{C}$	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	$\Delta V_{OUT}$	PS1117-ADJ $I_{OUT}=10\text{mA}, 1.5\text{V} \leq V_{IN}-V_{OUT} \leq 13.75\text{V}$		0.035	0.2	%
		PS1117-1.5 $I_{OUT}=10\text{mA}, 1.5\text{V} \leq V_{IN}-V_{OUT} \leq 10\text{V}$		1	6	mV
		PS1117-1.8 $I_{OUT}=10\text{mA}, 3.2\text{V} \leq V_{IN}-V_{OUT} \leq 10\text{V}$		1	6	mV

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Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Line regulation	$\Delta V_{OUT}$	PS1117-2.5 $I_{OUT}=10\text{mA}, 3.9\text{V} \leq V_{IN}-V_{OUT} \leq 10\text{V}$		1	6	mV
		PS1117-2.85 $I_{OUT}=10\text{mA}, 4.25\text{V} \leq V_{IN}-V_{OUT} \leq 10\text{V}$		1	6	mV
		PS1117-3.3 $I_{OUT}=10\text{mA}, 4.75\text{V} \leq V_{IN}-V_{OUT} \leq 15\text{V}$		1	6	mV
		PS1117-5.0 $I_{OUT}=10\text{mA}, 6.5\text{V} \leq V_{IN}-V_{OUT} \leq 15\text{V}$		1	10	mV
Load regulation	$\Delta V_{OUT}$	PS1117-ADJ $V_{IN}-V_{OUT}=3\text{V}, 10 \leq I_{OUT} \leq 800\text{mA}$		0.2	0.4	%
		PS1117-1.5 $V_{IN}-V_{OUT}=2\text{V}, 10 \leq I_{OUT} \leq 800\text{mA}$		1	10	mV
		PS1117-1.8 $V_{IN}=3.2\text{V}, 0 \leq I_{OUT} \leq 800\text{mA}$		1	10	mV
		PS1117-2.5 $V_{IN}=3.9\text{V}, 0 \leq I_{OUT} \leq 800\text{mA}$		1	10	mV
		PS1117-2.85 $V_{IN}=4.25\text{V}, 0 \leq I_{OUT} \leq 800\text{mA}$		1	10	mV
		PS1117-3.3 $V_{IN}=4.75\text{V}, 0 \leq I_{OUT} \leq 800\text{mA}$		1	10	mV
		PS1117-5.0 $V_{IN}=6.5\text{V}, 0 \leq I_{OUT} \leq 800\text{mA}$		1	15	mV
Dropout Voltage	$V_{IN}-V_{OUT}$	$I_{OUT}=100\text{mA}$		1.1	1.25	V
		$I_{OUT}=500\text{mA}$		1.15	1.3	
		$I_{OUT}=800\text{mA}$		1.2	1.4	
Current Limit		$V_{IN}-V_{OUT}=1.5\text{V}$	1	1.5	2	A
Minimum Load Current	$I_{LIMIT}$	PS1117-ADJ $V_{IN}=15\text{V}$		1.7	5	mA

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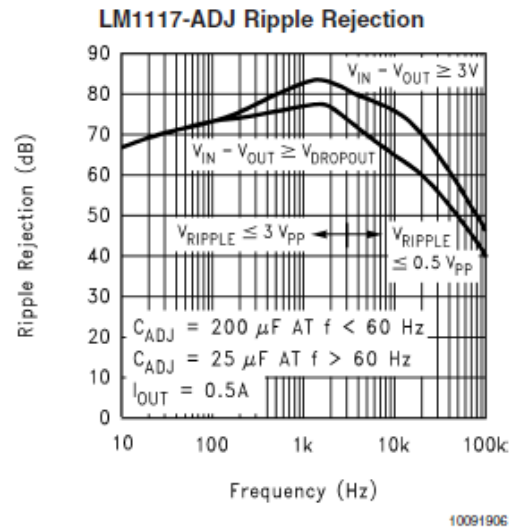
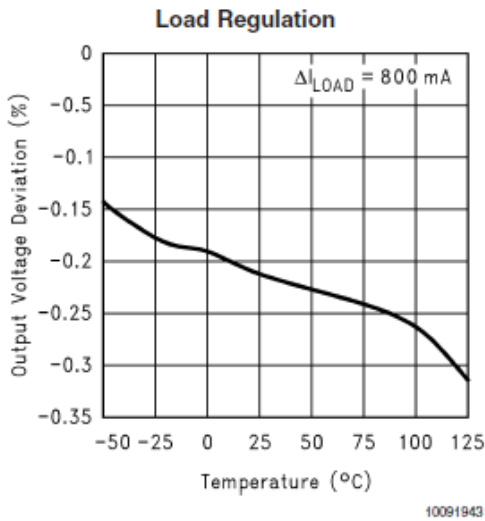
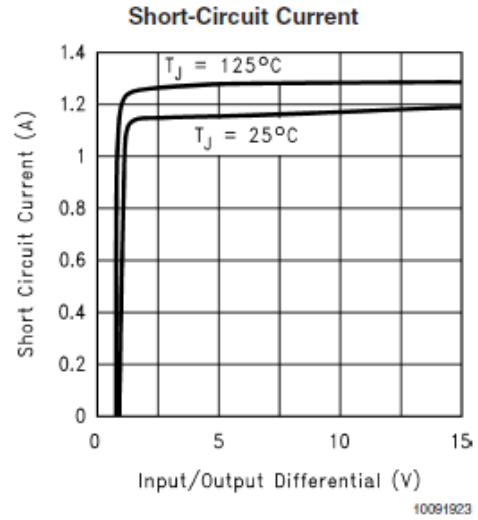
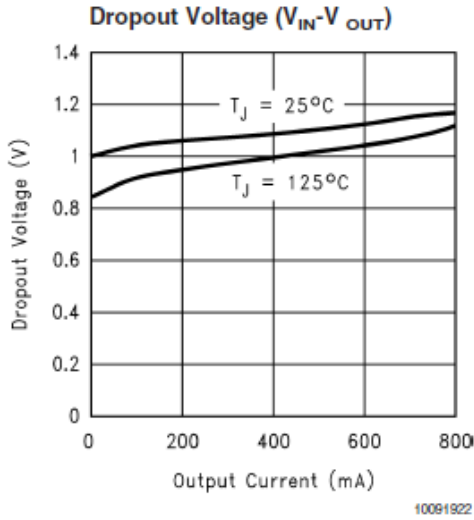
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Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Quiescent Currnt		PS1117-1.5 $V_{IN}-V_{OUT}=2V$		5	10	mA
		PS1117-1.8 $V_{IN}\leq 15V$		5	10	mA
		PS1117-2.5 $V_{IN}\leq 15V$		5	10	mA
		PS1117-2.85 $V_{IN}\leq 10V$		5	10	mA
		PS1117-3.3 $V_{IN}\leq 15V$		5	10	mA
		PS1117-5.0 $V_{IN}\leq 15V$		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	$\mu A$
Ajust Pin Current Change		$10\leq I_{OUT}\leq 800mA$		0.2	5	$\mu A$

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



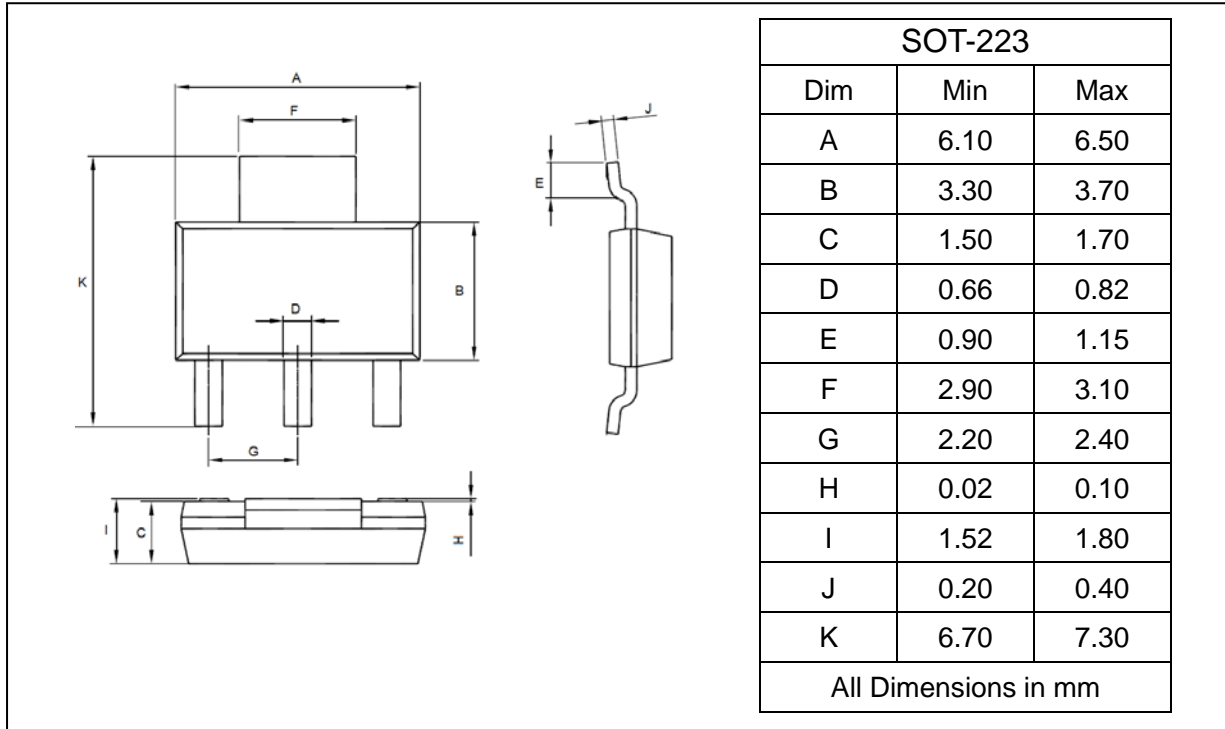
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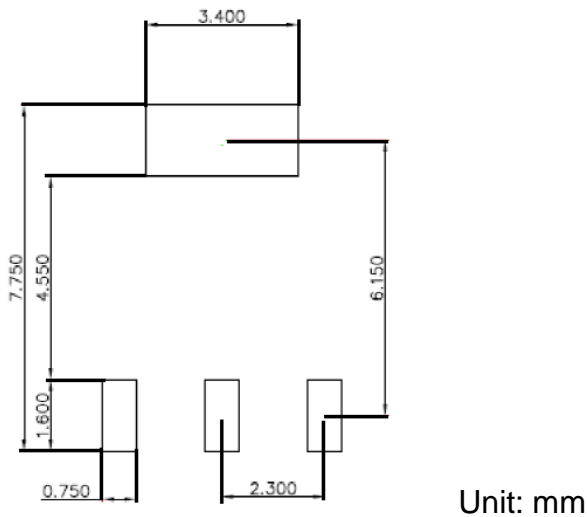
### PACKAGE OUTLINE

Plastic surface mounted package

SOT-223



### SOLDERING FOOTPRINT



### PACKAGE INFORMATION

Device	Package	Shipping
PS1117-XX	SOT-223	4000pcs / Tape & Reel