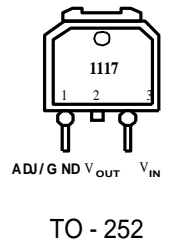
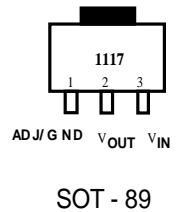
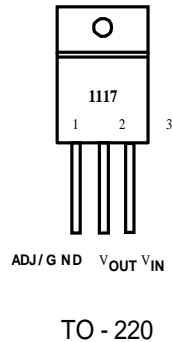


Description

The 1117 series of positive adjustable and fixed regulators are designed to provide 1A with high efficiency. All internal circuitry is designed to operate down to 1.3V input to output differential. On-chip Trimming the reference voltage to 1%.

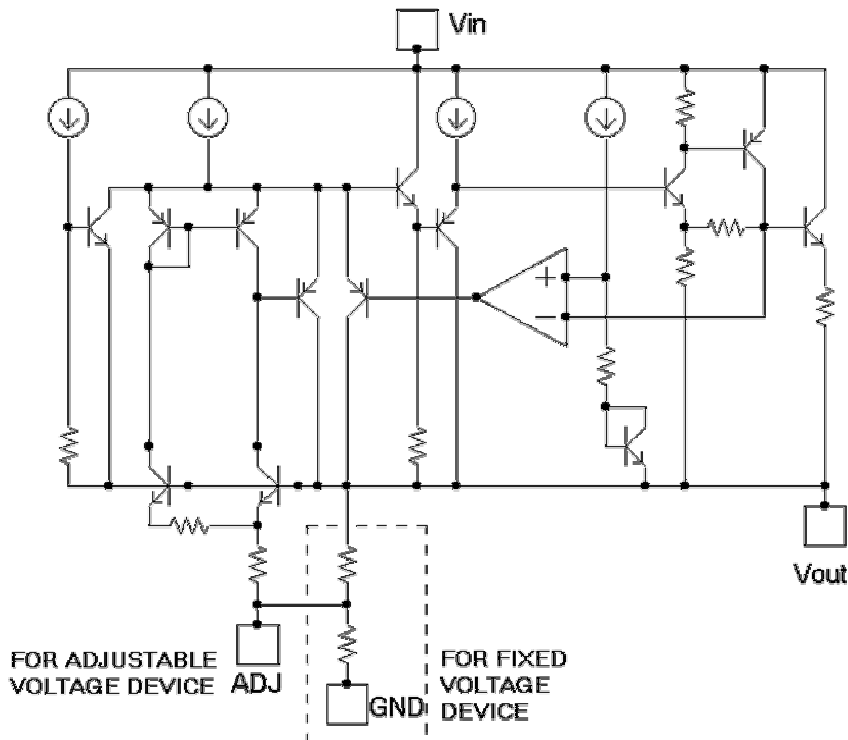
Features

- Dropout voltage 1.2V
- Line regulation typically at 0.2%
- Load regulation typically at 0.4% max
- Current limiting and Thermal protection
- Adjustable output voltage or fixed 1.25V, 1.5V, 1.8V, 2.5V, 2.85V, 3.3V,
- Standard 3-pin power package
- Maximum input $-15V$
- Operating junction temperature -0 to $+150^{\circ}C$



Internal Block Diagram

Package



Absolute Maximum Ratings

- Power Dissipation 12W
- Input Voltage 12V-($V_O=1.5V, 1.8V, 2.5V, 3.3V$)
15V-($V_O=5.0V$ adjustable)
- Operating Junction Temperature Range 0 to +150°C
- Storage Temperature - 65°C to +150

Typical Applications

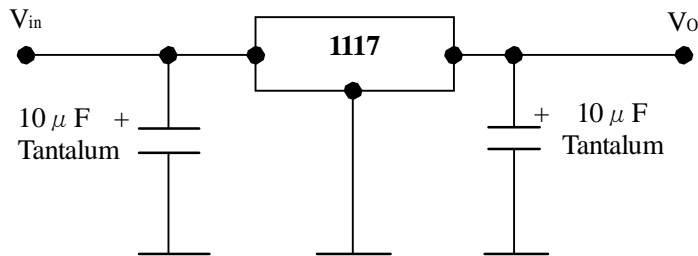


FIGURE 1. Fixed-Voltage Model –Basic Connections.

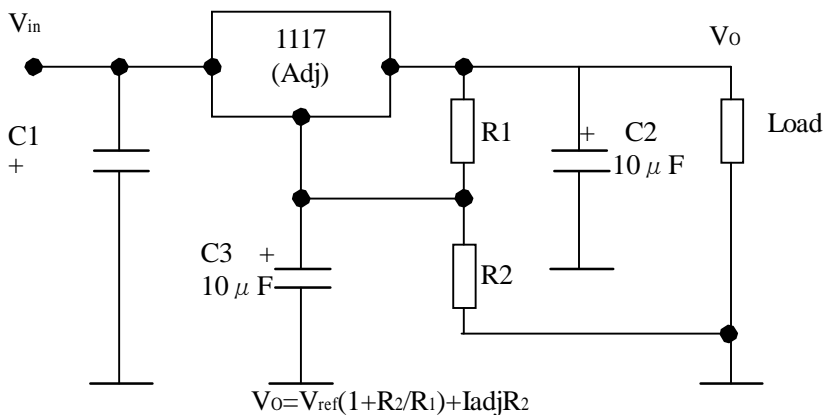


FIGURE 2. Adjustable-Voltage Model-Basic Connections

Electrical Characteristics

 ($T_j=+25^{\circ}\text{C}$, unless otherwise noted)

PARAMETER	CONDITIONS	MIN	TYP	MAX	
UNIS					
1117(Adjustable)	$I_o=10\text{mA}, V_{in}-V_o=2\text{V}$	1.238	1.250	1.262	V
	$I_o=10\text{mA to }1\text{A}, V_{in}-V_o=1.5\text{ to }13.75\text{V}$	1.232	1.250	1.268	V
1117-1.5	$I_o=10\text{mA}, V_{in}=3.5\text{V}$	1.485	1.500	1.515	V
	$I_o=0\text{ to }1\text{A}, V_{in}=3.0\text{V to }12\text{V}$	1.477	1.500	1.522	V
1117-1.8	$I_o=10\text{mA}, V_{in}=3.8\text{V}$	1.782	1.800	1.818	V
	$I_o=0\text{ to }1\text{A}, V_{in}=3.3\text{V to }12\text{V}$	1.773	1.800	1.827	V
1117-2.5	$I_o=10\text{mA}, V_{in}=4.5\text{V}$	2.475	2.500	2.525	V
	$I_o=0\text{ to }1\text{A}, V_{in}=4.0\text{V to }12\text{V}$	2.462	2.500	2.538	V
1117-2.85	$I_o=10\text{mA}, V_{in}=4.85\text{V}$	2.820	2.850	2.880	V
	$I_o=0\text{ to }1\text{A}, V_{in}=4.4\text{V to }12\text{V}$	2.807	2.850	2.893	V
1117-3.3	$I_o=10\text{mA}, V_{in}=5.3\text{V}$	3.270	3.300	3.330	V
	$I_o=0\text{ to }1\text{A}, V_{in}=4.8\text{V to }12\text{V}$	3.250	3.300	3.350	V
1117-5.0	$I_o=10\text{mA}, V_{in}=7\text{V}$	4.950	5.000	5.050	V
	$I_o=0\text{ to }1\text{A}, V_{in}=6.5\text{V to }15\text{V}$	4.925	5.000	5.075	V
OUTPUT VOLTAGE	$T_j=0^{\circ}\text{C to }+125^{\circ}\text{C}$				
1117(Adjustable)	$I_o=10\text{mA to }1\text{A}, V_{in}-V_o=1.5\text{ to }13.75\text{V}$	1.225	1.250	1.280	V
1117-1.5	$I_o=0\text{ to }1\text{A}, V_{in}=3.0\text{V to }12\text{V}$	1.470	1.500	1.530	V
1117-1.8	$I_o=0\text{ to }1\text{A}, V_{in}=3.3\text{V to }12\text{V}$	1.764	1.800	1.836	V
1117-2.5	$I_o=0\text{ to }1\text{A}, V_{in}=4.0\text{V to }12\text{V}$	2.450	2.500	2.550	V
1117-2.85	$I_o=0\text{ to }1\text{A}, V_{in}=4.4\text{V to }12\text{V}$	2.790	2.850	2.910	V
1117-3.3	$I_o=0\text{ to }1\text{A}, V_{in}=4.8\text{V to }12\text{V}$	3.240	3.300	3.360	V
1117-5.0	$I_o=0\text{ to }1\text{A}, V_{in}=6.5\text{V to }15\text{V}$	4.900	5.000	5.100	V
LINE REGULATION					
117(Adjustable)	$I_o=10\text{mA}, V_{in}-V_o=1.5\text{ to }13.75\text{V}$		0.1	0.2	%
1117-1.5	$I_o=0, V_{in}=3.0\text{V to }12\text{V}$		2	7	mV
1117-1.8	$I_o=0, V_{in}=3.3\text{V to }12\text{V}$		2	7	mV
1117-2.5	$I_o=0, V_{in}=4.0\text{V to }12\text{V}$		2	7	mV
1117-2.85	$I_o=0, V_{in}=4.4\text{V to }12\text{V}$		2	7	mV
1117-3.3	$I_o=0, V_{in}=4.8\text{V to }12\text{V}$		3	7	mV
1117-5.0	$I_o=0, V_{in}=6.5\text{V to }15\text{V}$		4	10	mV
LOAD REGULATION					
1117(Adjustable) ⁽¹⁾	$I_o=10\text{mA to }1\text{A}, V_{in}-V_o=2\text{V}$		0.2	0.4	%
1117-1.5	$I_o=1\text{ to }1\text{A}, V_{in}=3.5\text{V}$		3	10	mV
1117-1.8	$I_o=1\text{ to }1\text{A}, V_{in}=3.8\text{V}$		3	10	mV
1117-2.5	$I_o=1\text{ to }1\text{A}, V_{in}=4.5\text{V}$		3	10	mV
1117-2.85	$I_o=1\text{ to }1\text{A}, V_{in}=4.85\text{V}$		3	10	mV
1117-3.3	$I_o=1\text{ to }1\text{A}, V_{in}=5.3\text{V}$		4	12	mV
1117-5.0	$I_o=1\text{ to }1\text{A}, V_{in}=7.0\text{V}$		5	15	mV

DROPOUT VOLTAGE ⁽²⁾ All Models	$I_o=800\text{mA}$ $I_o=1\text{A}$ $I_o=1\text{A}(T_i=0^\circ\text{C to }+125)$		1.10 1.2 1.2	1.20 1.30 1.48	V V V
CURRENT LIMIT	$V_{in} - V_o=5\text{V}$	1000	1250	1600	mA
MINIMUM LOAD CURRENT Adjustable	$V_{in}-V_o=12\text{V}$		5	10	mA
QUIESCENT CURRENT	$V_{in} - V_o=5\text{V}$		5.2	10	MA
Adjust PIN Current vs Load Current, 1117	$I_o=10\text{mA}, V_{in}-V_o=1.5\text{V to }12\text{V}$ $I_o=10\text{mA to }1\text{A}, V_{in}-V_o=1.5\text{V to }12\text{V}$		50 0.5	120 5	uA uA
TEMPERATURE DRIFT	$T_j=0^\circ\text{C to }+125^\circ\text{C}$		0.5		%

Ordering Information

ORDERING NUMBER	PACKAGE	MARKING
1117	TO-220 / SOT-89 / TO-252	ET1117

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