

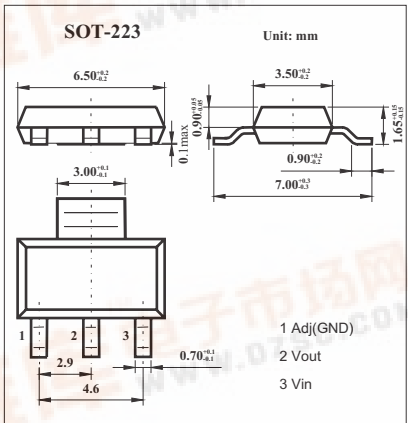
SMD Type

Integrate Circuit

1A Low Dropout Positive Adjustable or Fixed-Mode Regulator AMS1117

■ Features

- 1.4V maximum dropout at full load current
- Fast transient response
- Output current limiting
- Built-in thermal shutdown
- Good noise rejection
- 3-Terminal Adjustable or Fixed 1.5V, 1.8V, 1.9V, 2.5V, 3.3V, 5.0V

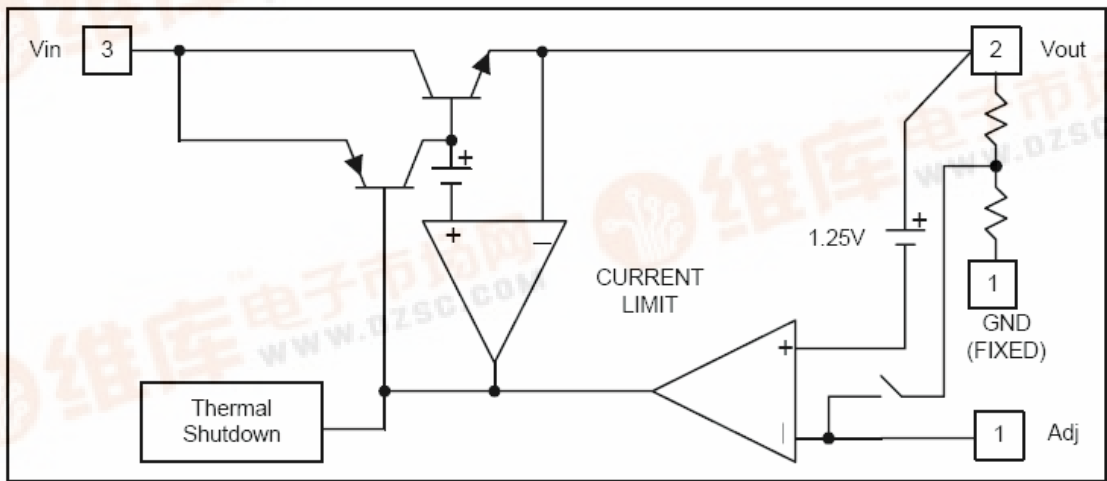


■ Absolute Maximum Ratings Ta = 25°C

Parameter	Symbol	Rating	Unit
Maximum Input Voltage	V _{in}	18	V
Power Dissipation	P _D	Internally Limited	
Thermal Resistance Junction-to-Ambient	θ _{JA}	117	°C/W
Thermal Resistance Junction-to-Case *	θ _{JC}	15	°C/W
Operating Junction Temperature Range	T _{OP}	0 to +150	°C
Storage Temperature	T _{ST}	-65 to +150	°C

* Control Circuitry/Power Transistor

■ Block Diagram



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■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter		Testconditions	Min	Typ	Max	Unit
Reference Voltage	AMS1117-ADJ	$T_J = 25^\circ\text{C}, (V_{IN} - V_{OUT}) = 1.5\text{V}, I_O = 10\text{mA}$	1.225	1.250	1.275	V
Output Voltage	AMS1117-1.5	$I_{OUT} = 10\text{mA}, T_J = 25^\circ\text{C}, 3\text{V} \leq V_{IN} \leq 12\text{V}$	1.470	1.500	1.530	V
	AMS1117-1.8	$I_{OUT} = 10\text{mA}, T_J = 25^\circ\text{C}, 3.3\text{V} \leq V_{IN} \leq 12\text{V}$	1.764	1.800	1.836	V
	AMS1117-1.9	$I_{OUT} = 10\text{mA}, T_J = 25^\circ\text{C}, 3.3\text{V} \leq V_{IN} \leq 12\text{V}$	1.862	1.900	1.938	V
	AMS1117-2.5	$I_{OUT} = 10\text{mA}, T_J = 25^\circ\text{C}, 4\text{V} \leq V_{IN} \leq 12\text{V}$	2.450	2.500	2.550	V
	AMS1117-3.3	$I_{OUT} = 10\text{mA}, T_J = 25^\circ\text{C}, 4.8\text{V} \leq V_{IN} \leq 12\text{V}$	3.235	3.300	3.365	V
	AMS1117-5.0	$I_{OUT} = 10\text{mA}, T_J = 25^\circ\text{C}, 6.5\text{V} \leq V_{IN} \leq 12\text{V}$	4.900	5.000	5.100	V
Line Regulation	AMS1117-XXX	$I_O = 10\text{mA}, V_{OUT} + 1.5\text{V} < V_{IN} < 12\text{V}, T_J = 25^\circ\text{C}$			0.2	%
Load Regulation	AMS1117-ADJ	$V_{IN} = 3.3\text{V}, V_{adj} = 0, 0\text{mA} < I_O < 1\text{A}, T_J = 25^\circ\text{C}$			1	%
	AMS1117-1.5	$V_{IN} = 3\text{V}, 0\text{mA} < I_O < 1\text{A}, T_J = 25^\circ\text{C}$		12	15	mV
	AMS1117-1.8	$V_{IN} = 3.3\text{V}, 0\text{mA} < I_O < 1\text{A}, T_J = 25^\circ\text{C}$		15	18	mV
	AMS1117-1.9	$V_{IN} = 3.3\text{V}, 0\text{mA} < I_O < 1\text{A}, T_J = 25^\circ\text{C}$		16	19	mV
	AMS1117-2.5	$V_{IN} = 4\text{V}, 0\text{mA} < I_O < 1\text{A}, T_J = 25^\circ\text{C}$		20	25	mV
	AMS1117-3.3	$V_{IN} = 5\text{V}, 0\text{mA} < I_O < 1\text{A}, T_J = 25^\circ\text{C}$		26	33	mV
	AMS1117-5.0	$V_{IN} = 8\text{V}, 0\text{mA} < I_O < 1\text{A}, T_J = 25^\circ\text{C}$		40	50	mV
Dropout Voltage ($V_{IN} - V_{OUT}$)	AMS1117-XXX	$I_{OUT} = 1\text{A}, \Delta V_{OUT} = 0.1\% V_{OUT}$		1.3	1.4	V
Current Limit	AMS1117-XXX	$(V_{IN} - V_{OUT}) = 5\text{V}$	1.1			A
Minimum Load Current	AMS1117-XXX	$0^\circ\text{C} \leq T_J \leq 125^\circ\text{C}$		5	10	mA
Thermal Regulation		$T_A = 25^\circ\text{C}, 30\text{ms pulse}$		0.008	0.04	%/W
Ripple Rejection		$F = 120\text{Hz}, C_{OUT} = 25\mu\text{F Tantalum}, I_{OUT} = 1\text{A}$				
	AMS1117-XXX	$V_{IN} = V_{OUT} + 3\text{V}$		60	70	dB
Temperature Stability		$I_O = 10\text{mA}$		0.5		%

Typical Applications

