

RoHS Compliant Product
A suffix of "-C" specifies halogen free

DESCRIPTION

The SL117A is a low dropout at positive adjustable or fixed-mode regulator with minimum of 1A output current capability. The product is specifically designed to provide well-regulated supply for low voltage IC applications such as high-speed bus termination and low current 3.3V logic supply. SL117A is also well suited for other applications such as VGA cards.

FEATURES

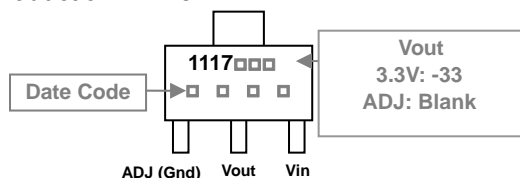
- 1.4V maximum dropout full load current
- Fast transient response
- Output current limiting
- Built-in thermal shutdown
- Good noise rejection

APPLICATIONS

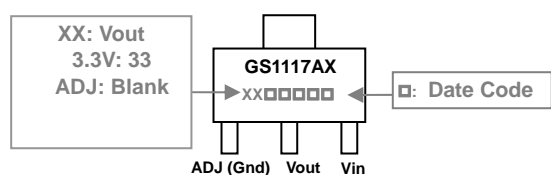
- PC peripheral
- Communication

MARKING

Production A Line



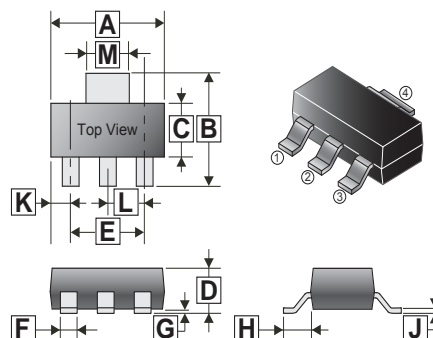
Production B Line



PACKAGE INFORMATION

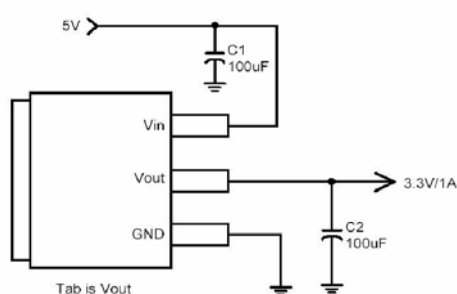
Package	MPQ	Leader Size
SOT-223	2.5K	13' inch

SOT-223

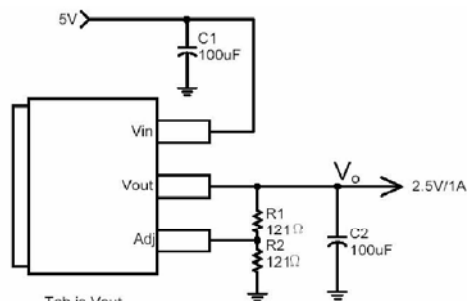


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	6.30	6.70	G	0.02	0.10
B	6.70	7.30	H	1.50	2.00
C	3.30	3.70	J	0.25	0.35
D	1.42	1.90	K	0.85	1.05
E	4.60	REF.	L	2.30	REF.
F	0.60	0.80	M	2.90	3.10

TYPICAL CIRCUIT



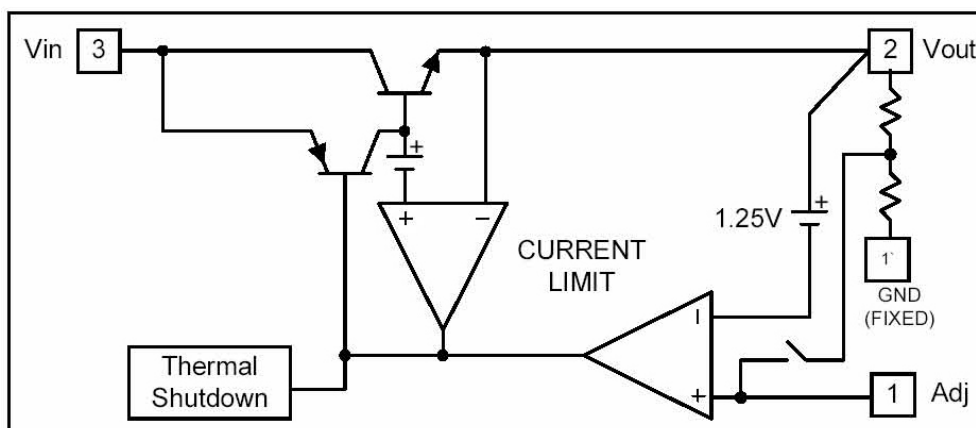
(5V/3.3V fixed output)



(5V/2.5V ADJ output)

Note: $V_o = V_{REF} * (1 + \frac{R_2}{R_1})$

BLOCK DIAGRAM



PIN DESCRIPTIONS

Name	I/O	Pin#	Description
Adj (Gnd)		1	A resistor divider from this pin to the V_{OUT} pin and ground sets the output voltage (Ground only for fixed mode)
V_{OUT}	O	2	The output pin of regulator. A min. of 10µF capacitor must be connected from this pin to ground to insure stability.
V_{IN}	I	3	The input pin of regulator. Typically a large storage capacitor is connected from this pin to ground to insure that the input voltage does not sag below the min. dropout voltage during the load transient response. This pin must always be 1.3V higher than V_{OUT} in order for the device to regulate properly.

ABSOLUTE MAXIMUM RATINGS

Parameter	Symbol	Ratings	Unit
DC Supply Voltage	V_{in}	15	V
Power Dissipation ($T_A = 25^\circ\text{C}$)	P_D	900	mW
Operating, Storage Temperature Range	T_{OPR}, T_{STG}	-40~125, -65~150	$^\circ\text{C}$
Lead Temperature (Soldering, 10 sec)	T_{LEAD}	300	$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS ($V_{OUT}=0$, $T_J=+25\text{ }^\circ\text{C}$ unless otherwise specified)

Parameter	Test Conditions		Min.	Typ.	Max	Unit
Reference Voltage ^{1,2,3}	SL1117A-ADJ	$I_{LOAD} = 10\text{mA}$, $V_{IN} = 2.75\text{V}$	1.238	1.25	1.262	V
		$2.7\text{V} \leq V_{IN} \leq 12\text{V}$, $10\text{mA} \leq I_{LOAD} \leq 1\text{A}$ ⁴	1.225	1.25	1.275	
	SL1117A-3.3	$V_{IN} = 5.8\text{V}$	3.267	3.3	3.333	V
		$V_{IN} = 4.8\text{V}$, $10\text{mA} \leq I_{LOAD} \leq 1\text{A}$ ⁴	3.247	3.3	3.353	
Line Regulation ¹	All	$I_{LOAD} = 10\text{mA}$, $(1.5 + V_{OUT}) \leq V_{IN} \leq 12\text{V}$ ⁴	-	0.04	0.2	%
Load Regulation ¹	All	$V_{IN} = 1.5 + V_{OUT}$, $10\text{mA} \leq I_{LOAD} \leq 1\text{A}$ ⁴	-	0.2	0.4	%
Minimum Load Current	SL1117A-ADJ	$V_{IN} = 5\text{V}$, $V_{ADJ} = 0$	-	3	7	mA
Ground Pin Current	SL1117A-3.3	$V_{IN} = 1.5 + V_{OUT}$, $10\text{mA} \leq I_{LOAD} \leq 1\text{A}$ ⁴	-	7	13	mA
Adjust Pin Current	SL1117A-ADJ	$V_{IN} = 2.65\text{V} \sim 12\text{V}$, $I_{LOAD} = 10\text{mA}$ ⁴	-	55	90	μA
Current Limit	All	$V_{IN} - V_{OUT} = 1.5\text{V}$	1	-	-	A
Ripple Rejection ²	All	$V_{IN} = 1.5 + V_{OUT}$	60	72	-	dB
Dropout Voltage ^{1,3}	All	$I_{LOAD} = 10\text{mA}$	-	1	1.15	V
		$V_{IN} \geq 2.65\text{V}$, $I_{LOAD} = 1\text{A}$	-	1.15	1.3	V
Temperature coefficient	All	$V_{IN} = V_{OUT} = 1.5\text{V}$, $I_{LOAD} = 10\text{mA}$	-	0.005	-	$\%/^\circ\text{C}$
OTP	All		130	150	170	$^\circ\text{C}$

Note:

1. Low duty pulse testing with Kelvin connections required.
2. 120Hz input ripple (CADJ for ADJ=25 μF)
3. ΔV_{OUT} , $\Delta V_{REF} = 1\%$
4. Denotes the specifications which apply over the full temperature range.

CHARACTERISTIC CURVES

