GJ1117A

Description

The GJ1117A 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. GJ1117A is also well suited for other applications such as VGA cards .GJ1117A is guaranteed to have lower than 1.4V dropout at full load current making it ideal to provide well-regulated outputs of 1.25 to 5.0 with 6.4V to 12V input supply.

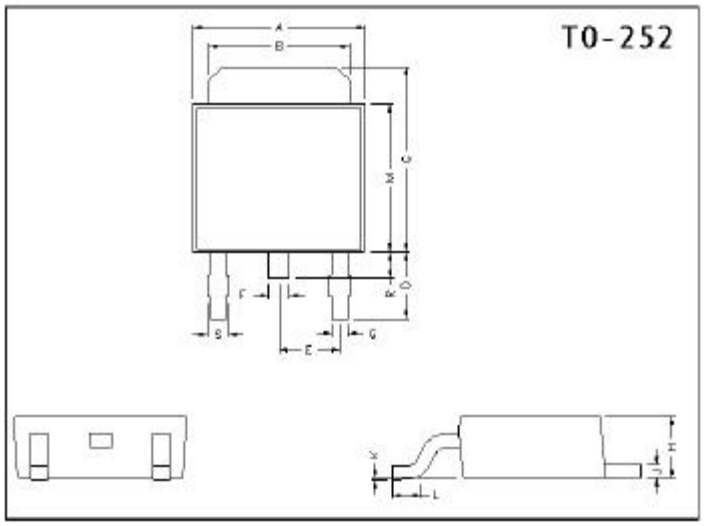
Features

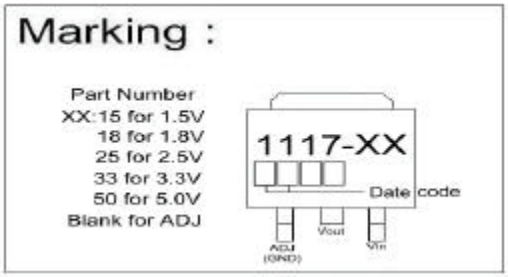
- 1.4Vmaximum dropout full load current
- Fast transient response
- Output current limiting
- Built-in thermal shutdown
- Good noise rejection
- 3-Terminal Adjustable or Fixed 1.5V,1.8V,2.5V,3.3V,5.0V

Applications

- PC peripheral
- Communication

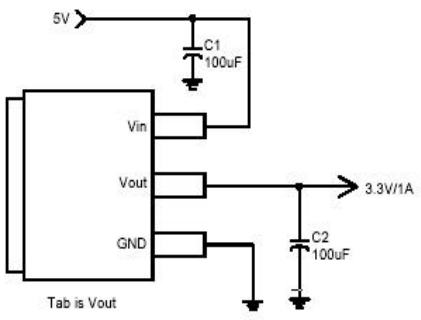
Package Dimensions



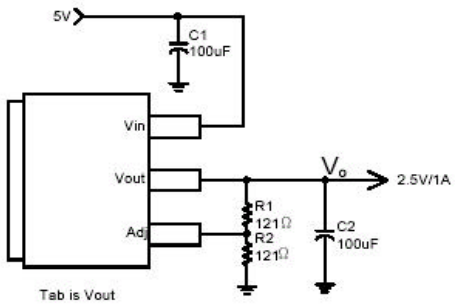


REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	6.40	6.80	G	0.50	0.70
B	5.20	5.50	H	2.20	2.40
C	6.80	7.20	J	0.45	0.55
D	2.20	2.80	K	0	0.15
E	2.30 REF.		L	0.90	1.50
F	0.70	0.90	M	5.40	5.80
S	0.60	0.90	R	0.80	1.20

■ Typical Circuit



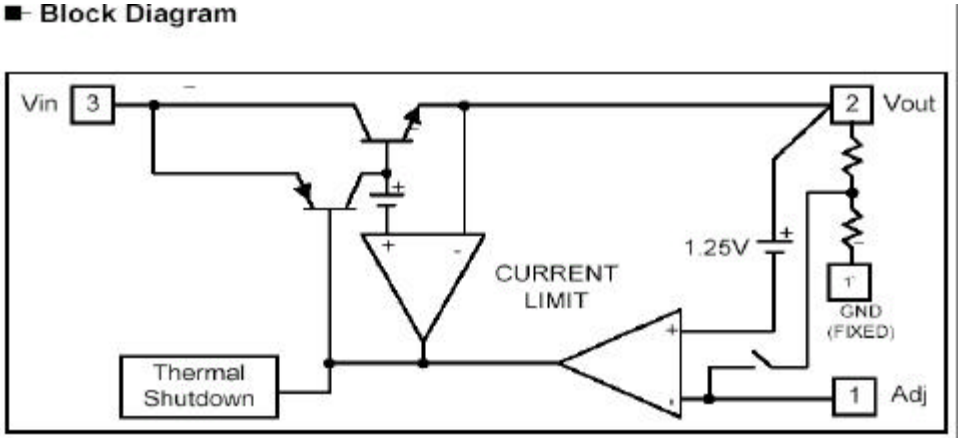
(5V/3.3V fixed output)



(5V/2.5V ADJ output)

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

■ Block Diagram



Pin Descriptions

Name	I/O	PIN#	FUNCTION
Adj(GND)	I	1	A resistor divider from this pin to the Vout pin and ground sets the output voltage (Ground only for fixed mode)
Vout	O	2	The output of the regulator. A minimum of 10 uF capacitor must be connected from this pin to ground to insure stability.
Vin	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 minimum dropout voltage during the load transient response .This pin must always be 1.3V higher than Vout in order for the device to regulate properly.

Absolute Maximum Ratings

Symbol	Parameter	Ratings	Unit
Vin	DC Supply Voltage	-0.3 to 12	V
PD	Power Dissipation	Internally Limited	
TST	Storage Temperature	-65 to + 125	?
TOP	Operating Junction Temperature Range	0 ~ + 150	?

Electrical Characteristics

PARAMETER	CONDITIONS(Notes)		MIN	TYP	MAX	UNIT
Reference Voltage	GJ1117AADJ	Io=10mA,Tj=25? ,(Vin-Vout)=1.5V	1.225	1.250	1.275	V
Ouptput Voltage	GJ1117A-1.5	Io=10mA,Tj=25? ,3V=Vin=12V	1.470	1.500	1.530	V
	GJ1117A-1.8	Io=10mA,Tj=25? ,3.3V=Vin=12V	1.764	1.800	1.836	V
	GJ1117A-2.5	Io=10mA,Tj=25? ,4V=Vin=12V	2.450	2.500	2.550	V
	GJ1117A-3.3	Io=10mA,Tj=25? ,4.8V=Vin=12V	3.235	3.300	3.365	V
	GJ1117A-5.0	Io=10mA,Tj=25? ,6.5V=Vin=12V	4.900	5.000	5.100	V
Line Regulation	GJ1117A-XXX	Io=10mA,Vout+1.5V<Vin<12V,Tj=25?			0.2	%
Load Regulation	GJ1117AADJ	Vin=3.3V,Vadj=0,0mA<Io<1A,Tj=25? (Note 1,2)			1	%
	GJ1117A-1.5	Vin=3V,0mA<Io<1A,TJ=25? (Note 1,2)		12	15	mV
	GJ1117A-1.8	Vin=3.3V,0mA<Io<1A,TJ=25? (Note 1,2)		15	18	mV
	GJ1117A-2.5	Vin=4V,0mA<Io<1A,TJ=25? (Note 1,2)		20	25	mV
	GJ1117A-3.3	Vin=5V,0mA<Io<1A,TJ=25? (Note 1,2)		26	33	mV
	GJ1117A-5.0	Vin=8V,0mA<Io<1A,TJ=25? (Note 1,2)		40	50	mV

Dropout Voltage (V_{IN}-V_{OUT})	GJ1117AADJ/1.5 /1.8/2.5/3.3/5.5	Io=1A,(?Vout=0.1% Vout)		1.3	1.4	V
Current Limit	GJ1117AADJ/1.5 /1.8/2.5/3.3/5.5	Vin-Vout=5V	1.1			A
Minimum Load Current	GJ1117A-XXX	0? =Tj=125?		5	10	mA
Thermal Regulation	T_A=25? ,30ms pulse			0.008	0.04	%/W
Ripple Rejection	F=120HZ,C_{OUT}=25uF Tantalum, I_{OUT}=1A					
	GJ1117A-XXX	V_{IN}=V_{OUT}+3V		60	70	dB
Temperature Stability	I_O=10mA			0.5		%
?JA Thermal Resistance Junction–to-Ambient(No heat sink ;No air flow)				92		? /w
?JC Thermal Resistance Junction-to-Case		Control Circuitry/Power Transistor		10		? /w

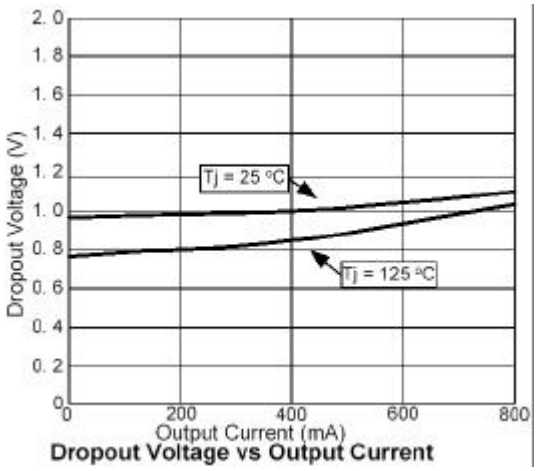
Note 1: See thermal regulation specifications for changes in output voltage due to heating effects . Line and load regulation are measured at a constant junction Temperature by low duty cycle pulse testing .Load regulation is measured at the output lead =1/18" from the package.

Note 2:Line and load regulation are guaranteed up to the maximum power dissipation of 15W.Power dissipation is determined by the difference between input and output and the output current .Guaranteed maximum power dissipation will not be available over the full input/output range.

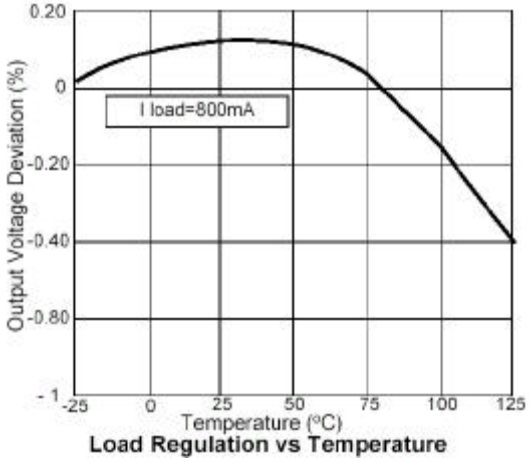
Note 3:Quiescent current is defined as the minimum output current required in maintaining regulation .At 12V input/output differential the device is guaranteed to regulate if the output current is greater than 10mA.

Characteristics Curve

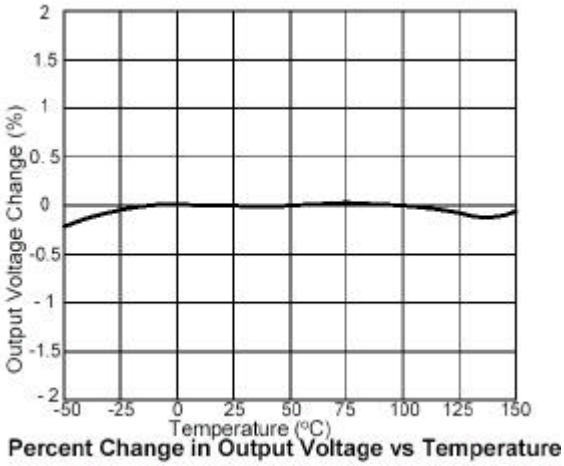
■ Typical Performance Characteristics



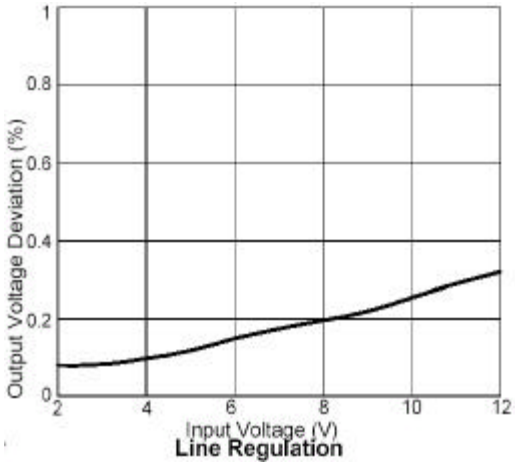
Dropout Voltage vs Output Current



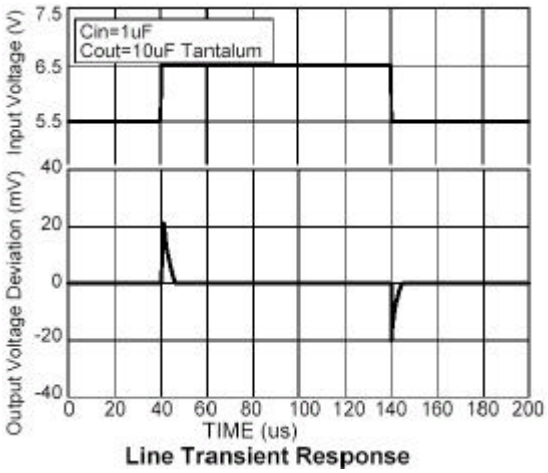
Load Regulation vs Temperature



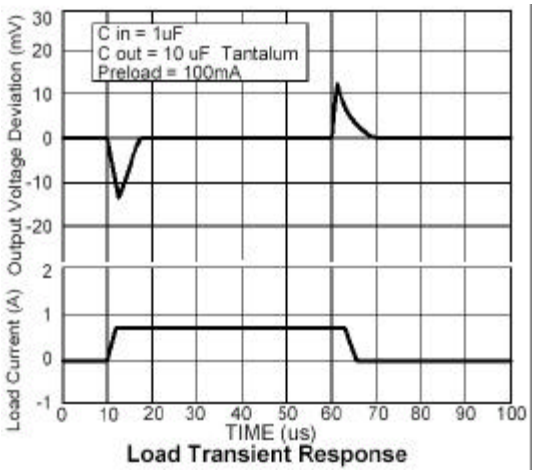
Percent Change in Output Voltage vs Temperature



Line Regulation



Line Transient Response



Load Transient Response

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