GE1117A50

1A LOW DROPOUT POSITIVE REGULATOR

Description

The GE1117A50 is a low dropout at positive 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 logic supply. GE1117A50 is also well suited for other applications such as VGA cards .GE1117A50 is guaranteed to have lower than 1.4V dropout at full load current making it ideal to provide well-regulated outputs 5.0V with 6.4V to 15V input supply.

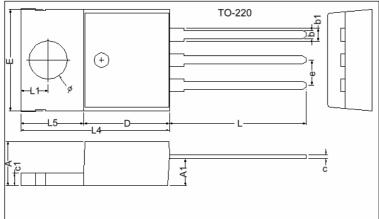
Features

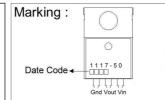
- 1.4Vmaximum dropout full load current
- Fast transient response
- Output current limiting
- · Built-in thermal shutdown
- · Good noise rejection

Applications

- PC peripheral
- Communication

Package Dimensions

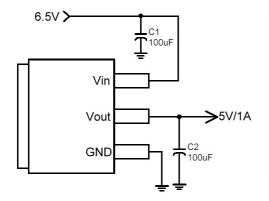


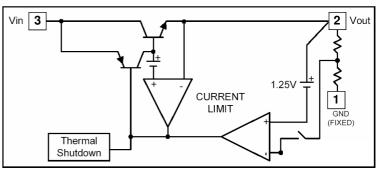


REF.	Millimeter		REF.	Millimeter		
	Min.	Max.	ILLI.	Min.	Max.	
Α	4.40	4.80	c1	1.25	1.45	
b	0.76	1.00	b1	1.17	1.47	
С	0.36	0.50	L	13.25	14.25	
D	8.60	9.00	е	2.54 REF.		
Е	9.80	10.4	L1	2.60	2.89	
L4	14.7	15.3	Ø	3.71	3.96	
L5	6.20	6.60	A1	2.60	2.80	

Typical Circuit

Block Diagram





GE1117A50 Page: 1/4

Pin Descriptions

Name	I/O	PIN#	Function
Gnd		1	Ground pin
Vout	0	2	The output of the regulator. A minimum of 10uF 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	6.4 to 15	V	
PD	Power Dissipation	Internally Limited		
TST	Storage Temperature	-65 ~ + 150	$^{\circ}\mathbb{C}$	
TOP	Operating Junction Temperature Range	0 ~ + 150	$^{\circ}\mathbb{C}$	

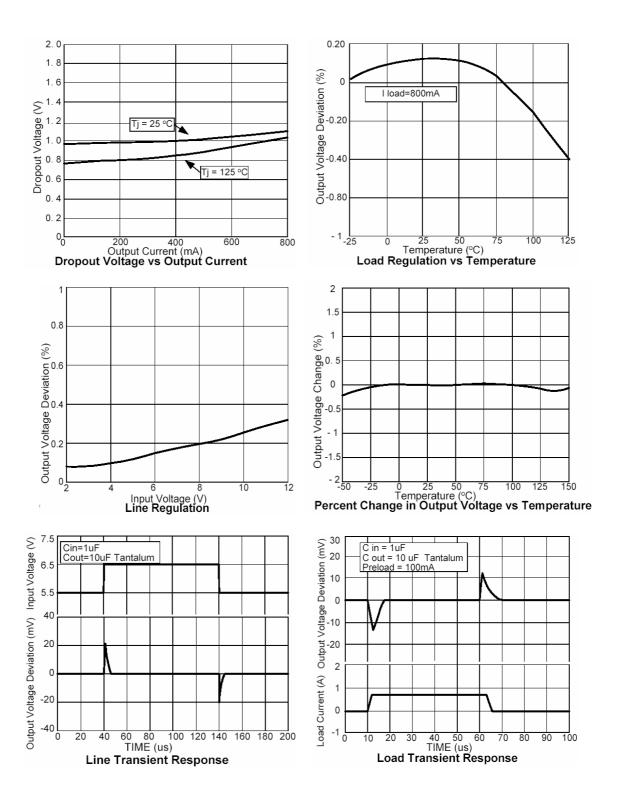
Electrical Characteristics

Parameter	Conditions			MIN	TYP	MAX	UNIT
			A-Rank (0.5%)	4.975	5.000	5.025	V
Output Voltage	Vout	lo=10mA,TJ=25°C,6.5V≤Vin≤12V	B-Rank (1.0%)	4.950	5.000	5.050	V
			C-Rank (2.0%)	4.900	5.000	5.100	V
Line Regulation	REGLINE I0=10mA, 6.5V <vin<12v, tj="25°C</td"><td>-</td><td>-</td><td>0.2</td><td>%</td></vin<12v,>		-	-	0.2	%	
Load Regulation	ad Regulation REGLOAD Vin=8V, 0mA <lo<1a, (note="" 1,2)<="" td="" tj="25°C"><td>te 1,2)</td><td>-</td><td>-</td><td>25</td><td>mV</td></lo<1a,>		te 1,2)	-	-	25	mV
Dropout Voltage (VIN-VOUT)	V _{DROPOUT} Io=1A, (ΔVout=0.1% Vout)		-	1.3	1.4	٧	
Current Limit	urrent Limit Io Vin-Vout=5V		1.1	-	-	Α	
Quiescent Current	IQ	Vin=12V, Io=0mA			-	12	mA
Thermal Regulation	Thermal Regulation TA=25°C,30ms pulse			-	0.008	0.04	%/W
Ripple Rejection	F=120Hz, Cout=25uF Tantalum, Iout=1A						
hippie nejection	VIN=VOUT+3V			-	60	70	dB
Temperature Stability Io=10mA				-	0.5	-	%
θJA Thermal Resistance Junction-to-Ambient(No heat sink ;No air flow)				-	85	-	°C/W
OJC Thermal Resistance Junction-to-Case Control Circuitry/Power Transistor			-	0.65/2.7	-	°C/W	

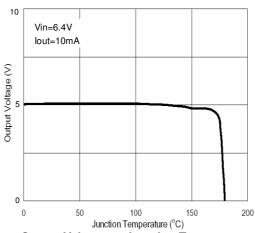
- Note 1: See thermal regulation specifications for changes in output voltage due to heating effects. Line and load regulation are measured at a constant junction Temperature by low duty cycle pulse testing. Load regulation is measured at the output lead =1/18" from the package.
- Note 2: Line and load 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.

GE1117A50 Page: 2/4

Characteristics Curve



GE1117A50 Page: 3/4



Output Voltage vs Junction Temperature

Important Notice:

- orian Notice:

 All rights are reserved. Reproduction in whole or in part is prohibited without the prior written approval of GTM.

 GTM reserves the right to make changes to its products without notice.

 GTM semiconductor products are not warranted to be suitable for use in life-support Applications, or systems.

 GTM assumes no liability for any consequence of customer product design, infringement of patents, or application assistance.

- ### Head Office And Factory:

 * Taiwan: No. 17-1 Tatung Rd. Fu Kou Hsin-Chu Industrial Park, Hsin-Chu, Taiwan, R. O. C. TEL: 886-3-597-7061 FAX: 886-3-597-9220, 597-0785

 * China: (201203) No.255, Jang-Jiang Tsai-Lueng RD., Pu-Dung-Hsin District, Shang-Hai City, China TEL: 86-21-5895-7671 ~ 4 FAX: 86-21-38950165

GE1117A50 Page: 4/4