Elektronische Bauelemente

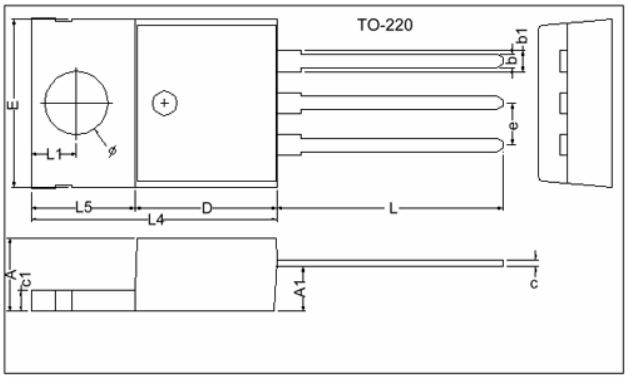
SE1147-50

1A Low Dropout
Positive Regulator

RoHS Compliant Product

Description

The SE1147-50 is a low dropout at positive adjustable or fixed-mode regulator with min. 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. SE1147-50 is also well suited for other applications such as VGA cards. SE1147-50 is guaranteed to have lower than 1.4V dropout at full load current making it ideal to provide well regulated outputs 5V with 6.4V to 18V input supply



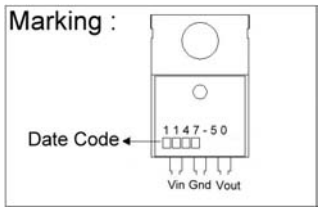
Features

* 1.4V Max. Dropout Full Load Current
* Output Current Limiting
* Good Noise Rejection
* Fast Transient Response
* Built-in Thermal Shutdown

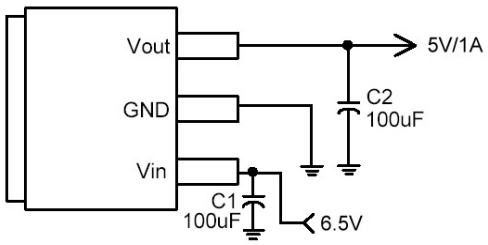
REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.40	4.80	c1	1.25	1.45
b	0.76	1.00	b1	1.17	1.47
c	0.36	0.50	L	13.25	14.25
D	8.60	9.00	e	2.54 REF.	
E	9.80	10.4	L1	2.60	2.89
L4	14.7	15.3	Ø	3.71	3.96
L5	6.20	6.60	A1	2.60	2.80

Applications

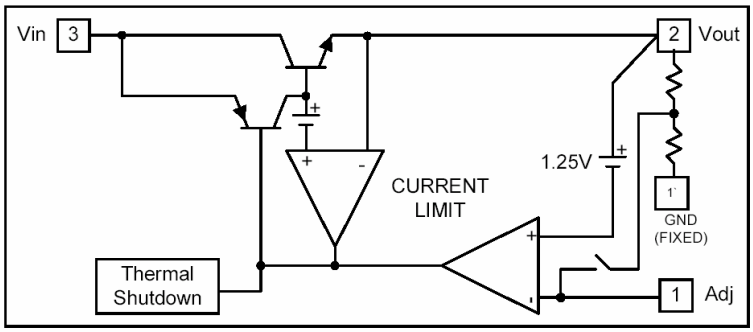
* PC Peripheral
* Communication



Typical Circuit



Block Diagram



Pin Descriptions

Name	I/O	Pin#	Function
Vin	I	1	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.
Gnd	I	2	Ground pin
Vout	O	3	The output of the regulator, A minimum of 10uF capacitor must be connected from this pin to ground to insure stability.

Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
DC Supply Voltage	V_{IN}	-0.3 to 12	V
Power Dissipation	P_D	Internally Limited	
Storage Temperature Range	T_{ST}	-65~+150	℃
Operating Juction Temperature Range	T_{OP}	0~+150	℃

Electrical Characteristics

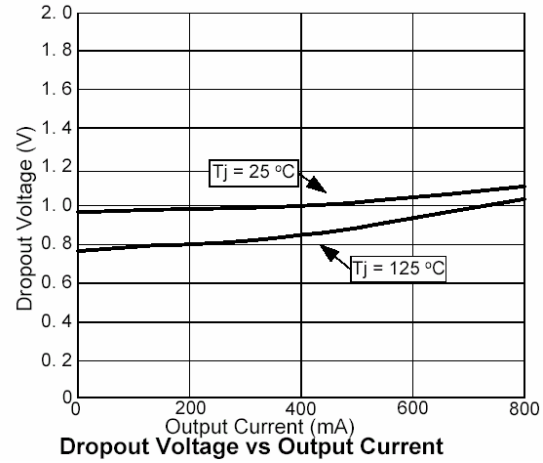
Parameter	Conditions		Min.	Typ.	Max.	Unit
Output Voltage	Vout	Io=10mA,Tj=25℃,6.5V≤Vin≤12V	4.975	5.000	5.050	V
Line Regulation	REG_{LINE}	Io=10mA,6.5V<Vin<12V,Tj=25℃	-	-	0.2	%
Load Regulation	REG_{LOAD}	Vin=8V,0mA<Io<1A,TJ=25℃ (Note 1,2)	-	-	25	mV
Dropout Voltage (V_{IN}-V_{OUT})	$V_{DROPOUT}$	Io=1A,(ΔVout=0.1% Vout)	-	1.3	1.4	V
Current Limit	Io	Vin-Vout=5V	1.1	-	-	A
Minimum Load Current	IQ	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					
	V_{IN}=V_{OUT}+3V		-	60	70	dB
Temperature Stability	I_O=10mA		-	0.5	-	%
θJA Thermal Resistance Junction–to-Ambient(No heat sink ;No air flow)			-	85	-	℃/W
θJC Thermal Resistance Junction-to-Case	Control Circuitry/Power Transistor		-	0.65/2.7	-	℃/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.

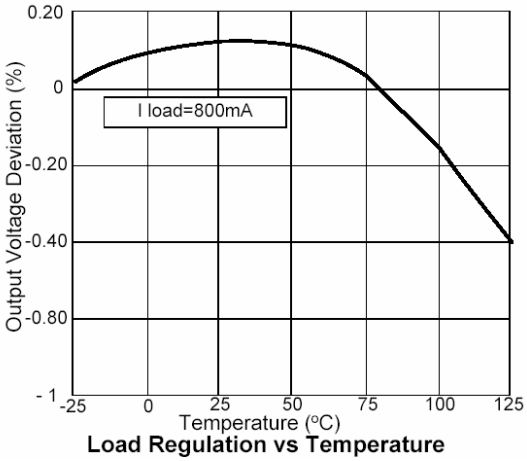
Note 2: Line and load regulation are guaranteed up to the maximum power dissipation of 15W.Power dissipation is determined by the difference between input and output and the output current .Guaranteed maximum power dissipation will not be available over the full input/output range.

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.

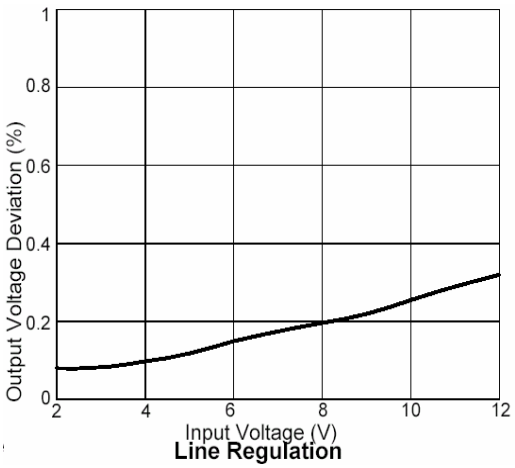
Characteristics Curve



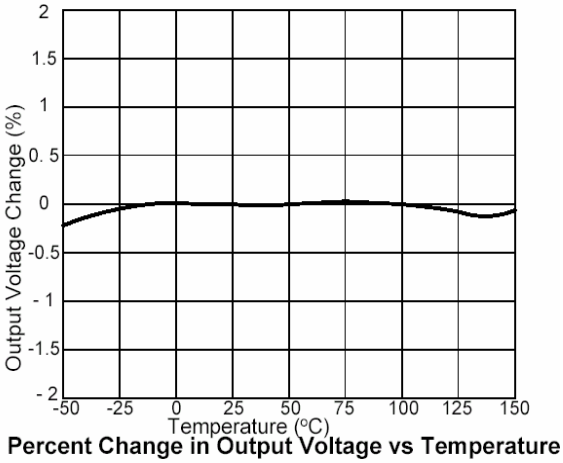
Dropout Voltage vs Output Current



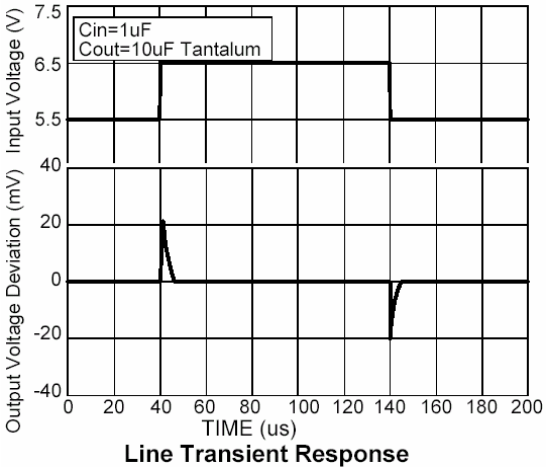
Load Regulation vs Temperature



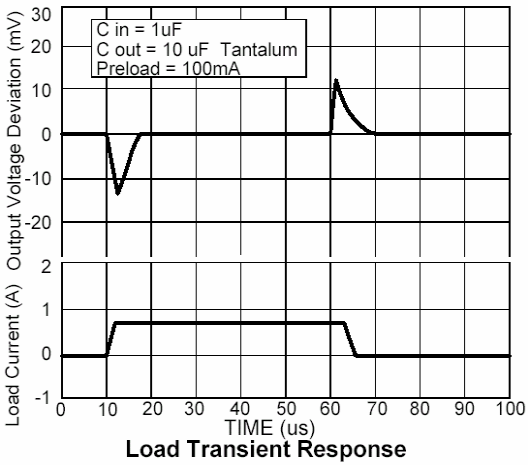
Line Regulation



Percent Change in Output Voltage vs Temperature



Line Transient Response



Load Transient Response