KA317L 3-Terminal 0.1A Positive Adjustable Regulator

Features

• Output Current in Excess of 100mA

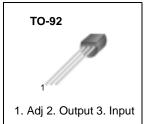
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SEMICONDUCTOR®

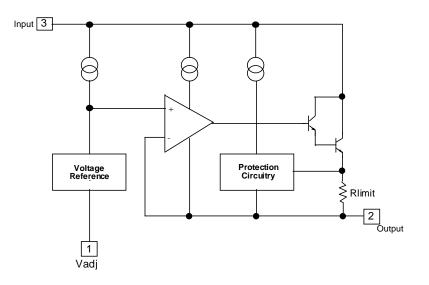
- Output Adjustable Between 1.2V and 37V
- Internal Thermal Overload Protection
- Internal Short Circuit Current-Limiting
- Output Transistor Safe Area Compensation
- Floating Operation For High Voltage Applications

Description

The KA317L is a 3-terminal adjustable positive voltage regulator capable of supplying in excess of 100mA over an output voltage range of 1 .2V to 37V. This voltage regulator is exceptionally easy to use and requires only two external resistors to set the output voltage.



Internal Block Diagram



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Input-Output Voltage Differential	VI - VO	40	V
Power Dissipation	PD	Internally limited	W
Operating Junction Temperature Range	Tj	0 ~ +125	°C
Storage Temperature Range	TSTG	-65 ~+125	°C

Electrical Characteristics

(VI - VO = 5V, IO = 40mA, $0^{\circ}C \le TJ \le +125^{\circ}C$, PDMAX = 625mW, unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Тур.	Max.	Unit
*Line Regulation	Rline	$\begin{array}{l} TA=+25^\circC\\ 3V\leqV_I-V_O\;\leq 40V \end{array}$	-	0.01	0.04	%/V
		$3V \le VI - VO \le 40V$	-	0.02	0.07	
*Load Regulation	Rioal	$\begin{array}{l} T_A = +25^{\circ}C\\ 10mA \leq I_O \leq 100mA\\ V_O \leq 5V\\ V_O \geq 5V \end{array}$	-	5 0.1	25 0.5	mV %/ Vo
		$\begin{array}{l} 10mA \leq I_O \leq 100mA \\ V_O \leq 5V \\ V_O \geq 5V \end{array}$	-	20 0.3	70 1.5	mV %/ VO
Adjustment Pin Current	IADJ	-	-	50	100	μΑ
Adjustment Pin Current Change	ΔIADJ	$3V \le V_I - V_O \le 40V$ $10mA \le I_O \le 100mA$ $P_D < P_DMAX$	-	0.2	5	μΑ
Reference Voltage	Vref	$3V < V_I - V_O < 40V$ $10mA \le I_O \le 100mA$ $P_D \le P_{DMAX}$	1.20	1.25	1.30	V
Temperature Stability	STT	-	-	0.7	-	%
Minimum Load Current to Maintain Regulation	IL(MIN)	VI - VO = 40V	-	3.5	10	mA
Maximum Output Current	IO(MAX)	VI - VO ≤ 15V PD < PDMAX	100	200	-	mA
		$V_I - V_O \le 40V$ $P_D < P_{DMAX}, T_A = +25^{\circ}C$	25	50	-	
RMS Noise, % of VOUT	eN	T _A =+ 25°C 10Hz < f < 10KHz	-	0.003	-	%/ Vo
Ripple Rejection	RR	VO = 10V, f = 120Hz without CADJ CADJ = 10uF	66	65 80	-	dB
Long-Term Stability	ST	TJ = +125 °C, 1000 Hours	-	0.3	-	%

• Load and Line regulation are specified at constant junction temperature. Change in V_O due to heating effects must be taken into account separately. Pulse testing with low duty cycle is used.

Typical Application

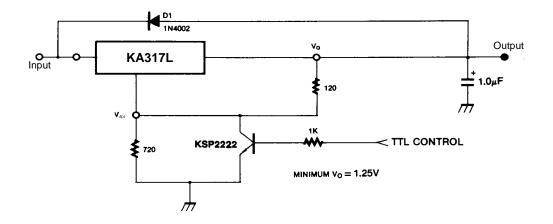
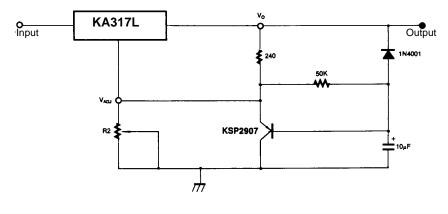


Figure 1. 5V Electronic Shutdown Regulator

D1 protects the device during an input short circuit.





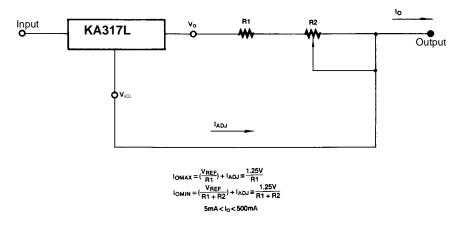
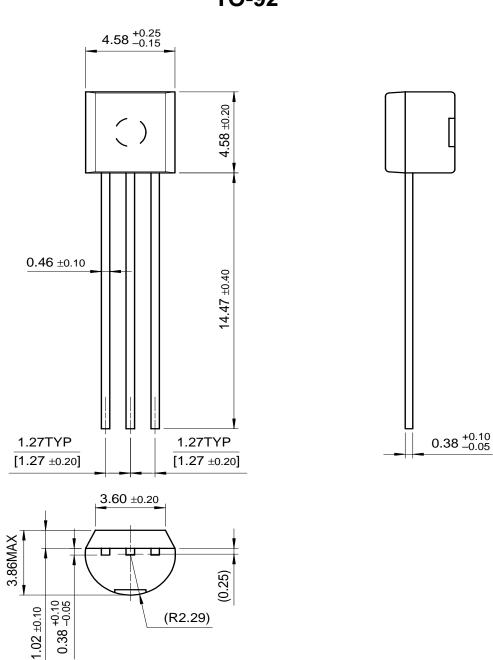


Figure 3. Current Regulator

Mechanical Dimensions

Package



TO-92

Ordering Information

Product Number	Package	Operating Temperature		
KA317LZ	TO-92	0°C to + 125°C		

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