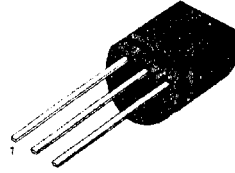


KA317L**ADJUSTABLE VOLTAGE REGULATOR(POSITIVE)****3-TERMINAL 0.1A POSITIVE ADJUSTABLE REGULATOR**

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.

TO - 92



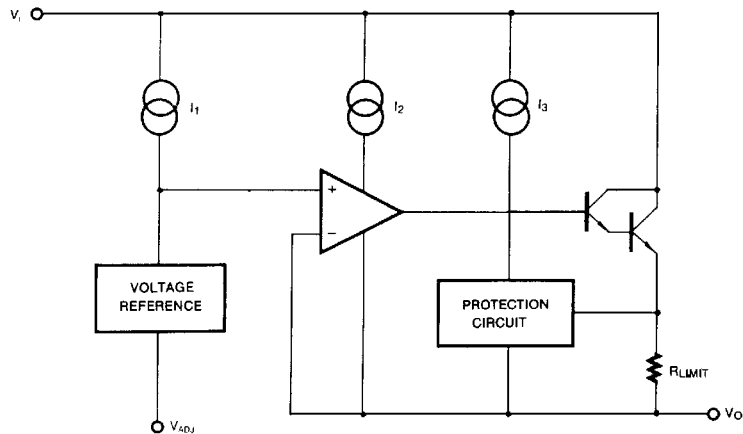
1: ADJ 2: Output 3: Input

FEATURES

- Output current in excess of 100mA
- 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

ORDERING INFORMATION

Device	Package	Operating Temperature
KA317LZ	TO-92	0 ~ 125°C

BLOCK DIAGRAM

KA317L**ADJUSTABLE VOLTAGE REGULATOR(POSITIVE)****ABSOLUTE MAXIMUM RATINGS**

Characteristic	Symbol	Value	Unit
Input-Output Voltage Differential	$V_I - V_O$	40	V
Power Dissipation	P_D	Internally Limited	
Operating Temperature Range	T_{OPR}	0 ~ + 125	°C
Storage Temperature	T_{STG}	-65 ~ + 150	°C

ELECTRICAL CHARACTERISTICS(V_I - V_O = 5V, I_O = 40mA, 0°C ≤ T_J ≤ 125°C, P_{DMAX} = 625mW, unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min	Typ	Max	Unit
* Line Regulation	ΔV_O	T _A = 25°C 3V ≤ V _I ≤ V _O ≤ 40V		0.01	0.04	%/V
		3V ≤ V _I ≤ V _O ≤ 40V		0.02	0.07	
* Load Regulation	ΔV_O	T _A = 25°C 10mA ≤ I _O ≤ 100mA V _O ≤ 5V		5	25	mV
		V _O = 5V		0.1	0.5	%/V _O
		10mA ≤ I _O ≤ 100mA V _O ≤ 5V		20	70	mV
		V _O = 5V		0.3	1.5	%/V _O
Adjustment Pin Current	I _{ADJ}			50	100	μA
Adjustment Pin Current Change	ΔI_{ADJ}	3V ≤ V _I - V _O ≤ 40V 10mA ≤ I _O ≤ 100mA P _D < P _{DMAX}		0.2	5	μA
Reference Voltage	V _{REF}	3V < V _I - V _O < 40V 10mA ≤ I _O ≤ 100mA P _D ≤ P _{DMAX}	1.20	1.25	1.30	V
Temperature Stability	ST _T			0.7		%
Minimum Load Current to Maintain Regulation	I _{L(MIN)}	V _I - V _O = 40V		3.5	10	mA
Maximum Output Current	I _{O(MAX)}	V _I - V _O = 5V P _D < P _{DMAX}	100	200		mA
		V _I - V _O = 40V P _D < P _{DMAX} , T _A = 25°C	25	50		
RMS Noise, % of V _{OUT}	e _N	T _A = 25°C 10Hz < f < 10KHz		0.003		%/V _O
Ripple Rejection	RR	V _O = 10V, f = 120Hz without C _{ADJ} C _{ADJ} = 10 μF	66	65 80		dB
Long-Term Stability	ST	T _J = 125°C, 1000 Hours		0.3		%

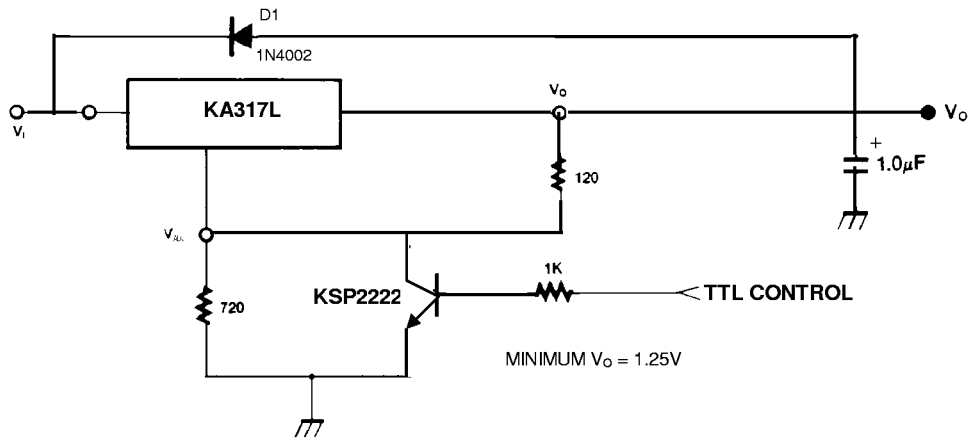
* Load and Line regulation are specified at constant junction temperature. Change in V_O due to heating effects must be taken into account separately. Pulse testing with low duty cycle is used.

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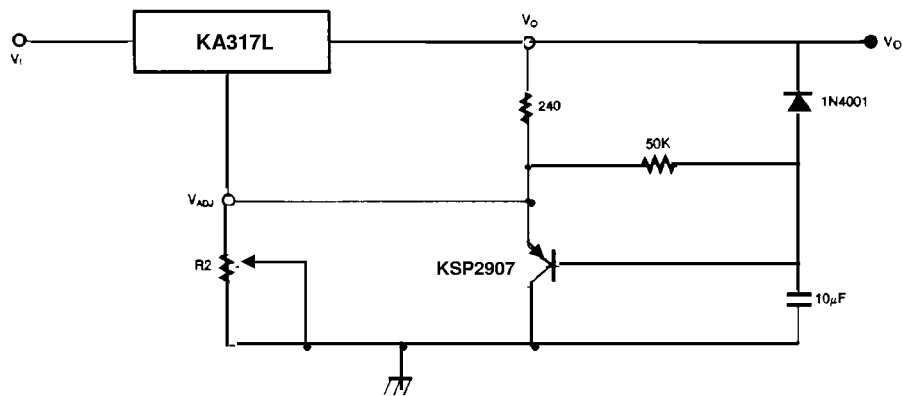
TYPICAL APPLICATIONS

Fig. 1 5V Electronic Shutdown Regulator



D1 protects the device during an input short circuit.

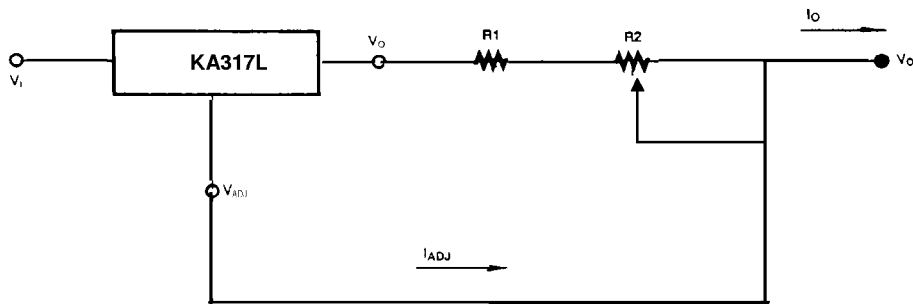
Fig. 2 Slow Turn On Regulator



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Fig. 3 Current Regulator



$$I_{OMAX} = \left(\frac{V_{REF}}{R_1} \right) + I_{ADJ} \approx \frac{1.25V}{R_1}$$

$$I_{OMIN} = \left(\frac{V_{REF}}{R_1 + R_2} \right) + I_{ADJ} \approx \frac{1.25V}{R_1 + R_2}$$

$$5mA < I_o < 500mA$$

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FAST®	SuperSOT™-3	
FAST _r ™	SuperSOT™-6	
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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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