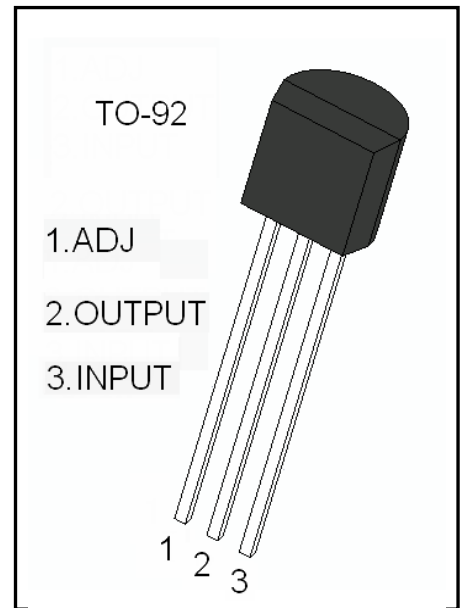


Features

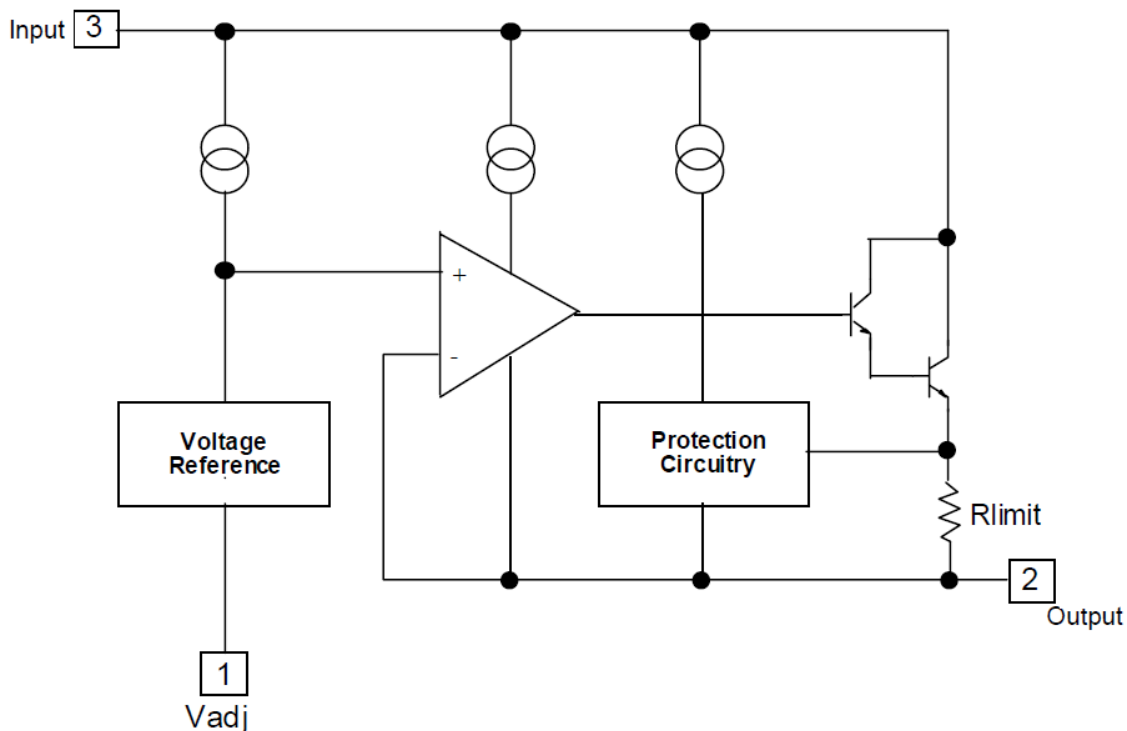
- Output Current in Excess of 100mA
- Output Adjustable Between 1.2V and 37V
- Internal Thermal Overload Protection
- Internal Short Circuit Current Limiting
- Output Transistor Safe Area Compensation
- Floating Operation For High Voltage Applications

Description

The LM317L 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 ($T_a=25^{\circ}\text{C}$)

Parameter	Symbol	Value	Unit
Input-Output Voltage Differential	V_I-V_O	40	V
Power Dissipation	P_D	Internally limited	mW
Operating Junction Temperature Range	T_{opr}	$0 \sim +125$	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	$-65 \sim +125$	$^{\circ}\text{C}$

Electrical Characteristics

($V_I - V_O = 5\text{V}$, $I_O = 40\text{mA}$, $0^{\circ}\text{C} \leq T_J \leq +125^{\circ}\text{C}$, $P_{D\text{MAX}} = 625\text{mW}$, unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
*Line Regulation	R_{line}	$T_A = +25^{\circ}\text{C}$ $3\text{V} < V_I - V_O < 40\text{V}$	-	0.01	0.04	% / V
		$3\text{V} < V_I - V_O < 40\text{V}$	-	0.02	0.07	
*Load Regulation	R_{loal}	$T_A = +25^{\circ}\text{C}$ $10\text{mA} \leq I_O \leq 100\text{mA}$ $V_O \leq 5\text{V}$ $V_O \geq 5\text{V}$	-	5 0.1	25 0.5	mV % / V_O
		$10\text{mA} \leq I_O \leq 100\text{mA}$ $V_O \leq 5\text{V}$ $V_O \geq 5\text{V}$	-	20 0.3	70 1.5	mV % / V_O
Adjustment Pin Current	I_{ADJ}			50	100	μA
Adjustment Pin Current Change	ΔI_{ADJ}	$3\text{V} \leq V_I - V_O \leq 40\text{V}$ $10\text{mA} \leq I_O \leq 100\text{mA}$ $P_D < P_{D\text{MAX}}$		0.2	5	μA
Reference Voltage	V_{REF}	$3\text{V} < V_I - V_O < 40\text{V}$ $10\text{mA} \leq I_O \leq 100\text{mA}$ $P_D \leq P_{D\text{MAX}}$	1.2	1.25	1.3	V
Minimum Load Current to Maintain Regulation	$I_L(\text{MIN})$	$V_I - V_O = 40\text{V}$		3.5	10	mA
Maximum output Current	$I_O(\text{MAX})$	$V_I - V_O \leq 15\text{V}$, $P_D < P_{D\text{MAX}}$	100	200		mA
		$V_I - V_O \leq 15\text{V}$, $P_D < P_{D\text{MAX}}$, $T_A = +25^{\circ}\text{C}$	25	50		

*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.