

# 0.1A Positive Adjustable Regulators



Rev.1. Jan. 2010.



**VSP MIKRON**

**LM317L**

## 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.

TO-92



1. Adj 2. Output 3. Input

## Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Input-Output Voltage Differential	$V_I - V_O$	40	V
Power Dissipation	$P_D$	Internally limited	W
Operating Junction Temperature Range	$T_j$	0 ~ +125	°C
Storage Temperature Range	$T_{STG}$	-65 ~ +125	°C

## Electrical Characteristics

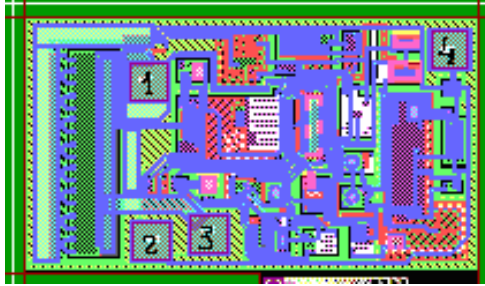
( $V_I - V_O = 5V$ ,  $I_O = 40mA$ ,  $0^\circ C \leq T_J \leq +125^\circ C$ ,  $P_{DMAX} = 625mW$ , unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
*Line Regulation	$R_{line}$	$T_A = +25^\circ C$ $3V \leq V_I - V_O \leq 40V$	-	0.01	0.04	%/V
		$3V \leq V_I - V_O \leq 40V$	-	0.02	0.07	
*Load Regulation	$R_{load}$	$T_A = +25^\circ C$ $10mA \leq I_O \leq 100mA$ $V_O \leq 5V$ $V_O \geq 5V$	-	5 0.1	25 0.5	mV %/ $V_O$
		$10mA \leq I_O \leq 100mA$ $V_O \leq 5V$ $V_O \geq 5V$	-	20 0.3	70 1.5	mV %/ $V_O$
Adjustment Pin Current	$I_{ADJ}$	-	-	50	100	$\mu A$
Adjustment Pin Current Change	$\Delta I_{ADJ}$	$3V \leq V_I - V_O \leq 40V$ $10mA \leq I_O \leq 100mA$ $P_D < P_{DMAX}$	-	0.2	5	$\mu A$
Reference Voltage	$V_{REF}$	$3V < V_I - V_O < 40V$ $10mA \leq I_O \leq 100mA$ $P_D \leq P_{DMAX}$	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	$I_{O(MAX)}$	$V_I - V_O \leq 15V$ $P_D < P_{DMAX}$	100	200	-	mA
		$V_I - V_O \leq 40V$ $P_D < P_{DMAX}$ , $T_A = +25^\circ C$	25	50	-	
RMS Noise, % of $V_{OUT}$	$e_N$	$T_A = +25^\circ C$ $10Hz < f < 10KHz$	-	0.003	-	%/ $V_O$
Ripple Rejection	$RR$	$V_O = 10V$ , $f = 120Hz$ without $C_{ADJ}$ $C_{ADJ} = 10\mu F$	66	65 80	-	dB
Long-Term Stability	$ST$	$T_J = +125^\circ C$ , 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.



**Pad Location**



Chip size: 1,6 x 0,94 mm

Wafer Thickness: 460±30µm (or 350±30µm, 280±30µm)  
 Top metal: AlSi  
 Backside metal: - (or Ti-Ni (V)-Ag)  
 Wafer size: 100 mm

**PAD\_LOCATION COORDINATES**

Pad №	Function	Pad size, µm	Coordinates, µm	
			X	Y
1	OUTPUT	120 x 120	455	675
2	OUTPUT	120 x 120	460	145
3	INPUT	120 x 120	655	170
4	ADJ	120 x 120	1460	785