

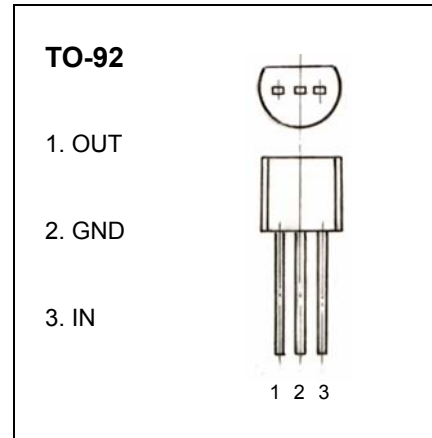


TO-92 Encapsulate Three Terminal Voltage Regulator

## LM317L Three-Terminal Adjustable Regulator

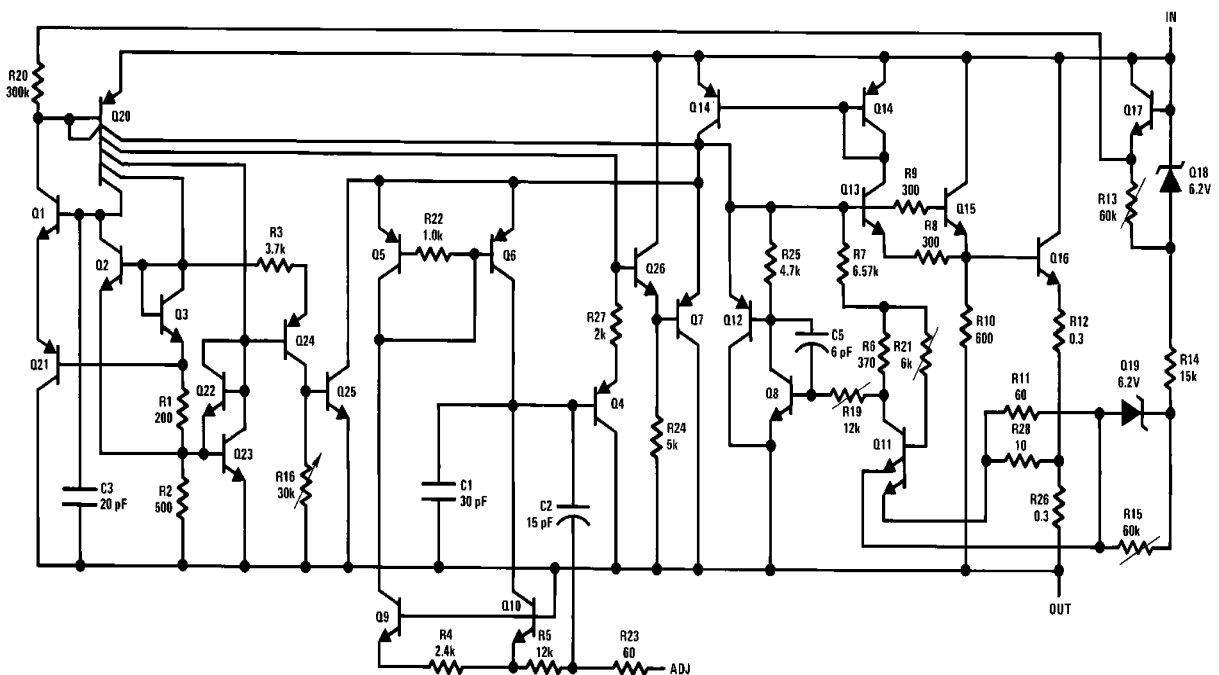
■ Features

- Adjustable output down to 1.2V
- Guaranteed 100 mA output current
- Line regulation typically 0.01%/V
- Load regulation typically 0.1%
- Eliminates the need to stock many voltages
- Output is short circuit protected



■ Absolute Maximum Ratings  $T_a = 25^\circ\text{C}$

Parameter	Symbol	FR101FH	Unit
Input-Output Voltage Differential	$V_i / A_o$	-0.3~40	V
Power Dissipation	$P_D$	Internally Limited	W
Junction Temperature	$T_j$	125	°C
Lead Temperature (Soldering, 4 seconds)	$T_L$	250	
Storage Temperature	$T_{stg}$	-55 to 150	



# LM317L Three-Terminal Adjustable Regulator

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Reference Voltage	V <sub>ref</sub>	3V ≤ (V <sub>IN</sub> -V <sub>OUT</sub> ) ≤ 40V, 5mA ≤ I <sub>OUT</sub> ≤ 100mA, P ≤ 625mW	1.15	1.25	1.35	V
Line Regulation	Reg <sub>line</sub>	3V ≤ (V <sub>IN</sub> -V <sub>OUT</sub> ) ≤ 40V, I ≤ 20mA			0.05	% / V
Line Regulation	Reg <sub>line</sub>	T <sub>j</sub> = 25°C, I <sub>L</sub> ≤ 20mA 3V ≤ (V <sub>IN</sub> -V <sub>OUT</sub> ) ≤ 40V			0.05	
Adjustment Pin Current	I <sub>adj</sub>			50	100	uA
Adjustment Pin Current Change	ΔI <sub>adj</sub>	5mA ≤ I <sub>L</sub> ≤ 100mA 3V ≤ (V <sub>IN</sub> -V <sub>OUT</sub> ) ≤ 40V, P ≤ 625mW		0.2	6	
Minimum Load Current	I <sub>Lmin</sub>	(V <sub>IN</sub> -V <sub>OUT</sub> ) ≤ 40V		3.5	17	mA
		3V ≤ (V <sub>IN</sub> -V <sub>OUT</sub> ) ≤ 15V		1.5	6	
Current Limit	I <sub>max</sub>	3V ≤ (V <sub>IN</sub> -V <sub>OUT</sub> ) ≤ 13V	40		260	
		(V <sub>IN</sub> -V <sub>OUT</sub> ) = 40V	25		70	
Load Regulation	Reg <sub>load</sub>	T <sub>j</sub> = 25°C, 5mA ≤ I <sub>OUT</sub> ≤ I <sub>MAX</sub>		0.1	0.5	%
Load Regulation	Reg <sub>load</sub>	5mA ≤ I <sub>OUT</sub> ≤ 100mA		0.3	1.2	
Temperature Stability	T <sub>s</sub>	T <sub>MIN</sub> ≤ T <sub>j</sub> ≤ T <sub>MAX</sub>		0.65		
Rms Noise % of V <sub>o</sub>	N	T <sub>j</sub> = 25°C, 10Hz ≤ f ≤ 10KHz		0.003	0.008	
Long-Term Stability	S	T <sub>j</sub> = 125°C, 1000 Hours		0.3	1	
Ripple Rejection	RR	V <sub>OUT</sub> = 10V, f = 120Hz, C <sub>ADJ</sub> = 0		65	80	dB
		C <sub>ADJ</sub> = 10uF	66	80		

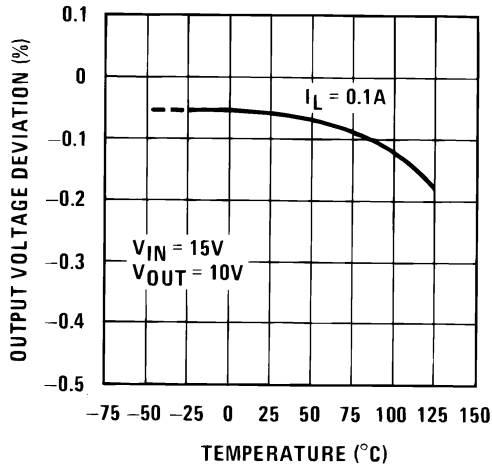
■ Marking

Marking	LM317L
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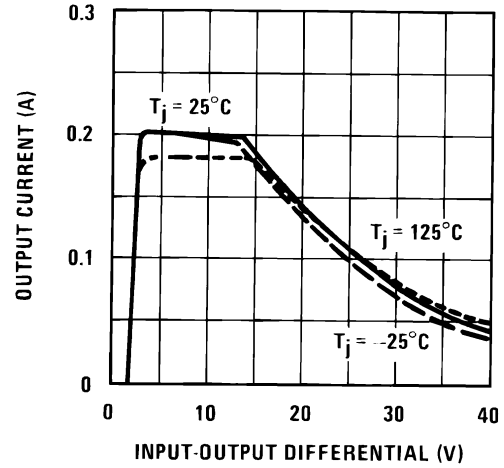
# LM317L Three-Terminal Adjustable Regulator

## ■ Typical Characteristics

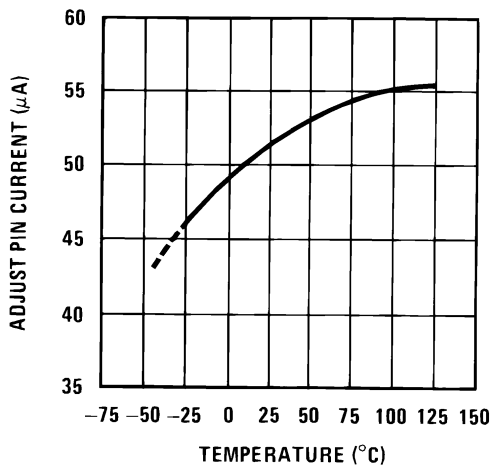
### Load Regulation



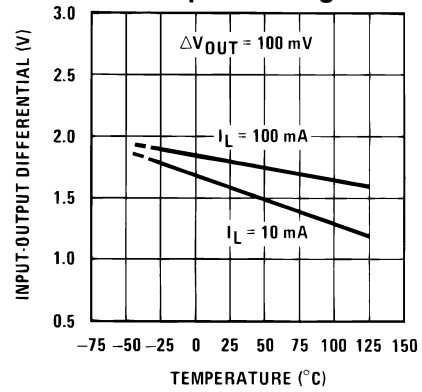
### Current Limit



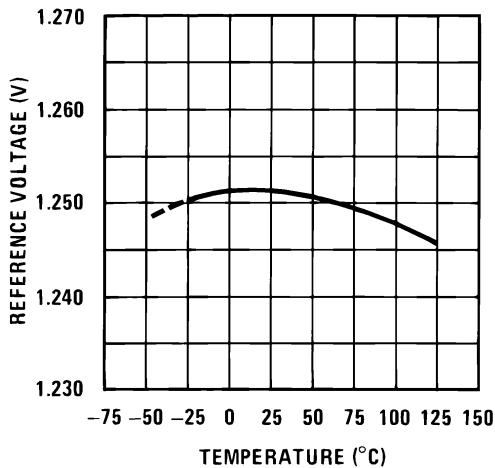
### Adjustment Current



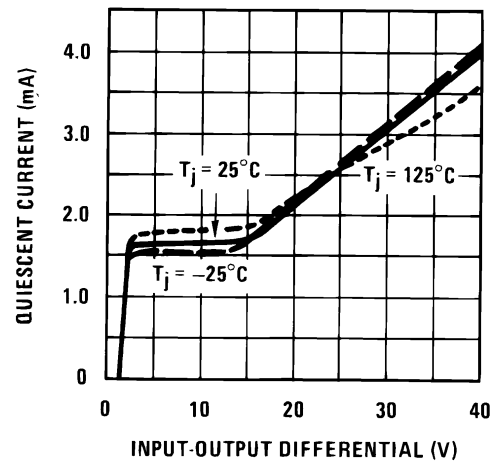
### Dropout Voltage



### Reference Voltage Temperature Stability

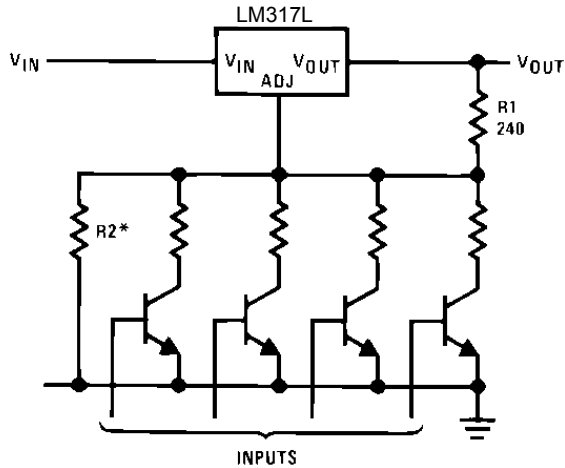


### Minimum Operating Current



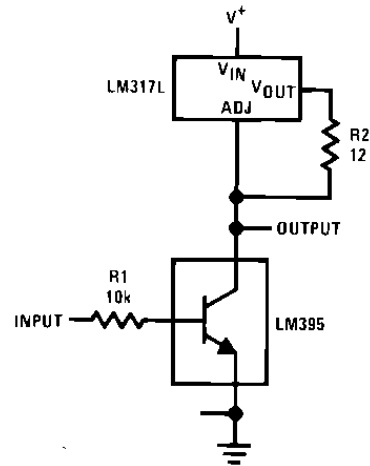
# LM317L Three-Terminal Adjustable Regulator

## ■ Typical Application

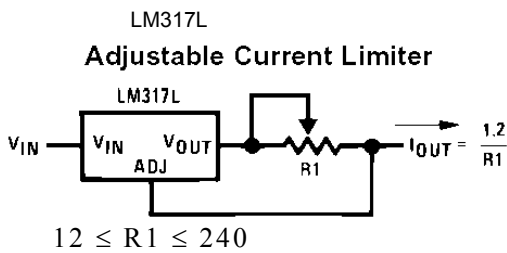


\*Sets maximum Vout

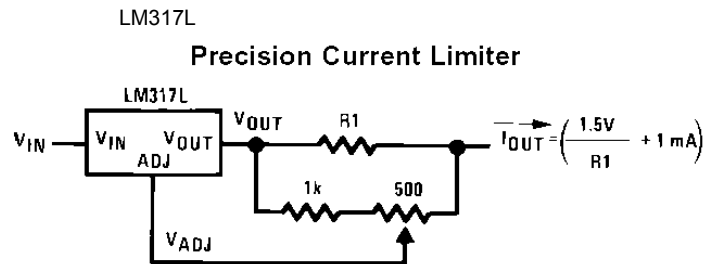
Digitally Selected Outputs



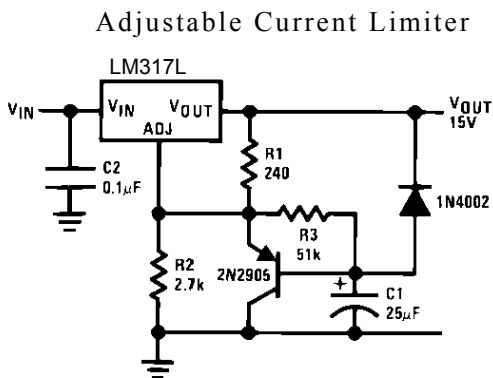
High Gain Amplifier



Adjustable Current Limiter



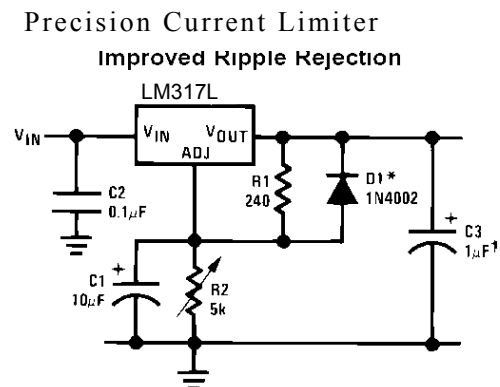
Precision Current Limiter



Adjustable Current Limiter

Slow Turn-on 15V Regulator

Improved Ripple Rejection



Precision Current Limiter  
Improved Ripple Rejection

+Sold tantalum

\*Discharges C1 if output is shorted to ground

Adjustable Regulator with