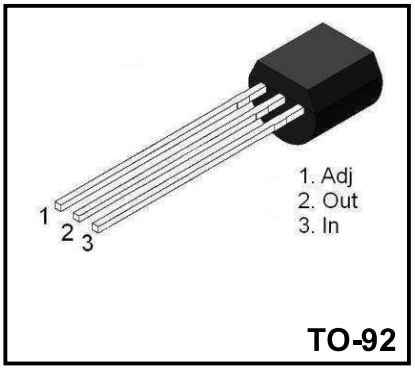
3-Terminal 0.1A Positive Adjustable Regulator



Description

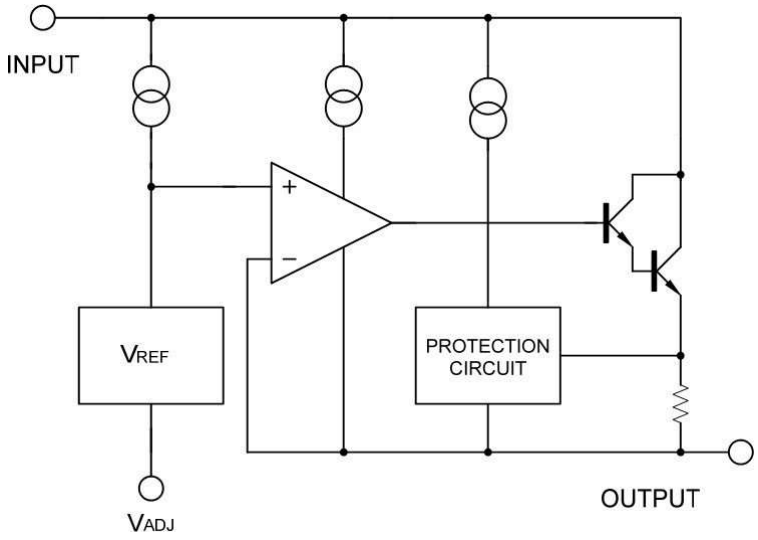
♦The LM317L is a monolithic integrated circuit, designed to supply 100mA of output current with voltage adjustable from 1.25V to 37V.

Features

♦Output Voltage adjustable from 1.25 to 37V
♦Output current in excess of 100mA
♦Internal thermal overload protection
♦Internal short circuit current limiting
♦Output transistor safe area compensation

Marking Code	
LM317L	YFW LM317L

Block Diagram



Absolute Maximum Ratings

Symbol	Parameter	Value	Unit
V_{i-O}	Input-output Differential Voltage	40	V
I_O	Output Current	Intenrally Limited	
V_O	Out put Voltage	5	V
T_{OP}	Operating Junction Temperature	0～＋125	℃
T_{STG}	Storage Temperature	-60～＋150	℃

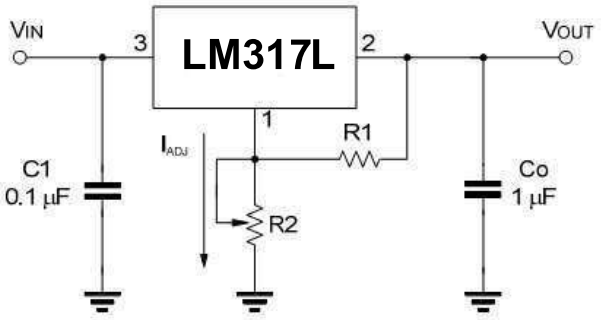
Electrical Characteristics

(Vi - Vo = 5 V, Io = 500 mA, I_{MAX} = 1.5A and P_{MAX} = 20W, unless otherwise specified)

Parameter	Symbol	Conditions		Value			Unit
				Min	Typ	Max	
Line Regulation	$\triangle V_O$	V_I-V_O =3 to 40V, I_{LOAD} ≤20mA				0.04	%V
Load Regulation	$\triangle V_O$	I_O = 5mA~100mA	V_{OUT}≤5V			25	mV
			V_{OUT}≥5V			0.5	%
Adjustment Pin Current	I_{ADJ}	Tj＝25℃				100	μA
Adjustment Pin Current	$\triangle I_{ADJ}$	V_I-V_O = 3 to 40V, I_O = 5mA~100mA				5	μA
Reference Voltage (between pin3 and pin1)	V_{REF}	V_I-V_O = 3 to 40V I_O = 5mA~100mA, P_D ≤625mW		1.20	1.25	1.30	V
Minimum Load Current	$I_{L(min)}$	V_I-V_O = 40V				10	mA
Maximum Output Current	$I_{O(max)}$	V_I-V_O = 40V, P_D ≤625mW				100	mA
RMS Noise vs. %of V_{OUT}	eN	f = 10 to10KHz				0.01	%V
Ripple Rejection	RR	V_{OUT}=10V, f = 120Hz	C_{ADJ} = 0		65		dB
			C_{ADJ}= 10μF	60			dB

Note: C_{ADJ} is connected between Adjust pin and Ground.

Application Circuits



$V_{out} = 1.25*(1+R2/R1)+I_{ADJ}*R$

C1 is required when regulator is located an apreciated distance from power suplly. Co is needed to improve transient response.

Fig.1 Prgrammable Voltage Regulator

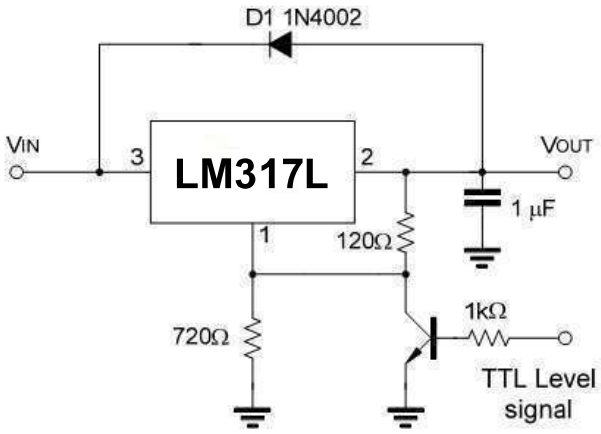


Fig.2 Regulator with ON-off controll

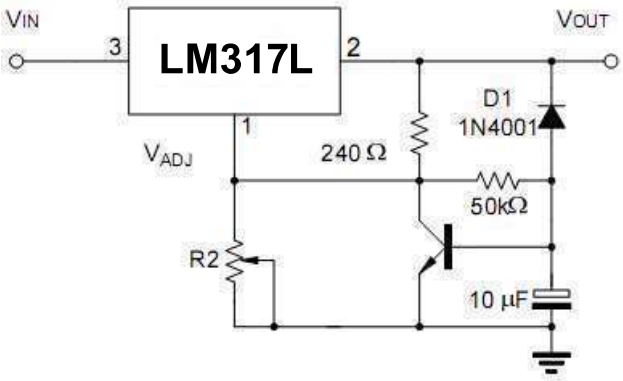
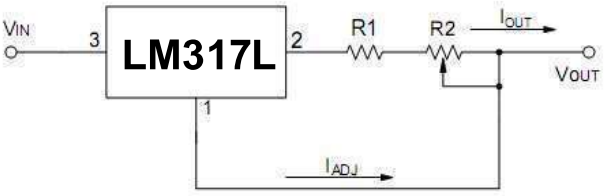


Fig.3 Soft Start Application



$$I_{O(MAX)}=\left(\frac{V_{REF}}{R1}\right)+I_{ADJ}=\frac{1.25V}{R1}$$

$$I_{O(MIN)}=\left(\frac{V_{REF}}{R1+R2}\right)+I_{ADJ}=\frac{1.25V}{R1+R2}$$

$5mA<I_{OUT}<100mA$

Fig.4. Constant Current Application

Typical Characteristics

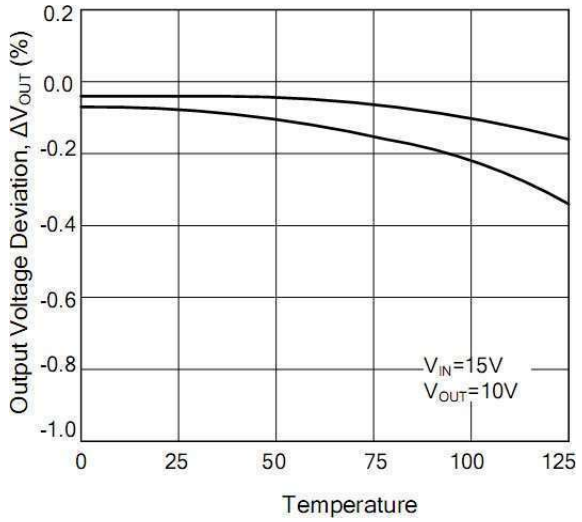


Fig.1. Load Regulation vs. temperature

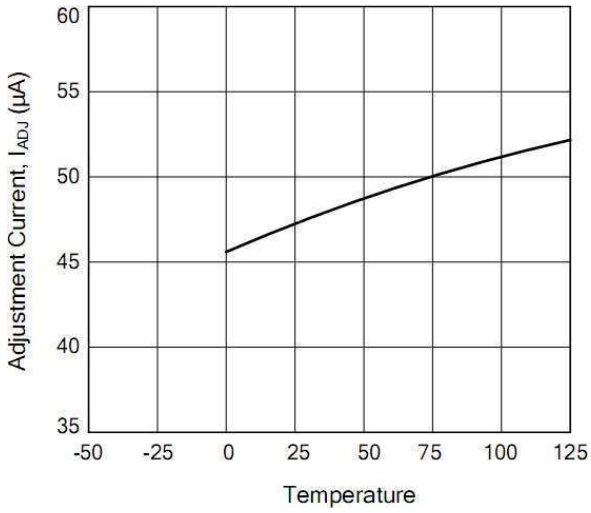


Fig.2. Adjustment Current vs. Temperature

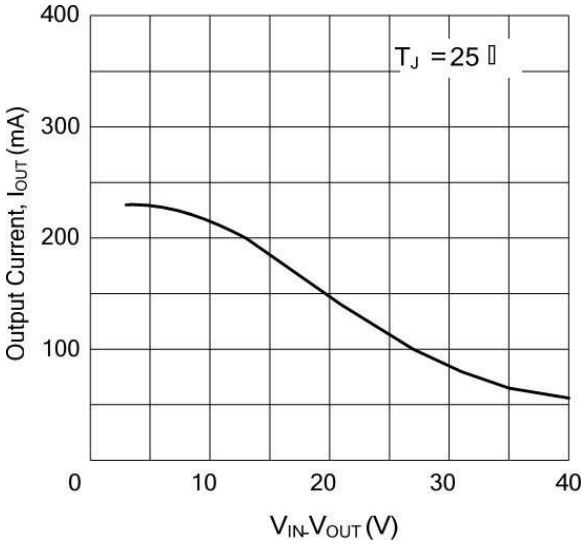


Fig.3. Currents Limit

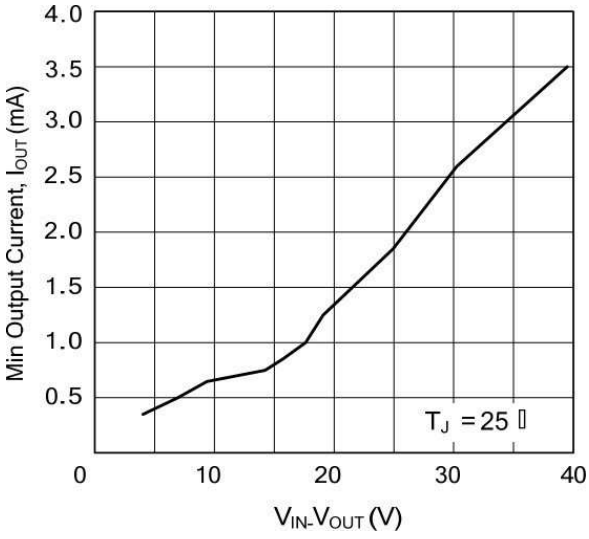


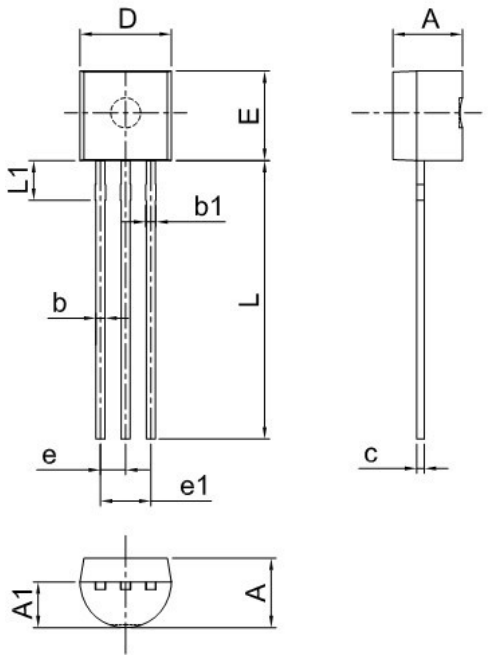
Fig.4. Minimum Opreating Current

Ordering information

Package	Packing Description	Base Quantity
TO-92	Bulk	1000pcs/Bag
	Tape	2000pcs/Box

Package Dimensions

TO-92



Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	3.30	3.70	0.130	0.146
A1	2.30	2.70	0.091	0.106
b	0.40	0.50	0.016	0.020
b1	0.50	0.70	0.020	0.028
c	0.35	0.45	0.014	0.018
D	4.45	4.70	0.175	0.185
E	4.40	4.65	0.173	0.183
e	1.17	1.37	0.046	0.054
e1	2.34	2.64	0.092	0.104
L	13.50	14.50	0.531	0.571
L1	1.80	2.20	0.071	0.087

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