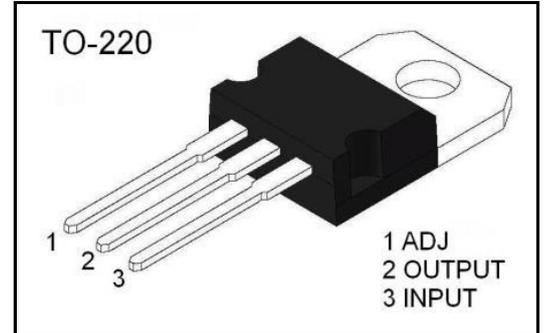


LM317

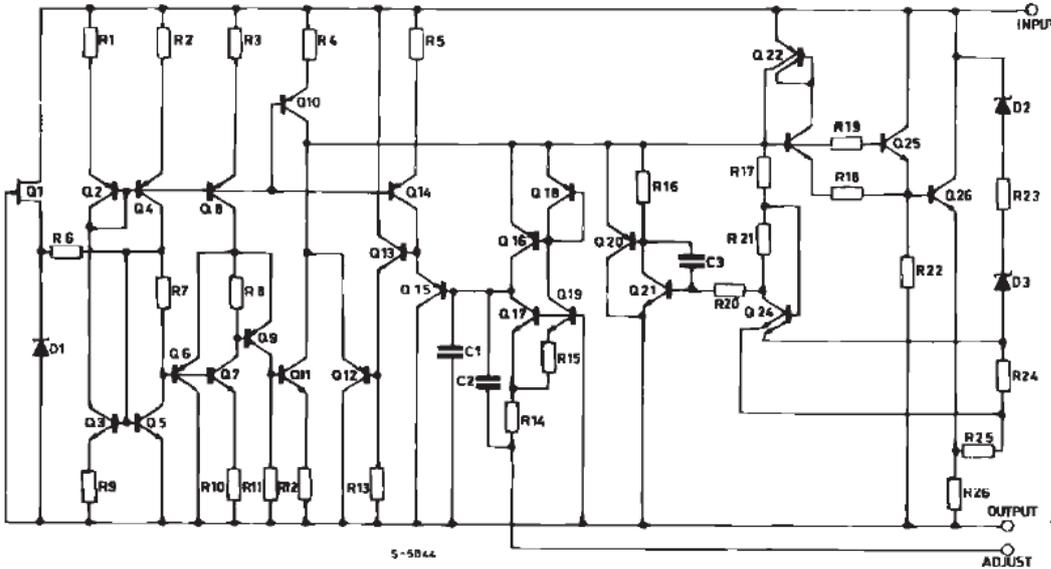
3-Terminal 1.5A Positive Adjustable Regulator

Features

1. Output Voltage Range : 1.2 TO 37V
2. Output Current in excess of 1.5A
3. 0.1% Line and Load Regulation Voltages
4. Floating Operation For High
4. Complete Series of Protections:
Current Limiting, Thermal Shutdown and SOA Control



Schematic Diagram



Absolute Maximum Ratings (TA =25°C)

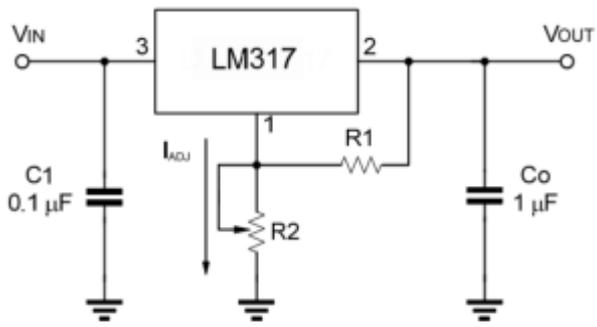
Symbol	Parameter	Value	Unit
V _{I-O}	Input-output Differential Voltage	40	V
I _O	Output Current	Intenrally Limited	
V _O	Out put Voltage	5	V
T _{OP}	Operating Junction Temperature	0~+125	°C
T _{STG}	Storage Temperature	-60~+150	°C

Electrical Characteristics

($V_i - V_o = 5V$, $I_o = 500\text{ mA}$, $I_{MAX} = 1.5A$ and $P_{MAX} = 20W$, unless otherwise specified)

Parameter	Symbol	Conditions		Value			Unit
				Min	Typ	Max	
Line Regulation	ΔV_o	$V_i - V_o = 3\text{ to }40V$	$T_j = 25^\circ C$			0.04	%V
						0.07	
Load Regulation	ΔV_o	$V_o \leq 5V$ $I_o = 10mA \sim I_{MAX} 1.5A$	$T_j = 25^\circ C$			25	mV
						70	
		$V_o \geq 5V$ $I_o = 10mA \sim I_{MAX} 1.5A$	$T_j = 25^\circ C$			0.5	%V
						1.5	
Adjustment Pin Current	I_{ADJ}	$T_j = 25^\circ C$				100	μA
Adjustment Pin Current	ΔI_{ADJ}	$V_i - V_o = 2.5\text{ to }40V$ $I_o = 10mA \sim I_{MAX} 1.5A$				5	μA
Output Voltage Drift	$\Delta V / \Delta T$	$I_o = 5mA$			-0.8		$mV/^\circ C$
Reference Voltage (between pin3 and pin1)	V_{REF}	$V_i - V_o = 2.5\text{ to }40V$ $I_o = 10mA \sim I_{MAX} 1.5A$ $P_D \leq P_{MAX}$		1.2	1.25	1.3	V
Output Voltage Temperature Stability	$\Delta V_o / \Delta T$				1		%
Minimum Load Current	$I_{O(min)}$	$V_i - V_o = 40V$				10	mA
Maximum Load Current	$I_{O(max)}$	$V_i - V_o \leq 15V, P_D < P_{MAX}$		1.5			A
		$V_i - V_o = 40V, P_D < P_{MAX}, T_j = 25^\circ C$			0.4		

Application Circuits



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

Fig.1 Programmable Voltage Regulator

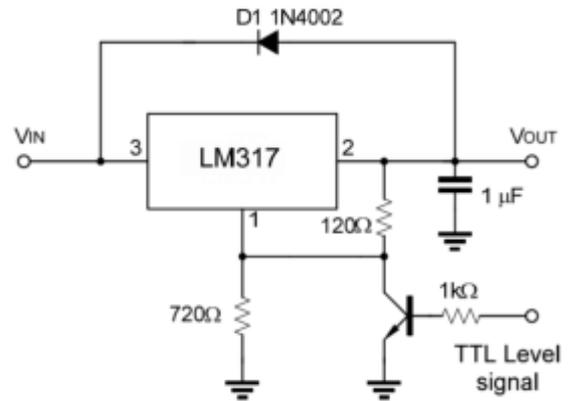


Fig.2 Regulator with ON-off control

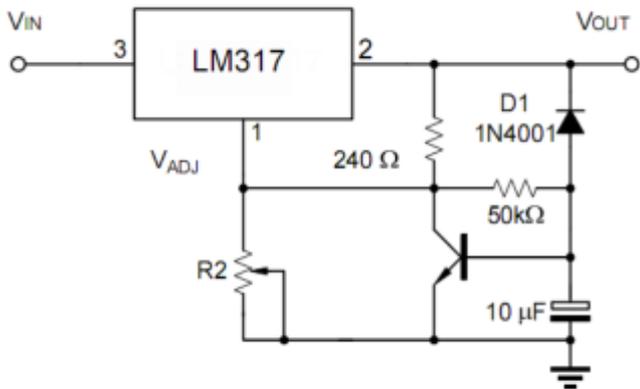


Fig.3 Soft Start Application

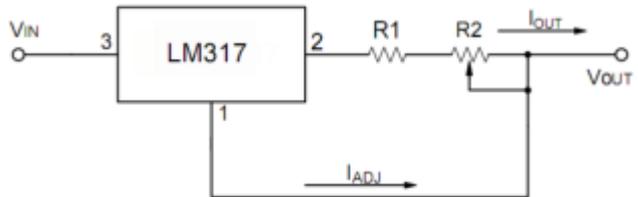


Fig.4. Constant Current Application

Typical Characteristics

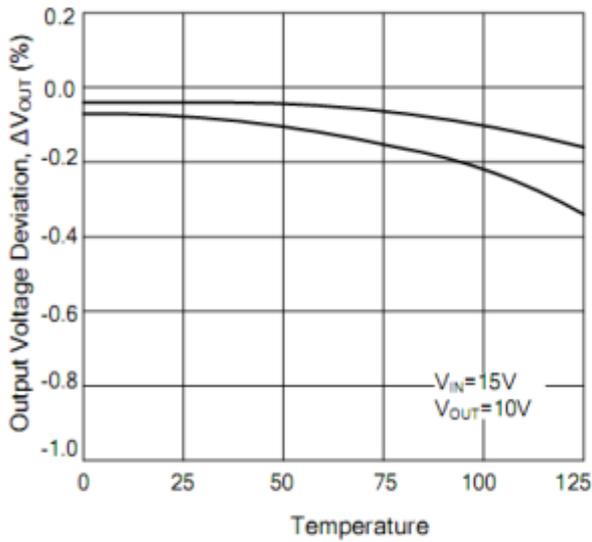


Fig.1. Load Regulation vs. temperature

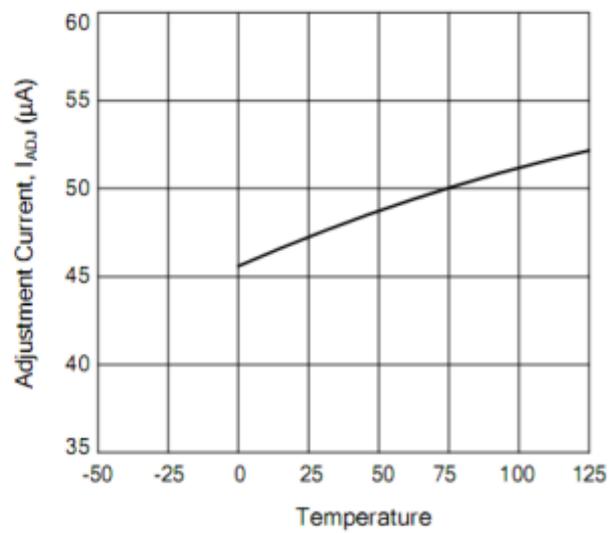


Fig.2. Adjustment Current vs. Temperature

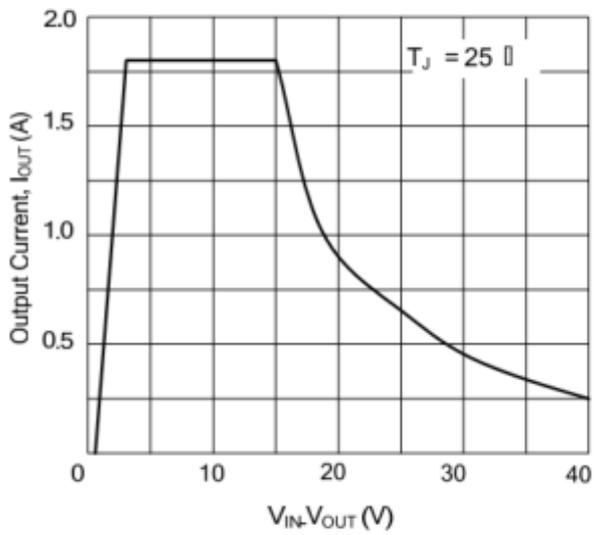


Fig.3. Currents Limit

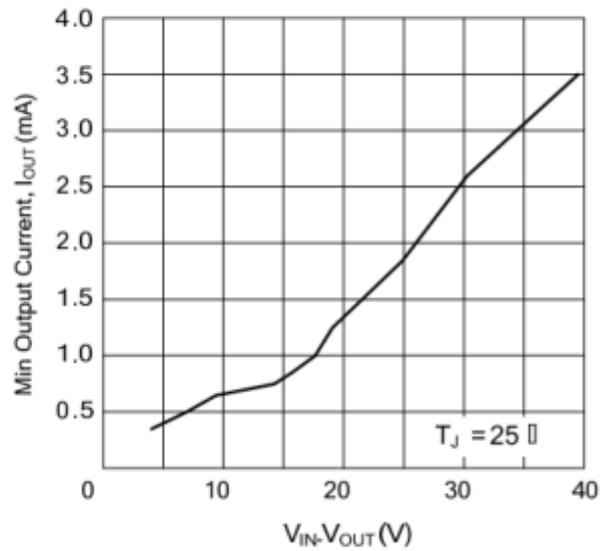


Fig.4. Minimum Operating Current