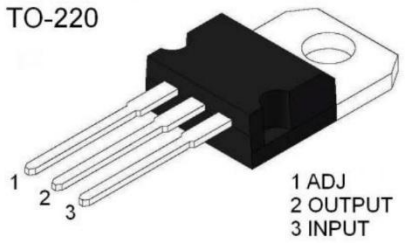
LM317T

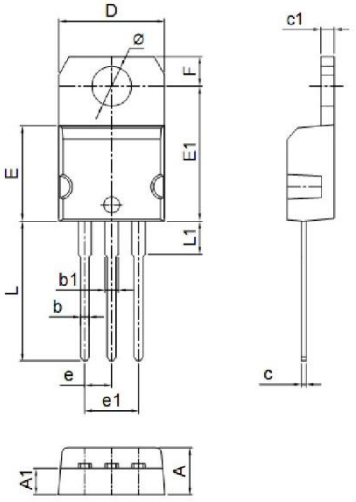
Three-terminal adjustable positive voltage regulator



FEATURES

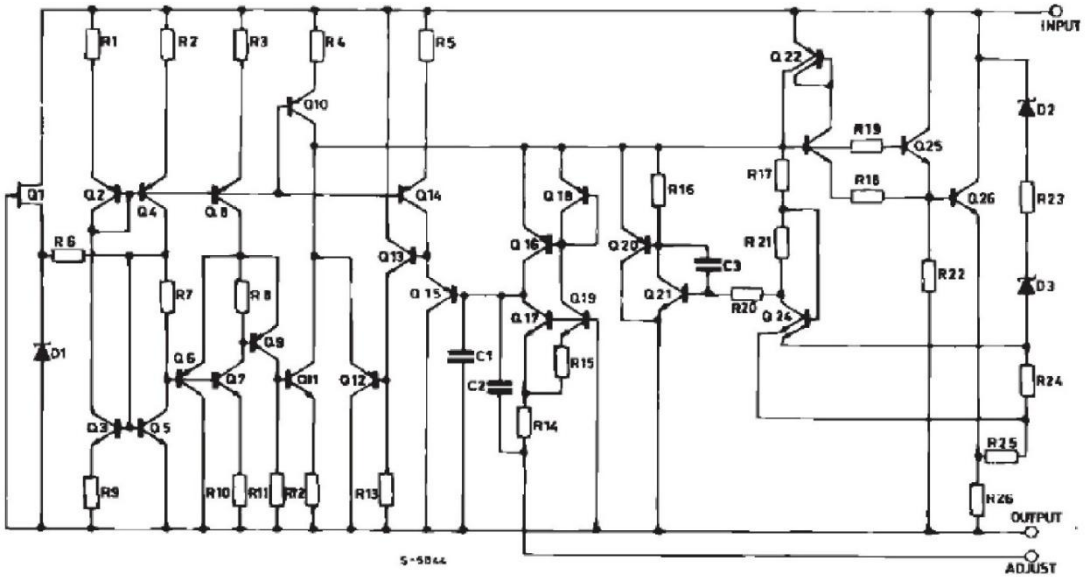
- Output current up to 1.5A
- Output voltage adjustable from 1.3V to 37V
- Internal short circuit protection
- Internal over temperature protection
- RoHS and Reach compliant

Package Outline Dimensions



Symbol	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.30	4.70	0.171	0.184
A1	2.52	2.82	0.099	0.111
b	0.71	0.91	0.028	0.036
b1	1.17	1.37	0.046	0.054
c	0.40	0.55	0.012	0.020
c1	1.17	1.37	0.046	0.054
D	9.90	10.20	0.390	0.402
E	8.90	9.10	0.335	0.350
E1	12.50	13.00	0.472	0.492
e	2.44	2.64	0.096	0.104
e1	4.88	5.28	0.192	0.208
F	2.60	2.80	0.102	0.110
L	12.70	13.70	0.520	0.543
L1	2.90	3.30	0.150	0.165
Φ	3.75	3.95	0.142	0.156

SCHEMATIC DIAGRAM



ABSOLUTE MAXIMUM RATINGS

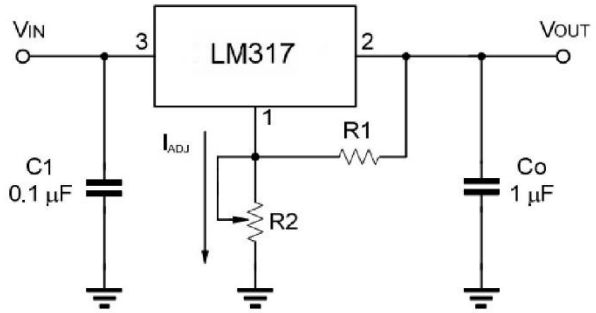
Parameter	Symbol	Value	UNIT
Input-Output Differential Voltage	V_{I-O}	40	V
Output Current	I_O	Internally Limited	
Output Voltage	V_O	5	V
Operating Junction Temperature	T_{OP}	0 ~ +125	°C
Storage Temperature	T_{STG}	-60 ~ +150	°C

ELECTRICAL CHARACTERISTICS

(V_I - V_O = 5V, I_O=500mA, I_{MAX}=1.5A and P_{MAX}=20W, unless otherwise specified)

Parameter	Symbol	Test conditions		MIN	TYP	MAX	UNIT
Line Regulation	ΔV_O	V_I-V_O=3 to 40V	T_J=25°C			0.04	%V
						0.07	
Load Regulation	ΔV_O	V_O≤5V I_O= 10mA ~ I_{MAX}1.5A	T_J=25°C			25	mV
						70	
		V_O≥5V I_O= 10mA ~ I_{MAX}1.5A	T_J=25°C			0.5	%V
						1.5	
Adjustable Pin Current	I_{ADJ}	T_J=25°C				100	µA
Adjustable Pin Current	ΔI_{ADJ}	V_I-V_O=2.5 to 40V I_O= 10mA ~ I_{MAX}1.5A				5	µA
Output Voltage Drift	$\Delta V/\Delta T$	I_O= 5mA			-0.8		mV/°C
Reference Voltage (between pin3 and pin1)	V_{REF}	V_I-V_O=2.5 to 40V I_O= 10mA ~ I_{MAX}1.5A $P_D \le P_{MAX}$		1.2	1.25	1.3	V
Output Voltage Temperature Stability	$\Delta V_O/\Delta V_O$				1		%
Minimum Load Current	$I_{O(MIN)}$	V_I-V_O=40V				10	mA
Maximum Load Current	$I_{O(MAX)}$	V_I-V_O ≤ 15V, P_D < P_{MAX}		1.5			A
		V_I-V_O=40V, P_D < P_{MAX}, T_J=25°C			0.4		

APPLICATION CIRCUITS



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

Fig.1 Prgrammable Voltage Regulator

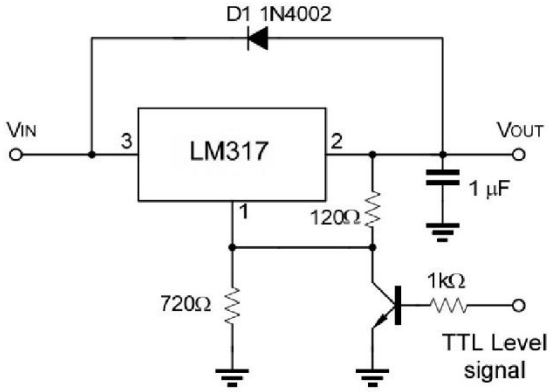


Fig.2 Regulator with ON-off controll

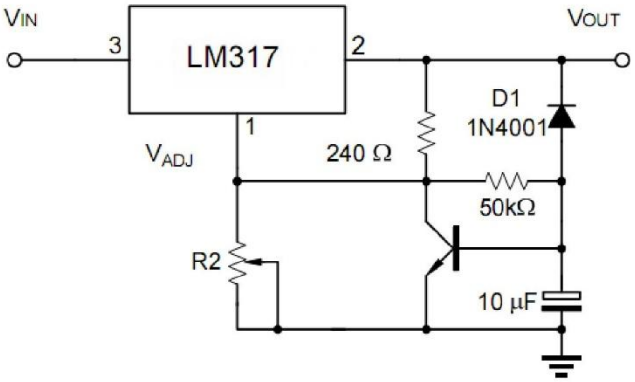


Fig.3 Soft Start Application

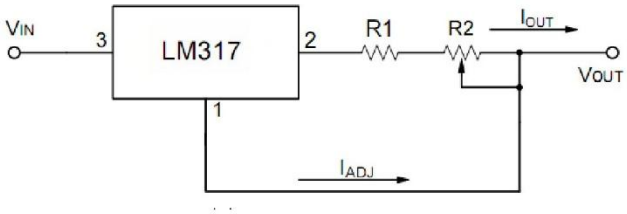


Fig.4. Constant Current Application

TYPICAL CHARACTERISTICS

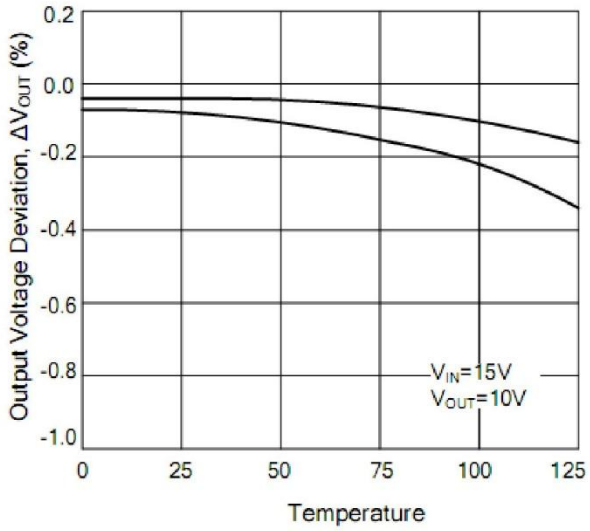


Fig.1. Load Regulation vs. temperature

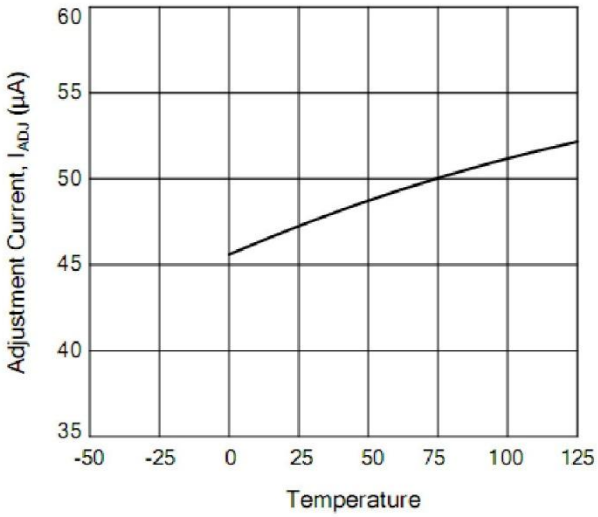


Fig.2. Adjustment Current vs. Temperature

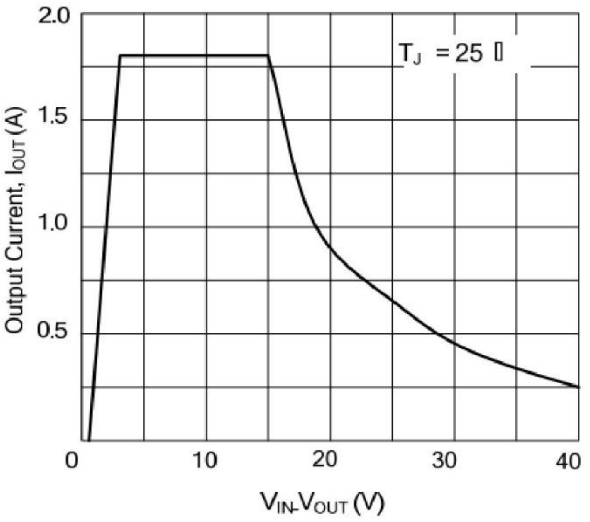


Fig.3. Currents Limit

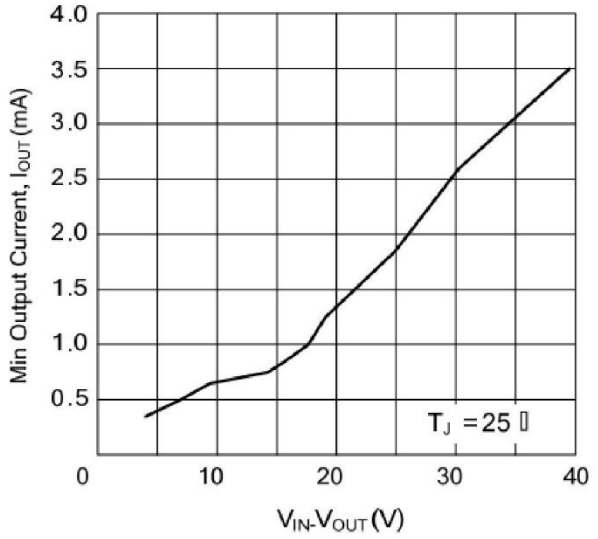


Fig.4. Minimum Opreating Current