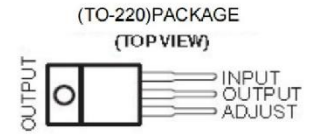


LM317 Three-terminal adjustable positive voltage regulator

FEATURES

- Output current up to 1.5A
- Output voltage adjustable from 1.3V to 37V
- Internal short circuit protection
- Internal over temperature protection
- Safe-area compensation for output transistor



ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$, unless otherwise specified)

Parameter	Symbol	Value	UNIT
Input-Output Voltage Difference	V_I-V_O	40	V
Lead Temperature	T_{LEAD}	260	$^\circ\text{C}$
Power Dissipation	P_D	Internal Limited	-
Operating Junction Temperature Range	T_{OPR}	0 ~ +150	$^\circ\text{C}$
Storage Temperature Range	T_{STG}	-60 ~ +150	$^\circ\text{C}$

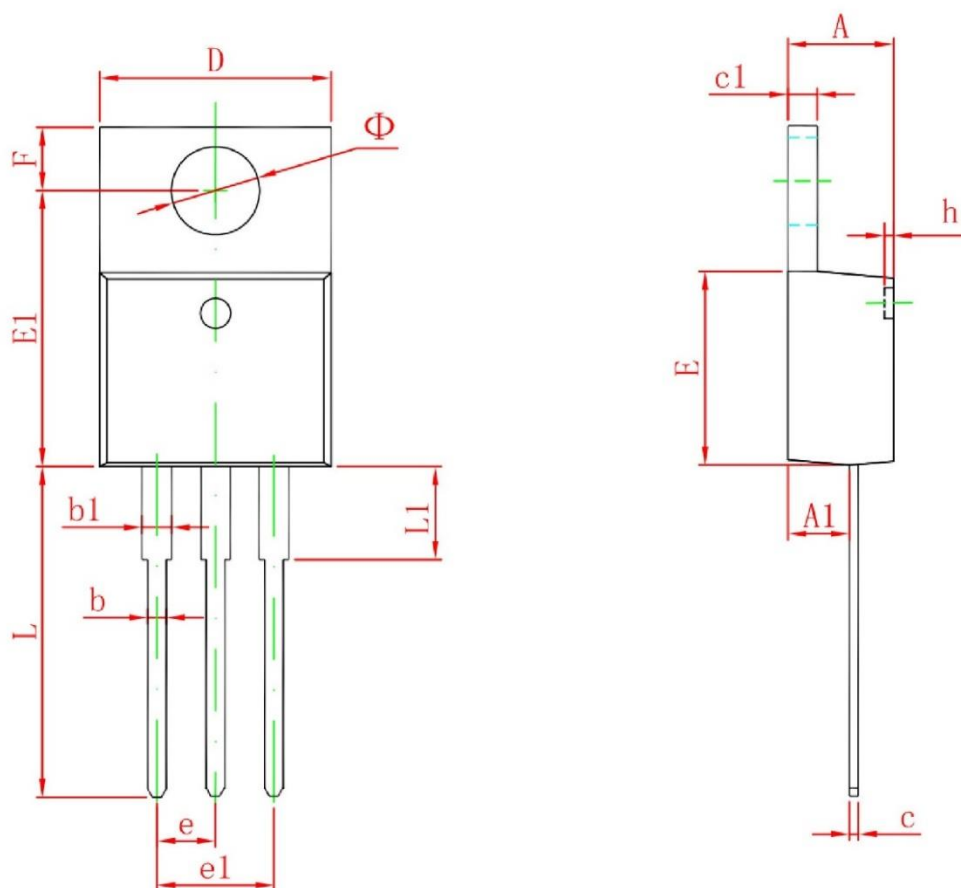
ELECTRICAL CHARACTERISTICS

($V_I-V_O=5\text{V}$, $0<T_J<125^\circ\text{C}$, $I_O=500\text{mA}$, $I_{\text{MAX}}=1.5\text{A}$, $P_{\text{MAX}}=20\text{W}$, unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Load Regulation	ΔV_O	$T_A=25^\circ\text{C}$, $10\text{mA} \leq I_O \leq I_{\text{MAX}}$	$V_O \leq 6\text{V}$	18	25	mV
			$V_O \leq 5\text{V}$	0.4	0.5	%/ V_O
	ΔV_O	$10\text{mA} \leq I_O \leq I_{\text{MAX}}$	$V_O \leq 5\text{V}$	40	70	mV
			$V_O \leq 5\text{V}$	0.8	1.5	%/ V_O
Line Regulation	ΔV_O	$T_A=25^\circ\text{C}$, $3\text{V} \leq V_I-V_O \leq 40\text{V}$		0.01	0.04	%/ V
		$T_A=0 \sim 125^\circ\text{C}$, $3\text{V} \leq V_I-V_O \leq 40\text{V}$		0.02	0.07	
Adjustable Pin Current	I_{ADJ}			46	100	μA
Adjustable Pin Current Change	ΔI_{ADJ}	$2.5\text{V} \leq V_I-V_O \leq 40\text{V}$, $10\text{mA} \leq I_O \leq I_{\text{MAX}}$, $P_D \leq P_{\text{MAX}}$		2.0	5	μA
Reference Voltage	V_{REF}	$3\text{V} \leq V_I-V_O \leq 40\text{V}$, $10\text{mA} \leq I_O \leq I_{\text{MAX}}$, $P_D \leq P_{\text{MAX}}$	1.2	1.25	1.3	V
Temperature Stability	STT			0.7		%/ V_O
Minimum Load Current for regulation	$I_{\text{L(MIN)}}$	$V_I-V_O=40\text{V}$		3.5	10	mA
Maximum output Current	$I_{\text{O(MAX)}}$	$V_I-V_O=15\text{V}$, $P_D \leq P_{\text{MAX}}$	1.5	2.2		A
		$V_I-V_O=15\text{V}$, $P_D \leq P_{\text{MAX}}$, $T_A=25^\circ\text{C}$	0.15	0.4		
RMS Noise v.s. % of V_{out}	e_N	$T_A=25^\circ\text{C}$, $10\text{Hz} \leq F \leq 10\text{KHz}$		0.003	0.01	%/ V_O
Ripple Rejection	RR	$V_O=10\text{V}$, $F=120\text{Hz}$, $C_{\text{ADJ}}=0$		60		dB
		$V_O=10\text{V}$, $F=120\text{Hz}$, $C_{\text{ADJ}}=10\mu\text{F}$	66	75		
Load-term Stability, $T_J=T_{\text{HIGH}}$	ST	$T_A=25^\circ\text{C}$, 1000hr		0.3	1	%

Note: Testing with low duty pulse should be used to avoid heating effect.

TO-220-3L Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.470	4.670	0.176	0.184
A1	2.520	2.820	0.099	0.111
b	0.710	0.910	0.028	0.036
b1	1.170	1.370	0.046	0.054
c	0.310	0.530	0.012	0.021
c1	1.170	1.370	0.046	0.054
D	10.010	10.310	0.394	0.406
E	8.500	8.900	0.335	0.350
E1	12.060	12.460	0.475	0.491
e	2.540 TYP		0.100 TYP	
e1	4.980	5.180	0.196	0.204
F	2.590	2.890	0.102	0.114
h	0.000	0.300	0.000	0.012
L	13.400	13.800	0.528	0.543
L1	3.560	3.960	0.140	0.156
Φ	3.735	3.935	0.147	0.155

All products, product specifications and data are subject to change without notice to improve reliability, function or design or otherwise.