

3-TERMINAL 1.5A POSITIVE ADJUSTABLE VOLTAGE REGULATOR

DESCRIPTION

The LM317 is an adjustable 3-terminal positive voltage regulator designed to supply more than 1.5A of Output current with voltage adjustable from 1.3V-37V.

FEATURES

Output current up to 1.5A

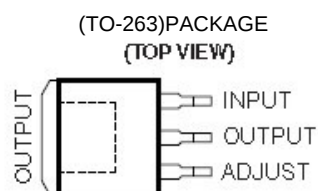
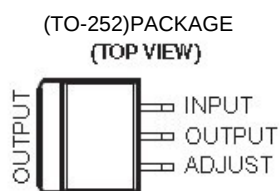
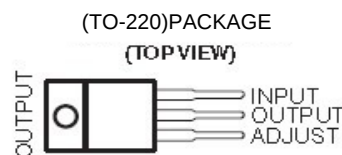
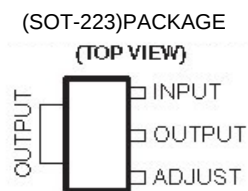
Output voltage adjustable from 1.3V to 37V

Internal short circuit protection

Internal over temperature protection

Safe-area compensation for output transistor

PIN DESCRIPTION



ABSOLUTE MAXIMUM RATINGS

(Ta=25°C, UNLESS OTHERWISE SPECIFIED)

PARAMETERS	SYMBOL	RATING	UNITS
Input-Output Voltage Difference	V_I-V_O	40	V
Lead Temperature	T_{LEAD}	260	°C
Power Dissipation	P_D	Internal Limited	-
Operating Temperature Range	T_{OPR}	0~+125	°C
Storage Temperature Range	T_{STG}	-60~+150	°C

ELECTRICAL CHARACTERISTICS

($V_I-V_O=5V$, $0<T_j<125^{\circ}C$, $I_O=500mA$, $I_{max}=1.5A$, $P_{max}=20W$, UNLESS OTHERWISE SPECIFIED)

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

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

Important statement:

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