LM317 3-TERMINAL ADJUSTABLE REGULATORS

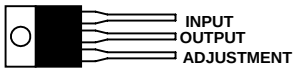
DESCRIPTION

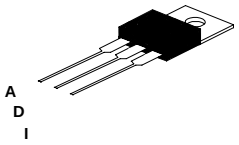
The LM317 are adjustable 3-terminal positive-voltage regulators capable of supplying 1.5A over a differential voltage range of 3V to 40V. They are exceptionally easy to use and require only two external resistors to set the output voltage. Both input and output regulation is better than standard fixed regulators.

In addition to higher performance than fixed regulators, these regulators offer full overload protection available only in integrated circuits. Included on the chip are current limit, thermal overload protection, and safe-area protection. All overload protection circuit remains fully functional even if the adjustment terminal is disconnected. Normally, no capacitors are needed unless the device is situated far from the input filter capacitors in which case an input bypass is needed. An optional output capacitor can be added to improve transient response.

The primary applications of each of these regulators is that of a programmable output regulator, but by connecting a fixed resistor between adjustment terminal and the output terminal, each device can be used as a precision current regulator. Even though the regulator is floating and sees only the input-to-output differential voltage, use of these devices to regulate output voltages that would cause the maximum-rated differential voltage to be exceeded if the output became shorted is not recommended

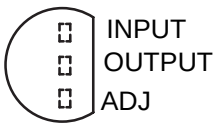
TO-220 PACKAGE
LM317T



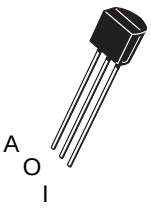


FEATURES

- Output Voltage Range Adjustable from 1.2 V to 37V
- Output Current Capability of 1.5A Max
- Input Regulation Typically 0.01% Per Input-Volt Change
- Output Regulation Typically 0.1%
- Peak Output Current Constant over Temperature Range of Regulator
- Popular 3-Lead TO-220 AB Package
- Ripple Rejection Typically 80 dB



TO-92
LM317LZ



ABSOLUTE MAXIMUM RATINGS

Input-Output Voltage Differential V_I - V_O	**40V**
Operating Junction Temperature Range	**0℃ to +125℃**
Continuous total dissipation at 25℃ free-air temperature	**2000mW**
Continuous total dissipation at (or below) 25℃ case temperature	**15W**
Storage Temperature	**–65℃ to +150℃**
Lead Temperature1.6 mm from case for 10 seconds	**260℃**

RECOMMENDED OPERATING CONDITIONS

	MIN	MAX	UNIT
OUTPUT CURRENT, I_O	10	1500	mA
OPERATING VIRTUAL JUNCTION TEMPERATURE,T_J	0	70	℃

Wing Shing Computer Components Co., (H.K.)Ltd. Tel:(852)2341 9276 Fax:(852)2797 8153
Homepage: http://www.wingshing.com E-mail: wsccltd@hkstar.com

LM317 3-TERMINAL ADJUSTABLE REGULATORS

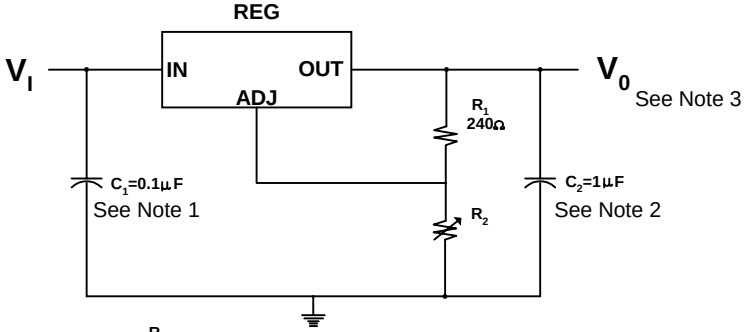
ELECTRICAL CHARACTERISTICS

Uniess otherwise noted ,these specifications apply for the following test conditions: Vi-Vo=5V and Io=0.5A. For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.

PARAMETER	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Input Regulation*2	V_I-V_O=3V to 40V *3	T_J=MIN to MAX		0.01	0.04	%/V
		I_O=10mA to 1.5A		0.02	0.07	
Ripple Rejection	V_O=10V, f=120HZ			65		dB
	V_O=10V, f=120HZ 10-μF capacitor between ADJ and ground		66	80		
Output Regulation	I_O=10mA TO 1.5A, T_J=25℃*3,	V_O≤5V		5	25	mV
		V_O>5V		0.1	0.5	%
	I_O=10mA to 1.5A *3	V_O≥5V		20	70	mV
		V_O>5V		0.3	1.5	%
Output Voltage Change With Temperature	T_J=MIN to MAX			1		%
Output Voltage long-term Drift*4	After 1000h at T_J = MAX and VI-VO=40V			0.3	1	%
Output Noise Voltage	f=10Hz to 10kHz, T_J=25℃			0.003		%
Minimum Output Current to Maintain Regulation	V_I-V_O=40V			3.5	10	mA
Peak Output Current	V_I-V_O≤15V		1.5	2.2		A
	V_I-V_O≤40V, T_J=25		0.15	0.4		
Adjustment-terminal Current				50	100	μA
Change in adjustment-terminal Current	V_I-V_O=2.5V to 40V, I_O=10mA to 1.5A			0.2	5.0	μA
Reference Voltage(Output to ADJ)	V_I-V_O=3V to 40V, IO=10mA to 1.5A, P≤15W		1.20	1.25	1.30	V

*1 All characteristics are measured with a 0.1-μF capacitor across the input and a 1-μF capacitor across the output.
*2 Input regulation is expressed here as the percentage change in output voltage per 1-V change at the input
*3 Pulse testing techniques are used to maintain the junction temperature as close to the ambient temperature as possible. Thermal effects must be taken into account separately.
*4 Since long-term drift cannot be measured on the individual devices prior to shipment. This specification is not intended to be a guarantee or warranty. It is an engineering estimate of the average drift to be expected from lot to lot.

TYPICAL APPLICATION DATA

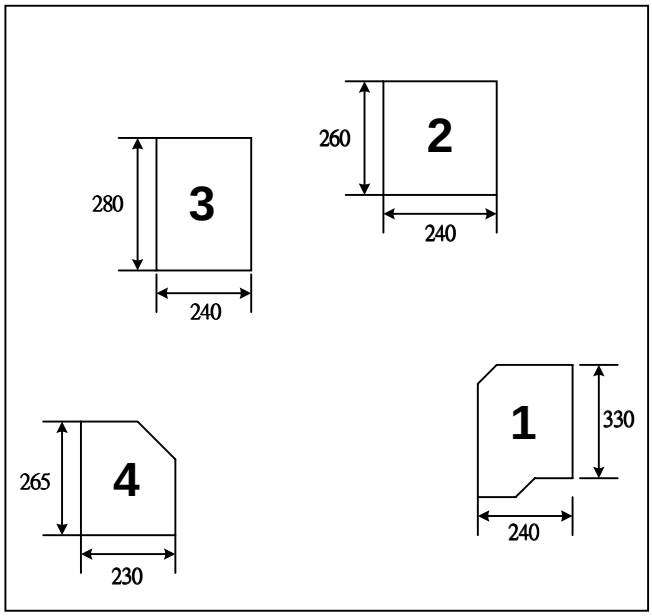


Output voltage is calculated from $V_O = V_{REF}\{1+\frac{R_2}{R_1}\}$

1. Use of an input bypass capacitor is recommended if regulator is far from filter capacitors.
2. Use of an output capacitor improves transient response but is optional.
3. V_{REF} equals the difference between the output and adjustment terminal voltages.

LM317 3-TERMINAL ADJUSTABLE REGULATORS

POSITIVE ADJUSTABLE REGULATOR



Chip Size: 2.45X1.85mm

PAD LOCATION LM317

PAD N	PAD NAME	COORDINATES µm	
		X	Y
1	ADJ	2120	410
2	OUTPUT	1730	1490
3	INPUT	1120	950
4	OUTPUT	90	100