

LM337

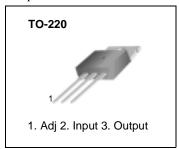
3-Terminal 1.5A Negative Adjustable Regulator

Features

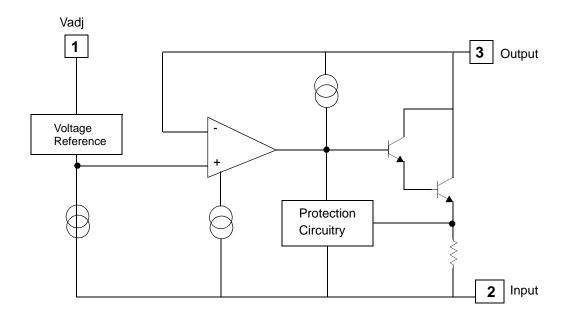
- Output current in excess of 1.5A
- Output voltage adjustable between -1.2V and 37V
- Internal thermal overload protection
- · Internal short circuit current limiting
- Output transistor safe area compensation
- Floating operation for high voltage applications
- Standard 3-pin TO-220 package

Description

The LM337 is a 3-terminal negative adjustable regulator. It supplies in excess of 1.5A over an output voltage range of -1.2V to - 37V. This regulator requires only two external resistor to set the output voltage. Included on the chip are current limiting, thermal overload protection and safe area compensation.



Internal Block Diagram



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Input-Output Voltage Differential	Vı - Vo	40	V
Power Dissipation	PD	Internally limited	W
Operating Temperature Range	TOPR	0 ~ +125	°C
Storage Temperature Range	TSTG	-65 ~+125	°C

Electrical Characteristics

(VI - VO = 5V, IO = 40mA, 0° C \leq TJ \leq +125 $^{\circ}$ C, PDMAX = 20W, unless otherwise specified)

Parameter	Symbol	Conditions	Min	Тур.	Max.	Unit
Line Regulation (Note1)	Dr	TA = +25°C 3V ≤ I V _I - V _O I ≤ 40V	-	0.01	0.04	%/ V
Line Regulation (Note1)	Rline	3V ≤ I VI - VO I ≤ 40V	-	0.02	0.07	
Load Regulation (Note1)	Rload	$T_A = +25^{\circ}C$ 10mA \le IO \le 0.5A	-	15	50	mV
		10mA ≤ I _O ≤ 1.5A	-	15	150	
Adjustable Pin Current	IADJ	-	-	50	100	μΑ
Adjustable Pin Current Change	ΔIADJ	TA =+ 25°C 10mA ≤ I _O ≤ 1.5A 3V ≤I V _I - V _O I ≤ 40V	-	2	5	μΑ
		TA =+ 25°C	-1.213	-1.250	-1.287	
Reference Voltage	VREF	3V ≤ I V _I - V _O I ≤ 40V 10mA ≤ I _O ≤ 1.5A	-1.200	-1.250	-1.300	V
Temperature Stability	STT	0°C ≤ TJ ≤ +125°C	-	0.6	-	%
Minimum Load Current to Maintain Regulation	IL(MIN)	3V ≤I V _I - V _O I ≤ 40V	-	2.5	10	
		3V ≤I V _I - V _O I ≤ 10V	-	1.5	6	mA
Output Noise	eN	TA =+25°C 10Hz ≤ f ≤10KHz	-	0.003	-	V/10 ⁶
Ripple Rejection Ratio	RR	Vo = -10V, f = 120Hz	-	60	-	
		C _{ADJ} = 10μF (Note2)	66	77	-	dB
Long Term Stability	ST	TJ = 125°C ,1000Hours	-	0.3	1	%
Thermal Resistance Junction to Case	R _θ JC	-	-	4	-	°C/W

Note

^{1.} Load and line regulation are specified at constant junction temperature. Change in VO due to heating effects must be taken into account separately. Pulse testing with low duty is used.

^{2.} CADJ, when used, is connected detween the adjustment pin and ground.

Typical Application

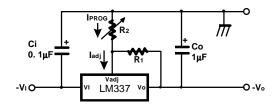


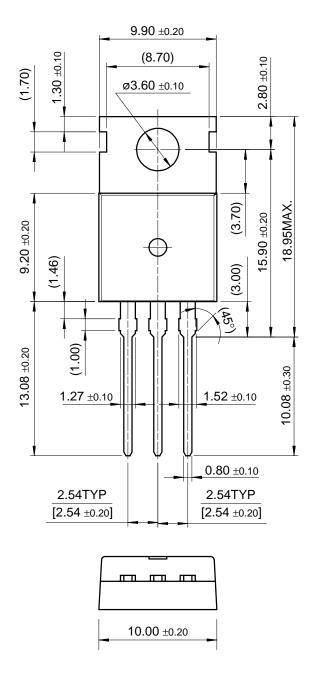
Figure 1. Programmable Regulator

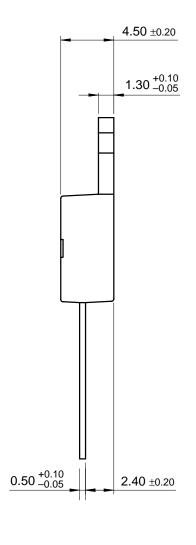
- Ci is required if regulator is located more then 4 inches from power supply filter.
 A 1.0μF solid tantalum or 10μF aluminum electrolytic is recommended.
 Co is necessary for stability. A 1.0μF solid tantalum or 10μF aluminum electrolytic is recommended.
- $V_O = -1.25V (1+R_2/R_1)$

Mechanical Dimensions

Package

TO-220





Ordering Information

Product Number	Package	Operating Temperature			
LM337T	TO-220	0°C to + 125°C			

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