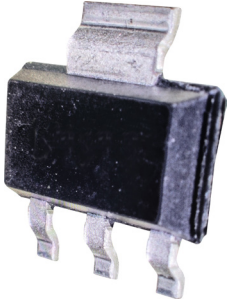


Positive Voltage Regulator Adjustable 3 Terminal

multicomp^{PRO}

RoHS
Compliant



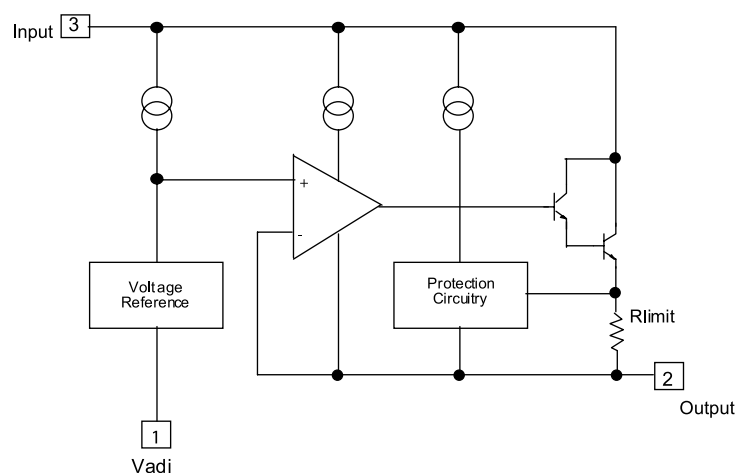
Features

- Internal thermal overload protection
- Internal short circuit current limiting
- Output transistor safe operating area compensation
- This monolithic integrated circuit is an adjustable 3-terminal positive voltage regulator designed to supply more than 1.5A of load current with an output voltage adjustable over a 1.2 to 37V. It employs internal current limiting , thermal shut-down and safe area compensation.

Absolute Maximum Ratings $T_a = 25^{\circ}\text{C}$

Parameter	Symbol	Rating
Input-Output Voltage Differential	$V_i - V_o$	40V
Temperature Coefficient of Output Voltage	$\Delta V_o / \Delta T$	$\pm 0.02\text{V}$
Power Dissipation	P_D	Internally limited (W)
Thermal Resistance Junction to Case	$R_{\theta JC}$	5°C/W
Lead Temperature	T_{LEAD}	230°C
Operating Junction Temperature Range	T_J	125°C
Storage Temperature Range	T_{stg}	-55°C to $+150^{\circ}\text{C}$

Internal Block Diagram



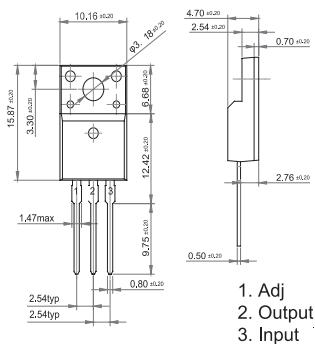
Positive Voltage Regulator Adjustable 3 Terminal

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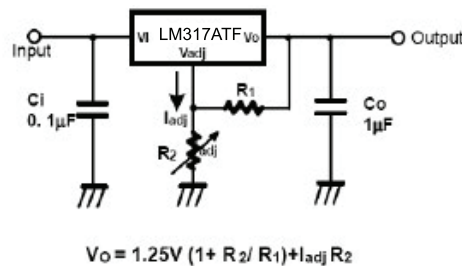
Electrical Characteristics (Vo-VI=5V, Io=0.5A, 0°C≤Tj≤+125°C, I_{MAX}=1.5A, P_{MAX}=20W, unless otherwise specified)

Parameter Name	Symbol	Test Conditions	Min	Typ	Max	Unit
Line Regulation	R _{line}	3V≤VI-Vo≤40V Ta=25°C		0.01	0.04	%V
		3V≤VI-Vo≤40V		0.02	0.07	
Load Regulation	R _{load}	Ta=25°C, 10mA≤Io≤I _{MAX} Vo<5V		18	25	mV%/Vo
			Vo≥5V		0.4	
		10mA≤Io≤I _{MAX} Vo<5V		40	70	
			Vo≥5V		0.8	
Adjustable Pin Current	I _{ADJ}			46	100	uA
Adjustable Pin Current Change	ΔI _{ADJ}	3V≤VI-Vo≤40V 10mA≤Io≤I _{MAX} , P _D ≤P _{MAX}		2	5	
Reference Voltage	V _{REF}	3V≤VI-Vo≤40V 10mA≤Io≤I _{MAX} , P _D ≤P _{MAX}	1.2	1.25	1.3	V
Temperature Stability	ST _T			0.7	1.5	%/Vo
Minimum Load Current to Maintain Regulation	I _{L(min)}	VI-Vo=40V		3.5	12	mA
Maximum Output Current	I _{O(max)}	VI-Vo≤15V, P _D ≤P _{MAX}	1	2.2		A
		VI-Vo≤40V, P _D ≤P _{MAX} Ta=25°C		0.3		
RMS Noise, % of V _{OUT}	e _N	Ta=25°C, 10Hz≤f≤10kHz		0.003	0.01	%/Vo
Ripple Rejection	R _R	Vo=10V, f =120Hz without C _{ADJ}		60		dB
		Vo=10V, f =120Hz, C _{ADJ} =10uF	66	75		
Long-Term Stability, T _J =T _{HIGH}	ST	Ta=25°C for end point measurements, 1000HR		0.3	1	%

Diagram



Typical Application



Part Number Table

Description	Part Number
Positive Voltage Regulator, 1.2 V to 37V, 1.5A, TO-220	LM317AT

Dimensions : Millimetres

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