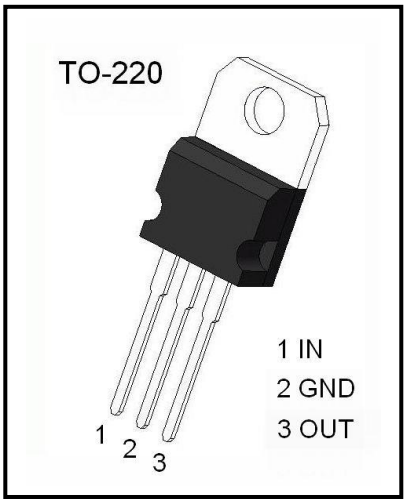
L7809

3-Terminal 1.0A Positive Voltage Regulator



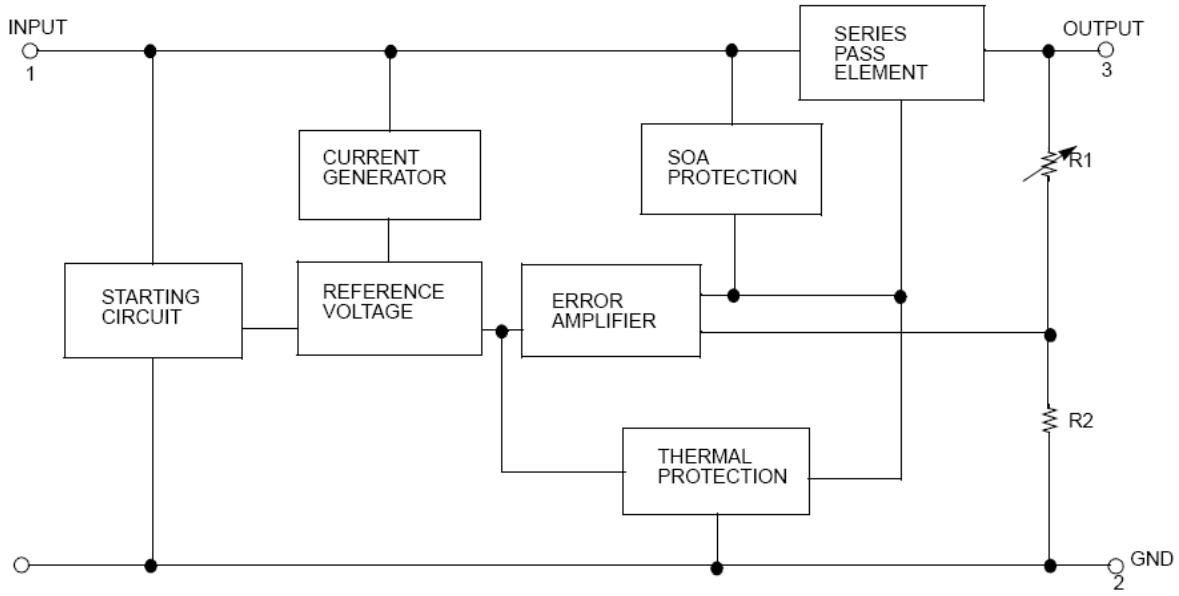
Features

Output Current up to 1.0A
Output Voltages of 9V
Thermal Overload Protection Short Circuit Protection
Output Transistor Safe Operating area (SOA)Protection

Description

The L7809 three-terminal positive regulators are available in the TO-220 package with several fixed output voltages making it useful in a wide range of applications.

Internal Block Digram



Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Input Voltage	V_{IN}	35	V
Thermal Resistance Junction-Case	$R_{\theta JC}$	2.5	°C/W
Thermal Resistance Junction-Air (Ta = +25°C)	$R_{\theta JA}$	92	°C/W
Operating Junction Temperature Range	T_{OPR}	0 ~ 150	°C
Storage Temperature Range	T_{STG}	-55 ~ + 150	°C

Electrical Characteristics

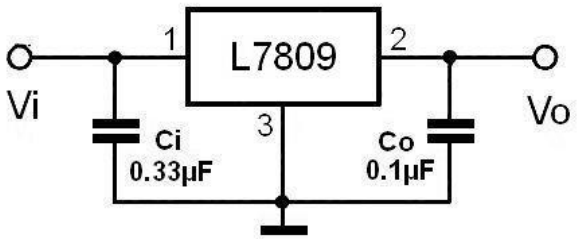
(Refer to the test circuits, $0 < T_J < +125°C$, I_O=500mA, V_I=16V, unless otherwise specified, C_I = 0.33μF, C_O=0.1μF)

Parameter	Symbol	Conditions		Value			Unit
				Min	Typ	Max	
Output Voltage	V_O	I_O= 5mA ~ 500mA V_I = 11.5 ~ 24V		8.55	9	9.45	V
Line Regulation(Note)	ΔV_O	I_O = 200mA T_j =25°C	V_I = 11.5V ~ 24V			300	mV
			V_I = 12V ~ 24V			150	
Load Regulation(Note)	ΔV_O	T_j =25°C	I_O= 5mA ~ 1A			240	mV
			I_O= 250mA ~ 750mA			120	
Quiescent Current	I_Q	Tj = 25°C				8.0	mA
Quiescent Current Change	ΔI_Q	I_O=5mA ~ 1.0A				0.5	mA
		I_O = 200mA , V_I = 11.5 ~ 24V				0.8	
Output Voltage Drift	$\Delta V/\Delta T$	I_O = 5mA			-1		mV/°C
Output Noise Voltage	V_N	f = 10HZ ~ 100KHZ			58		μV
Ripple Rejection	RR	f = 120Hz, V_I = 12 ~ 22V			80		dB
Dropout Voltage	V_D	T_j =25°C, I_O = 1.0A			2		V
Short Circuit Current	I_{SC}	T_j =25°C, V_I= 35V			300		mA
Peak Current	I_{PK}	T_j =25°C			1.5		A

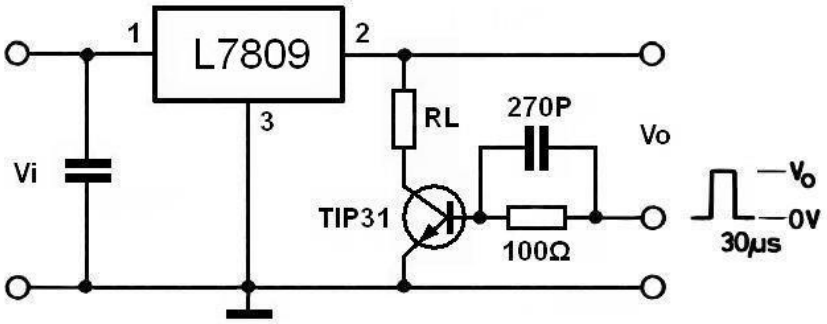
Notes:

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.

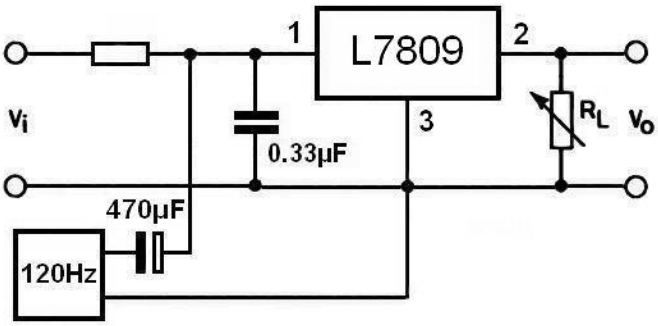
Test Circuits



DC Parameter



Load Regulation



Ripple Rejection

Package Dimensions (unit:mm)