



Features

Output Current up to 1.5A

Output Voltages of 12V

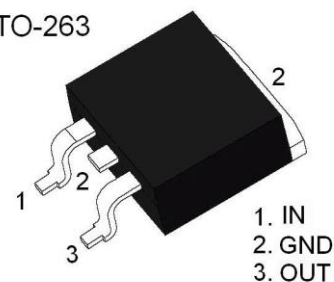
Thermal Overload Protection Short Circuit Protection

Output Transistor Safe Operating area (SOA)Protection

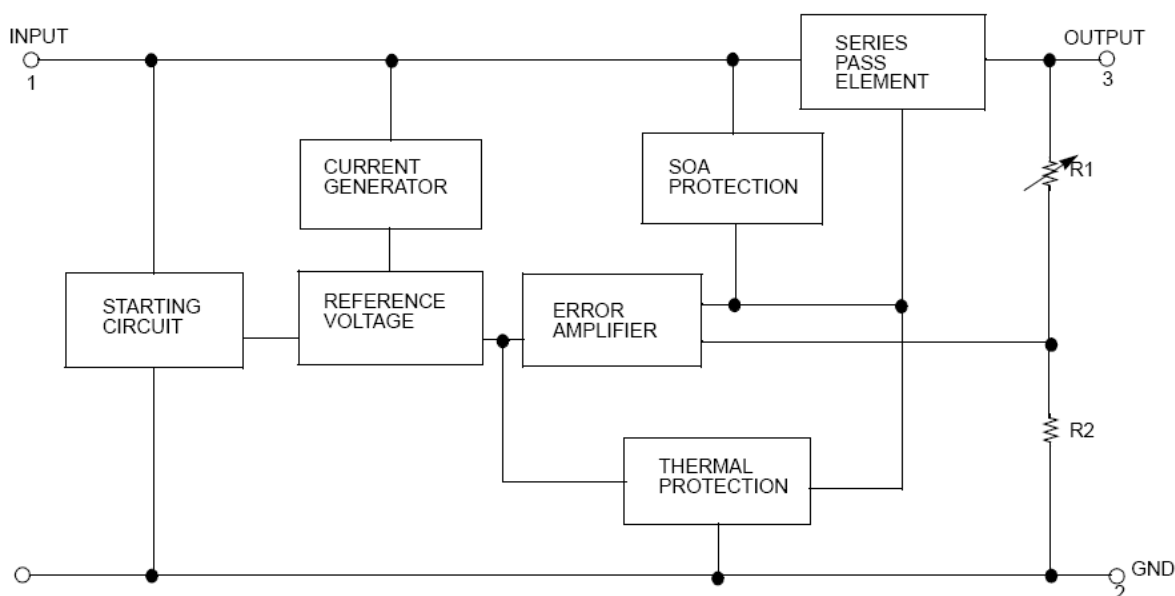
Description

The LM7812 three-terminal positive regulators are available in the TO-263 package with several fixed output voltages making it useful in a wide range of applications.

TO-263



Internal Block Diagram



Absolute Maximum Ratings

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


Electrical Characteristics

 (Refer to the test circuits , $I_O=1.0A$, $V_I=19V$, $C_I = 0.33\mu F$, $C_O=0.1\mu F$ unless otherwise specified)

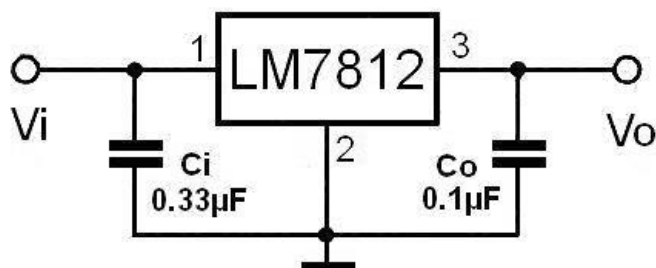
Parameter	Symbol	Conditions	Value			Unit
			Min	Typ	Max	
Output Voltage	V_O	$T_j = 25^\circ C$	11.5	12	12.5	V
		$I_O = 5mA \sim 1.5A$ $V_I = 14.5 \sim 27V$	11.4	12	12.6	V
Line Regulation(Note)	ΔV_O	$T_j = 25^\circ C$			240	mV
		$V_I = 14.5V \sim 30V$			120	
Load Regulation(Note)	ΔV_O	$T_j = 25^\circ C$			240	mV
		$I_O = 0.25A \sim 1.0A$			120	
Quiescent Current	I_Q	$T_j = 25^\circ C$			8.0	mA
Quiescent Current Change	ΔI_Q	$I_O = 5mA \sim 1.5A$			0.5	mA
		$I_O = 14.5V \sim 30V$			1.0	
Output Voltage Drift	$\Delta V / \Delta T$	$I_O = 5mA$		-1		mV/ $^\circ C$
Output Noise Voltage	V_N	$f = 10HZ \sim 100KHZ$, $T_A = 25^\circ C$		75		μV
Ripple Rejection	RR	$f = 120Hz$, $V_I = 15 \sim 25V$	55			dB
Dropout Voltage	V_D	$I_O = 1.0A$, $T_j = 25^\circ C$		2		V
Short Circuit Current	I_{SC}	$V_I = 35V$, $T_A = 25^\circ C$		300		mA
Peak Current	I_{PK}	$T_j = 25^\circ C$		2.2		A

Notes:

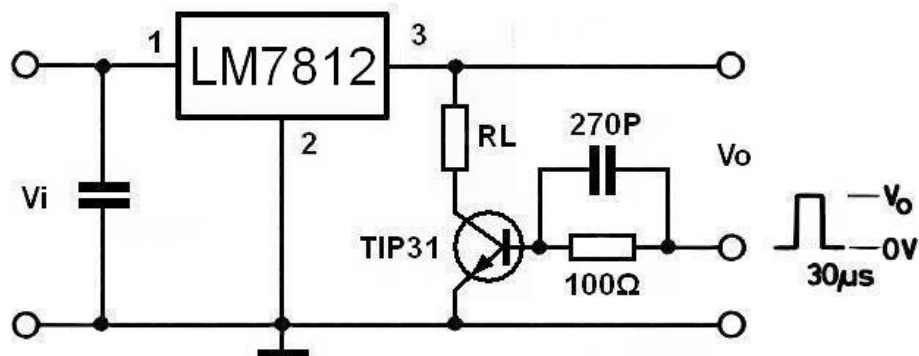
Load and line regulation are specified at constant junction temperature. Change in V_O due to heating effects must be taken into account separately. Pulse testing with low duty is used.



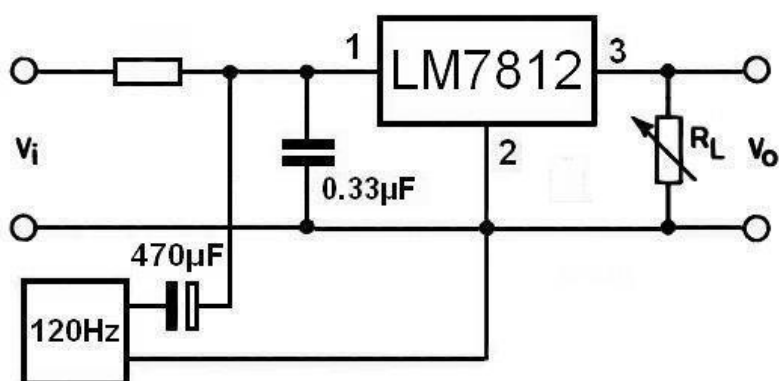
Test Circuits



DC Parameter



Load Regulation



Ripple Rejection



Package Dimensions

Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.30	4.70	0.169	0.185
A1	0.00	0.15	0.000	0.006
A2	4.30	4.55	0.169	0.179
B	1.10	1.50	0.043	0.059
b	0.70	0.90	0.028	0.035
b1	1.20	1.50	0.047	0.059
c	0.30	0.60	0.012	0.024
c1	1.17	1.37	0.046	0.054
D	9.90	10.20	0.390	0.402
E	8.50	8.90	0.335	0.350
e	2.44	2.64	0.096	0.104
e1	4.88	5.28	0.192	0.208
L	15.00	15.30	0.591	0.602
L1	5.20	5.40	0.205	0.213
L2	2.40	2.60	0.094	0.102
L3	1.60	1.80	0.063	0.071

