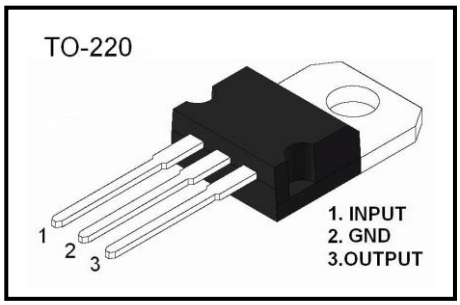
Description

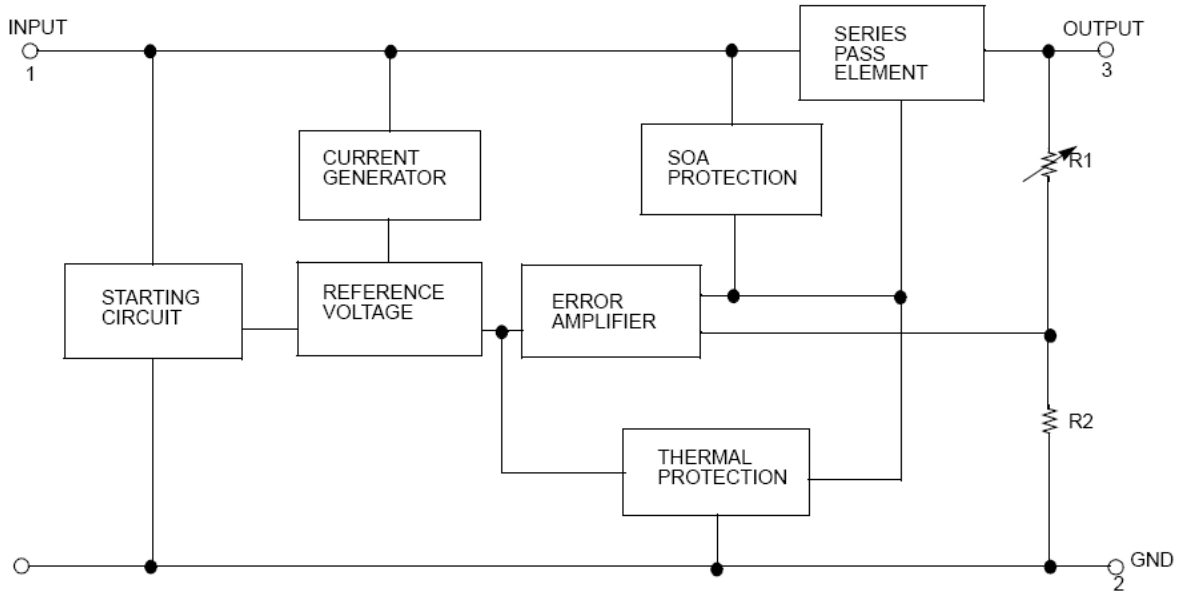
The L7812 three-terminal positive regulators are available in the TO-220 package with 12V fixed output voltages making it useful in a wide range of applications.



Features

Output Current up to 1.5A
Output Voltages of 12V
Thermal Overload Protection Short Circuit Protection
Output Transistor Safe Operating area (SOA)Protection

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 , I_O=500mA, V_I=19V, C_I = 0.33μF, C_O=0.1μF unless otherwise specified)

Parameter	Symbol	Conditions		Value			Unit
				Min	Typ	Max	
Output Voltage		Tj = 25°C		11.5	12	12.5	
	V_O	I_O= 5mA ~ 750mA V_I = 14.5 ~ 27V		11.4	12	12.6	V
Line Regulation(Note)	ΔV_O	Tj = 25°C	V_I = 14.5V ~ 30V			100	mV
			V_I = 16V ~ 30V			50	
Load Regulation(Note)	ΔV_O	Tj = 25°C	I_O= 5mA ~ 1.5A			240	mV
			I_O= 0.25A ~ 1.0A			120	
Quiescent Current	I_Q	Tj = 25°C				8.0	mA
Quiescent Current Change	ΔI_Q	I_O=5mA ~ 1.5A				0.5	mA
		I_O = 14.5V ~ 30V				0.8	
Output Voltage Drift	$\Delta V / \Delta T$	I_O = 5mA			-0.8		mV/°C
Output Noise Voltage	V_N	f = 10HZ ~ 100KHZ, T_A = 25°C			75		μV
Ripple Rejection	RR	f = 120Hz, V_I = 15 ~ 25V			80		dB
Dropout Voltage	V_D	I_O = 1.0A ,Tj =25°C			2		V
Short Circuit Current	I_{SC}	V_I= 35V, T_A =25°C			200		mA
Peak Current	I_{PK}	T j =25°C			2.2		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

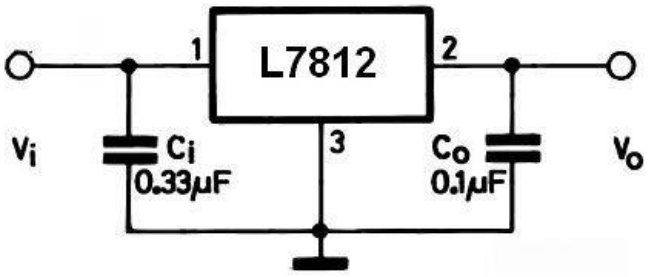


Figure 1. DC Parameters

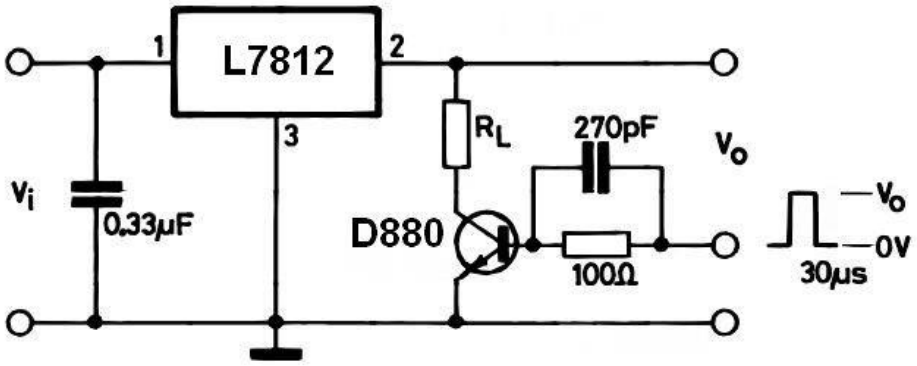


Figure 2. Load Regulation

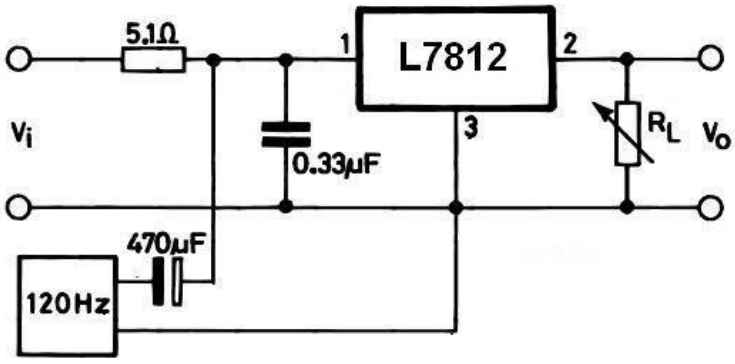
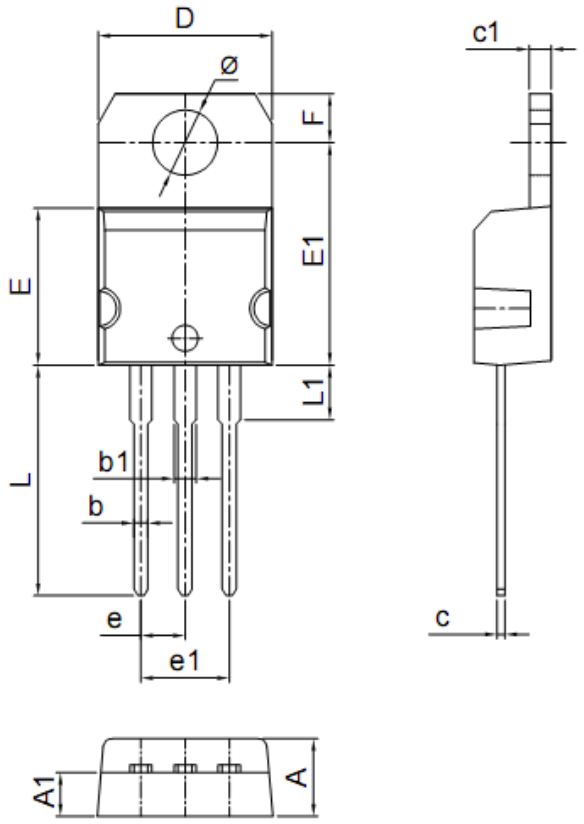


Figure 3. Ripple Rejection

Package Dimensions



Dim	Millimeter		Inches	
	Min.	Max.	Min.	Max.
A	4.30	4.70	0.171	0.184
A1	2.52	2.82	0.099	0.111
b	0.71	0.91	0.028	0.036
b1	1.17	1.37	0.046	0.054
c	0.40	0.55	0.012	0.020
c1	1.17	1.37	0.046	0.054
D	9.90	10.20	0.390	0.402
E	8.90	9.10	0.335	0.350
E1	12.50	13.00	0.472	0.492
e	2.44	2.64	0.096	0.104
e1	4.88	5.28	0.192	0.208
F	2.60	2.80	0.102	0.110
L	12.70	13.70	0.520	0.543
L1	2.90	3.30	0.150	0.165
Φ	3.75	3.95	0.142	0.156