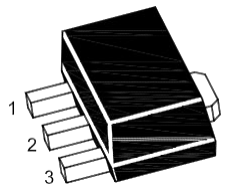
SL78L09

3-Terminal Voltage Regulator

Features

- Input voltage:up to 30V
- Output:9V
- Output current up to 100 mA, internal thermal overload protection and short-circuit limiting.



1. OUT 2. GND 3. IN

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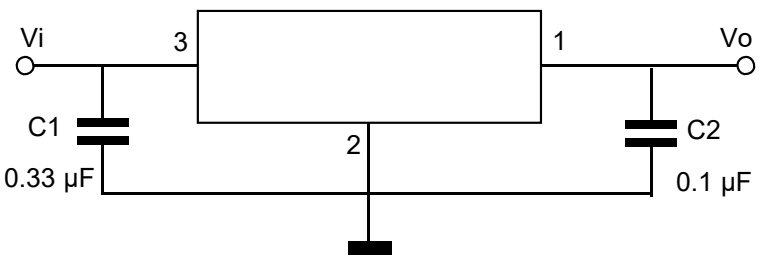
Maximum Ratings

Ratings at T_A = 25˚C ambient temperature unless otherwise specified.

Parameter	Symbols	Value	Units
Input Voltage	V_I	30	V
Output Current	I_O	100	mA
Junction Temperature	T_J	150	˚C
Operating Temperature Range	T_{OPR}	-40～125	˚C
Power Dissipation	P_D	500	mW
Storage Temperature Range	T_{STG}	-55～150	˚C



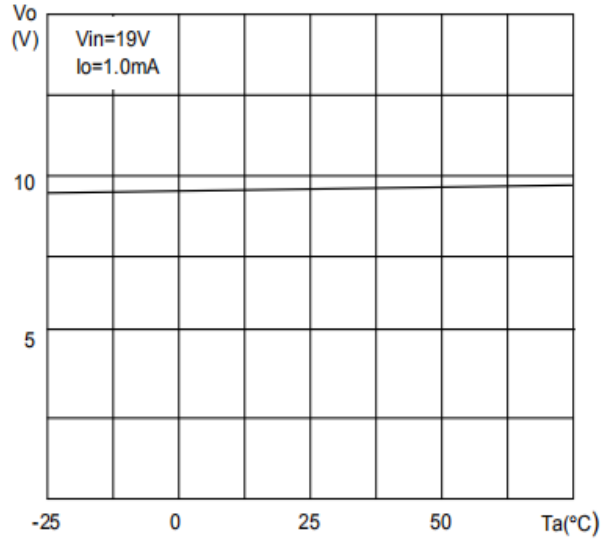
Electrical Characteristic

Ratings at T_A = 25°C ambient temperature, 0°C≤T_J≤125°C V_I=15V, Io=40mA, Ci=0.33μF,Co=0.1μF,unless otherwise specified.

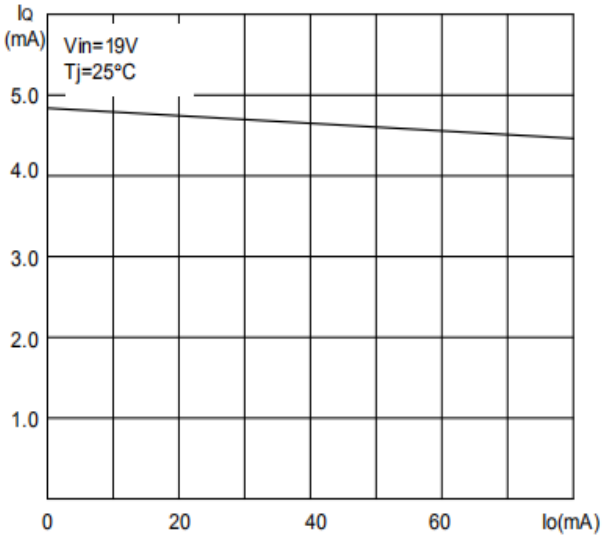
Parameter	Symbols	Test Conditions	Min	Typ	Max	Unit
Output Voltage	V_O	T_J=25°C	8.64	9	9.36	V
		I_O=1mA to 30mA V_I=11.5V to 24V	8.55	9	9.45	V
		I_O=1mA to 70mA	8.55	9	9.45	V
Line Regulation	$\triangle$Vo	V_I=11.5V to 24V T_J=25°C			200	mV
		V_I=13V to 24V T_J=25°C			150	mV
Load Regulation	$\triangle V_O$	I_O=1mA to 100 mA, T_J=25°C			90	mV
		I_O=1mA to 40 mA, T_J=25°C			45	mV
Ripple Rejection	RR	V_I=12V to 23V, T_J=25°C f=120Hz	36	44		dB
Output Noise Voltage	V_N	f=10Hz~100KHz		49		μV
Dropout Voltage	V_D	T_J=25°C		1.7		V
Quiescent Current	I_Q				5.5	mA
Quiescent Current Change	$\triangle I_Q$	V_I=13V to 24V			1.5	mA
		I_O=1mA to 40mA			0.1	mA

Ratings and Characteristic Curves

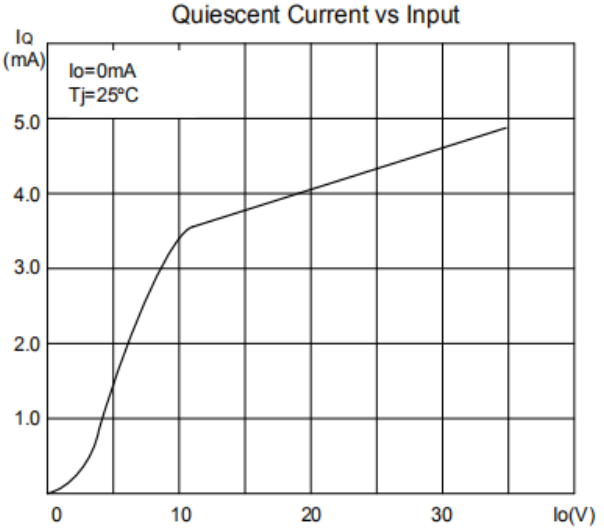
Output Voltage vs Ambient Temperature



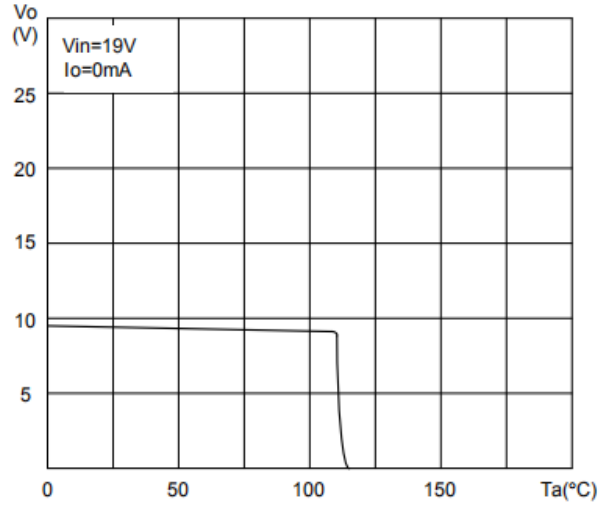
Quiescent Current vs Output Current



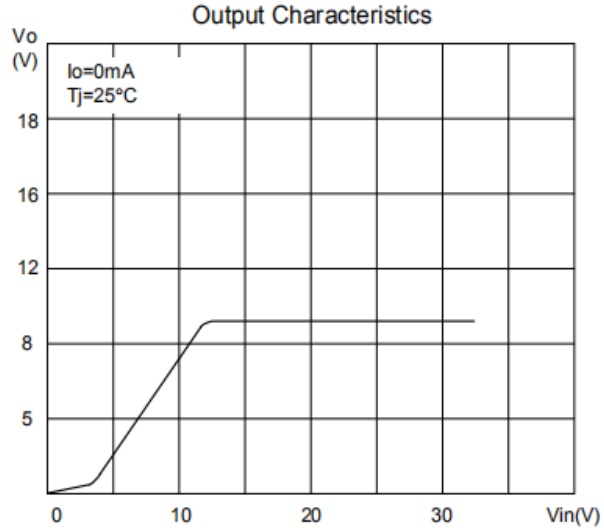
Quiescent Current vs Input



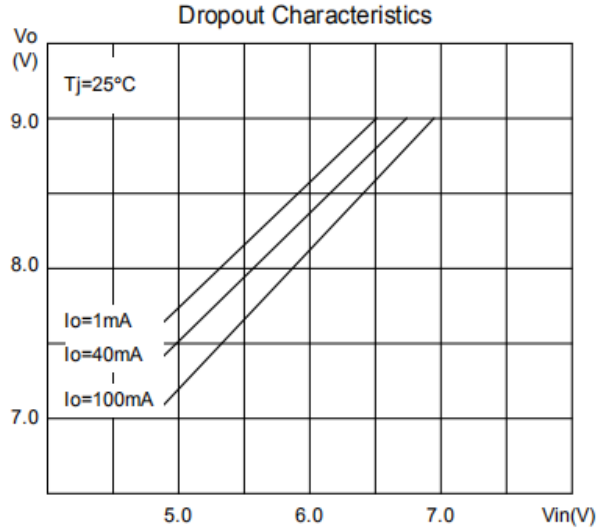
Thermal Shutdown



Output Characteristics



Dropout Characteristics



Package Outline

SOT-89

Dimensions in mm