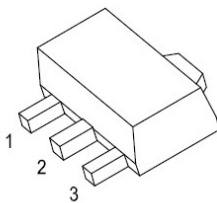


SOT-89-3L**SOT-89-3L Plastic-Encapsulate Voltage Regulators**

1. OUT

2. GND

3. IN

**特征 Features**

- Maximum output current I_{OM} : 0.1A
- Output voltage V_o : 9V
- Continuous total dissipation P_D : 0.6W ($T_a=25^\circ\text{C}$)

机械数据 Mechanical Data

- SOT-89-3L Small Outline Plastic Package
- Epoxy UL: 94V-0
- Mounting Position: Any

Marking: 78L09**Absolute Maximum Ratings** (Operating temperature Range applies unless otherwise specified.)

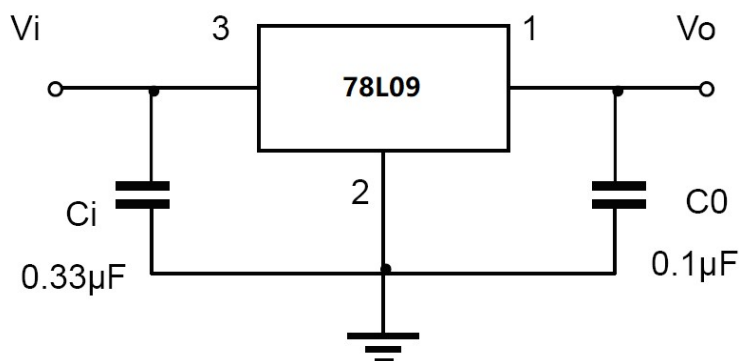
Parameters	Symbol	Value	Unit
Input Voltage	V_i	30	V
Operating Junction Temperature Range	T_{OPR}	-25-+125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-65-+150	$^\circ\text{C}$
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	166.7	$^\circ\text{C/W}$

Electrical Characteristics at Specified Virtual Junction Temperature

(Vi=16V, Io=40mA, Ci=0.33uF, Co=0.1uF, unless otherwise specified).

Parameter	Symbols	Test Condition	Limits			Unit
			Min	Typ	Max	
Output Voltage	V_o	25°C	8.73	9.0	9.27	V
		$12\text{V} \leq V_i \leq 24\text{V}, I_o=1\text{mA} \sim 40\text{mA}$	8.55	9.0	9.45	V
		$I_o=1\text{mA} \sim 70\text{mA}$	8.55	9.0	9.45	V
Load Regulation	ΔV_o	$I_o=1\text{mA} \sim 100\text{mA}$		19	90	mV
		$I_o=1\text{mA} \sim 40\text{mA}$		11	40	mV
Line Regulation	ΔV_o	$12\text{V} \leq V_i \leq 24\text{V}$		45	175	mV
		$13\text{V} \leq V_i \leq 24\text{V}$		40	125	mV
Quiescent Current	I_q	25°C		4.1	6	mA
Quiescent Current Change	ΔI_q	$13\text{V} \leq V_i \leq 24\text{V}$			1.5	mA
	ΔI_q	$1\text{mA} \leq I_o \leq 40\text{mA}$			0.1	mA
Output Noise Voltage	V_N	$10\text{Hz} \leq f \leq 100\text{KHz}$	58			$\mu\text{V}/V_o$
Ripple Rejection	RR	$15\text{V} \leq V_i \leq 25\text{V}, f=120\text{Hz}$		45		dB
Dropout Voltage	V_d	25°C		1.7		V

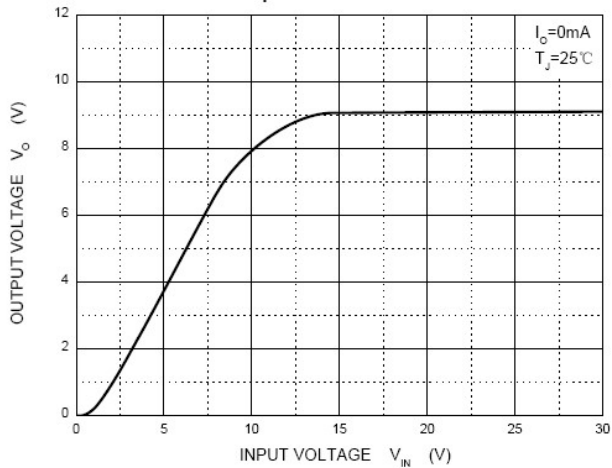
* Pulse test.

TYPICAL APPLICATION

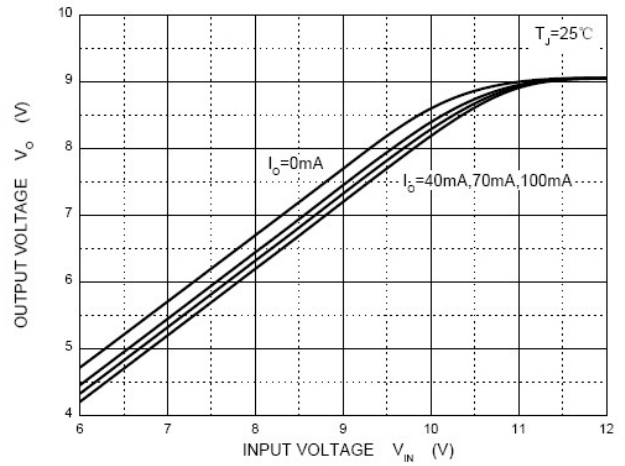
Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

Typical characteristics

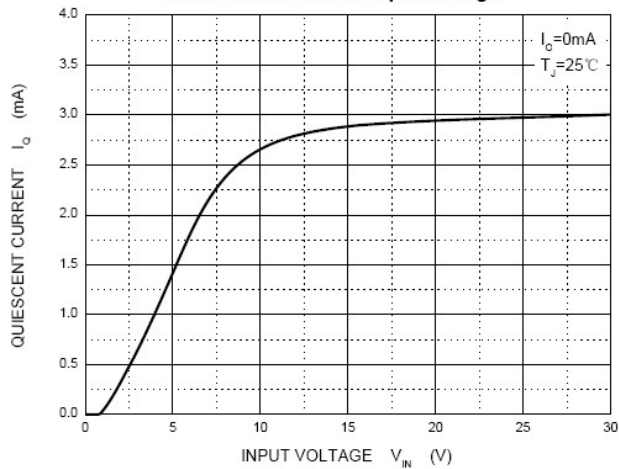
Output Characteristics



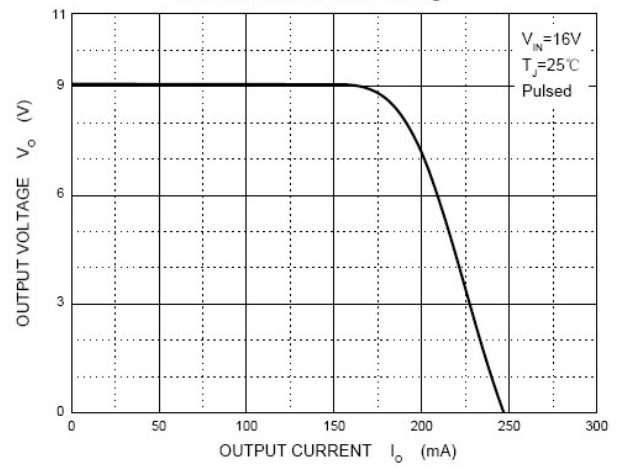
Dropout Characteristics



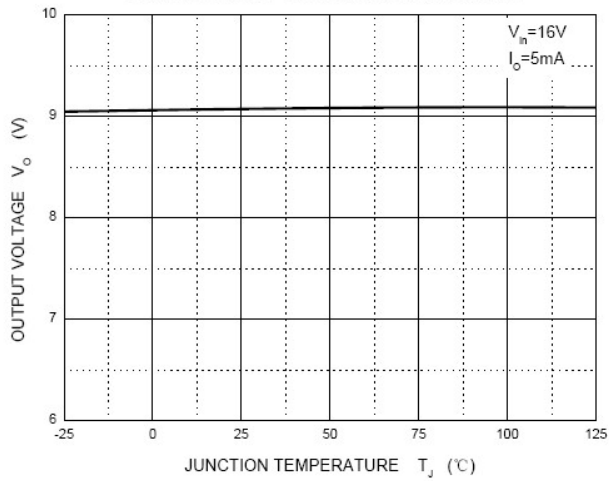
Quiescent Current vs Input Voltage



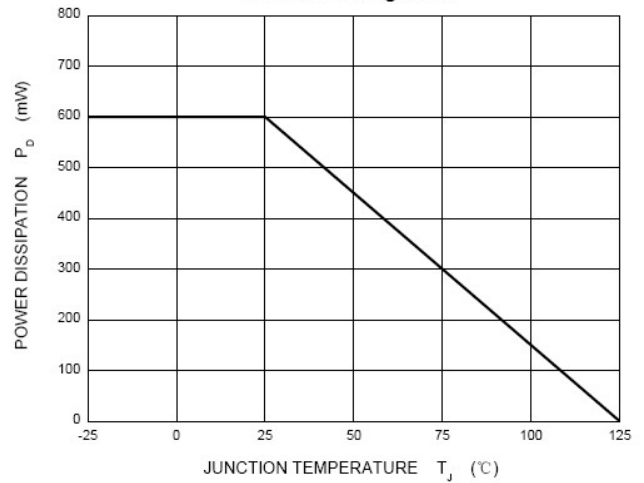
Current Cut-off Grid Voltage



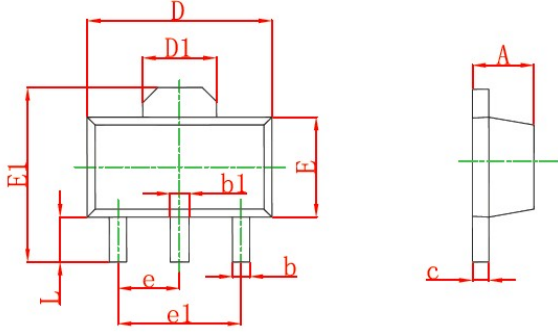
Output Voltage vs Junction Temperature



Power Derating Curve



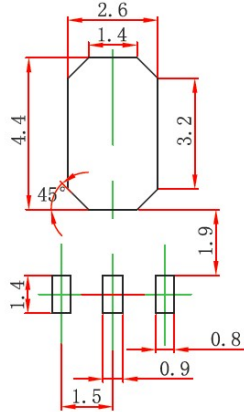
SOT-89-3L PACKAGE OUTLINE Plastic surface mounted package



Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	1.400	1.600	0.055	0.063
b	0.320	0.520	0.013	0.020
b1	0.400	0.580	0.016	0.023
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.550 REF.		0.061 REF.	
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500 TYP.		0.060 TYP.	
e1	3.000 TYP.		0.118 TYP.	
L	0.900	1.200	0.035	0.047

Precautions: PCB Design

Recommended land dimensions for SOT-89-3L diode. Electrode patterns for PCBs



- Note:
1. Controlling dimension: in millimeters.
 2. General tolerance: $\pm 0.05\text{mm}$.
 3. The pad layout is for reference purposes only.