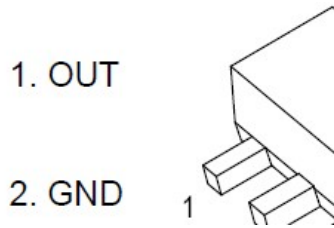


Three-terminal positive voltage regulator

SOT-89-3L



Marking: 78L12

特征 Features

- Maximum output current I_{OM} : 0.1A
- Output voltage V_o : 12V
- 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

Absolute Maximum Ratings (Operating temperature Range applies unless otherwise specified.)

Parameters	Symbol	Value	Unit
Input Voltage	V_i	35	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	$^\circ\text{C/W}$

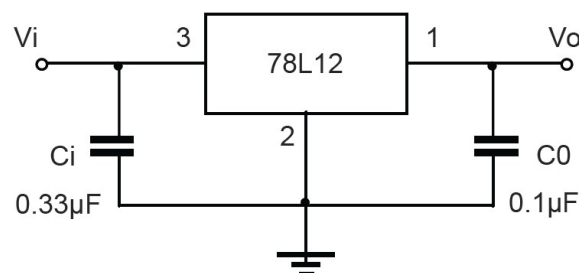
Electrical Characteristics at Specified Virtual Junction Temperature

($V_i=19\text{V}$, $I_o=40\text{mA}$, $C_i=0.33\mu\text{F}$, $C_o=0.1\mu\text{F}$, unless otherwise specified).

Parameter	Symbols	Test Condition	Limits			Unit
			Min	Typ	Max	
Output Voltage	V_o	25°C	11.5	12	12.5	V
		$14\text{V} \leq V_i \leq 27\text{V}, I_o=1\text{mA} \sim 40\text{mA}$	11.4	12	12.6	V
		$I_o=1\text{mA} \sim 70\text{mA}$	11.4	12	12.6	V
Load Regulation	ΔV_o	$I_o=1\text{mA} \sim 100\text{mA}$		22	100	mV
		$I_o=1\text{mA} \sim 40\text{mA}$		13	50	mV
Line Regulation	ΔV_o	$14.5\text{V} \leq V_i \leq 27\text{V}$		55	250	mV
		$16\text{V} \leq V_i \leq 27\text{V}$		49	200	mV
Quiescent Current	I_q	25°C		4.3	6.5	mA
Quiescent Current Change	ΔI_q	$16\text{V} \leq V_i \leq 27\text{V}$			1.5	mA
	ΔI_q	$1\text{mA} \leq I_o \leq 40\text{mA}$			0.1	mA
Output Noise Voltage	V_N	$10\text{Hz} \leq f \leq 100\text{KHz}$		70		$\mu\text{V}/V_o$
Ripple Rejection	RR	$15\text{V} \leq V_i \leq 25\text{V}, f=120\text{Hz}$	37	42		dB
Dropout Voltage	V_d	25°C		1.7		V

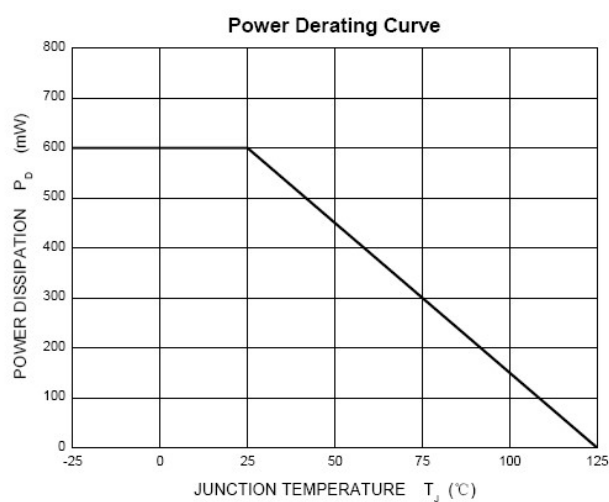
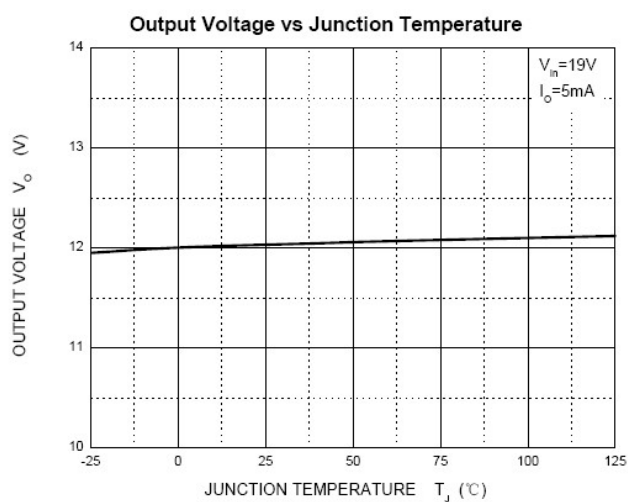
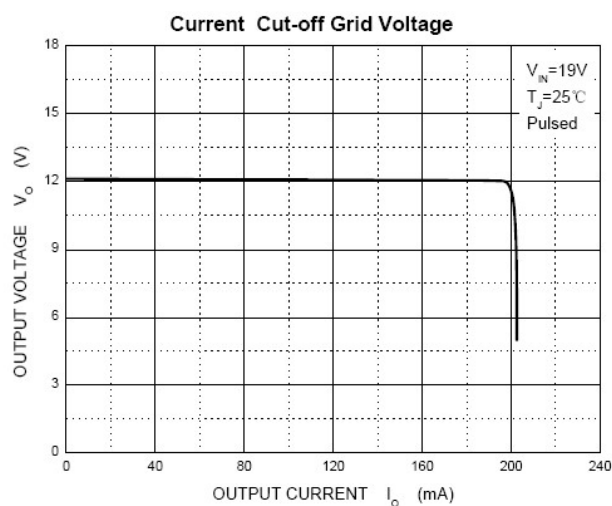
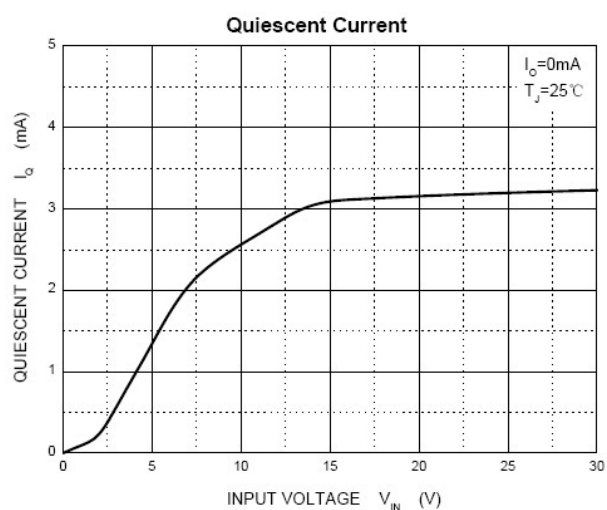
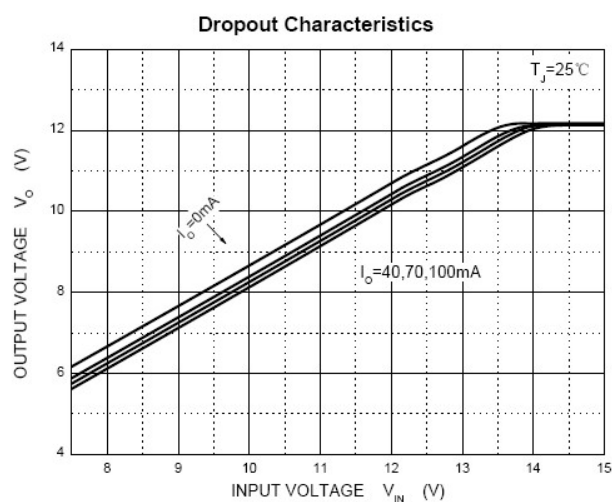
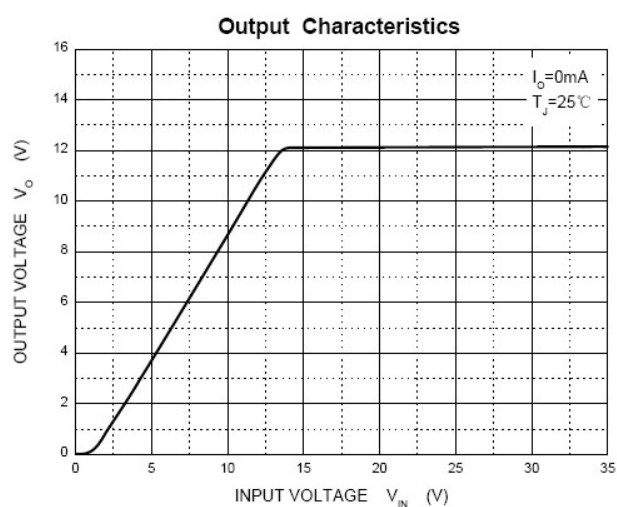
* Pulse test.

TYPICAL APPLICATION

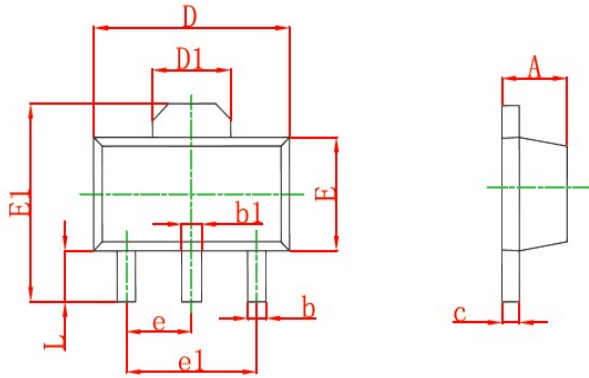


Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

Typical characteristics



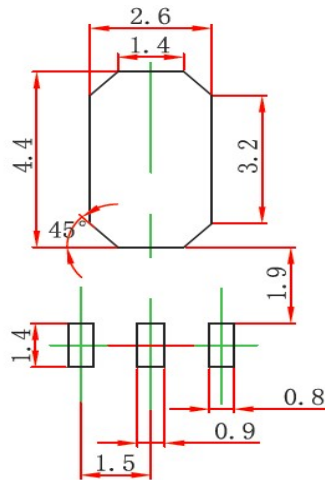
SOT-89-3L PACKAGE OUTLINE Plastic surface mounted package



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.

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