



# SOT-89 Encapsulate Three Terminal Voltage Regulator

## CJ78L09 Three-terminal positive voltage regulator

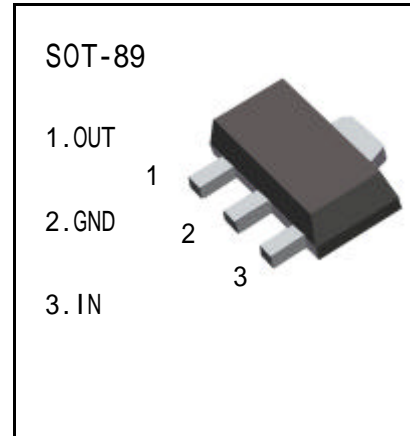
### FEATURES

Maximum Output current

$I_{OM}$ : 0.1 A

Output voltage

$V_o$ : 9 V



**ABSOLUTE MAXIMUM RATINGS** ( Operating temperature range applies unless otherwise specified )

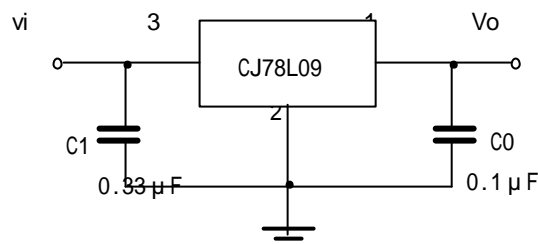
Parameter	Symbol	Value	Unlts
Input Voltage	$V_i$	30	V
Operating Junction Temperature Range	$T_{OPR}$	0 +125	
Storage Temperature Range	$T_{STG}$	-55- +150	

### ELECTRICAL CHARACTERISTICS

( $V_i=15V, I_o=40mA, 0 < T_j < 125$  ,  $C_1=0.33 \mu F, C_o=0.1 \mu F$ , unless otherwise specified )

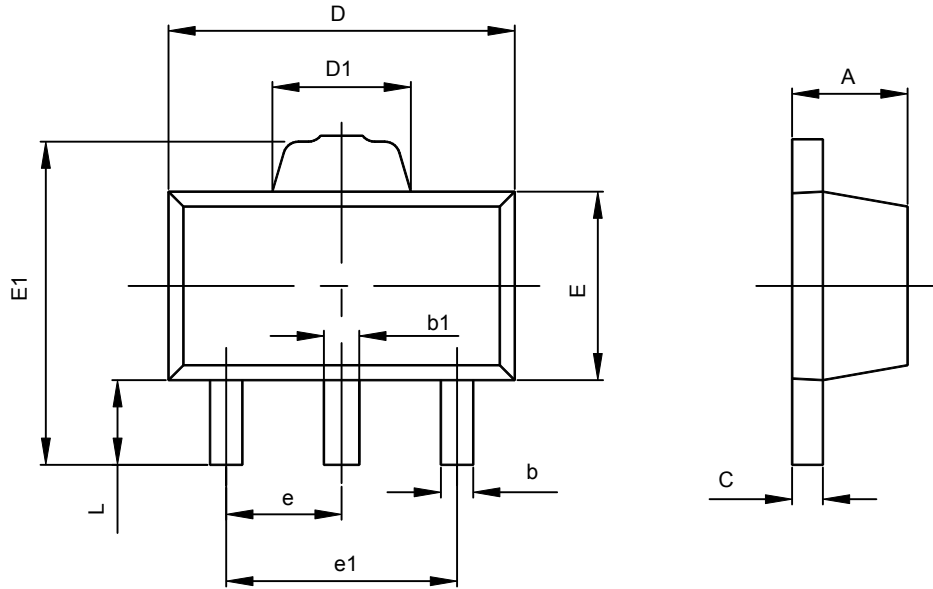
Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Output voltage	$V_o$	$T_j=25$	8.64	9.0	9.36	V
		12V $V_i$ , 24V, $I_o=1mA-40mA$	8.55	9.0	9.45	V
		11.5V $V_i$ , $V_{MAX}$ , $I_o=1mA-70mA$	8.55	9.0	9.45	V (note)
Load Regulation	$V_o$	$T_j=25$ , $I_o=1mA-100mA$		19	90	mV
		$T_j=25$ , $I_o=1mA-40mA$		11	40	mV
Line regulation	$V_o$	12V $V_i$ , 24V, $T_j=25$		45	175	mV
		13V $V_i$ , 24V, $T_j=25$		40	125	mV
Quiescent Current	$I_q$			4.1	6.0	mA
Quiescent Current Change	$I_q$	8V $V_i$ , 20V			1.5	mA
	$I_q$	1mA $I_o$ , 40mA			0.1	mA
Output Noise Voltage	$V_n$	10Hz f 100KHz		58		$\mu V$
Ripple Rejection	RR	15V $V_i$ , 25V, f=120Hz, $T_j=25$		45		dB
Dropout Voltage	$V_d$	$T_j=25$		1.7		V

### TYPICAL APPLICATION



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

## SOT-89-3L PACKAGE OUTLINE DIMENSIONS



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	0.360	0.560	0.014	0.022
c	0.350	0.440	0.014	0.017
D	4.400	4.600	0.173	0.181
D1	1.400	1.800	0.055	0.071
E	2.300	2.600	0.091	0.102
E1	3.940	4.250	0.155	0.167
e	1.500TYP		0.060TYP	
e1	2.900	3.100	0.114	0.122
L	0.900	1.100	0.035	0.043