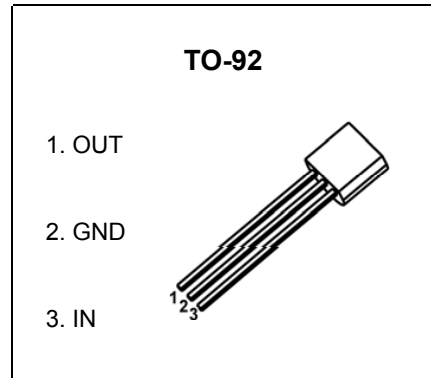


**TO-92 D`UghjWEncapsulate Voltage Regulators**

**CJ78L09** Three-terminal positive voltage regulator

**FEATURES**

- Maximum output current  
I<sub>OM</sub>: 0.1A
- Output voltage  
V<sub>O</sub>: 9V
- Continuous total dissipation  
P<sub>D</sub>: 0.625 W (T<sub>a</sub>= 25 °C)



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

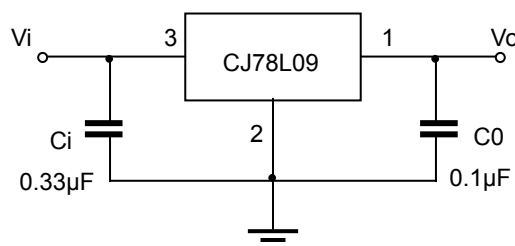
Parameter	Symbol	Value	Unit
Input Voltage	V <sub>i</sub>	30	V
Thermal Resistance from Junction to Ambient	R <sub>θJA</sub>	160	°C/W
Operating Junction Temperature Range	T <sub>OPR</sub>	-25~+125	°C
Storage Temperature Range	T <sub>STG</sub>	-65~+150	°C

**ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JINCTION TEMPERATURE** (V<sub>i</sub>=16V, I<sub>o</sub>=40mA, C<sub>i</sub>=0.33μF, C<sub>o</sub>=0.1μF, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit	
Output voltage	V <sub>o</sub>	25°C	8.64	9.0	9.36	V	
		0-125°C	12V ≤ V <sub>i</sub> ≤ 24V, I <sub>o</sub> = 1mA-40mA	8.55	9.0	9.45	V
			I <sub>o</sub> = 1mA-70mA	8.55	9.0	9.45	V
Load Regulation	ΔV <sub>o</sub>	I <sub>o</sub> = 1mA-100mA	25°C	19	90	mV	
		I <sub>o</sub> = 1mA-40mA	25°C	11	40	mV	
Line regulation	ΔV <sub>o</sub>	12V ≤ V <sub>i</sub> ≤ 24V	25°C	45	175	mV	
		13V ≤ V <sub>i</sub> ≤ 24V	25°C	40	125	mV	
Quiescent Current	I <sub>q</sub>	25°C		4.1	6.0	mA	
Quiescent Current Change	ΔI <sub>q</sub>	13V ≤ V <sub>i</sub> ≤ 24V	0-125°C		1.5	mA	
	ΔI <sub>q</sub>	1mA ≤ I <sub>o</sub> ≤ 40mA	0-125°C		0.1	mA	
Output Noise Voltage	V <sub>N</sub>	10Hz ≤ f ≤ 100KHz	25°C	58		μV/V <sub>o</sub>	
Ripple Rejection	RR	15V ≤ V <sub>i</sub> ≤ 25V, f = 120Hz	0-125°C	45		dB	
Dropout Voltage	V <sub>d</sub>	25°C		1.7		V	

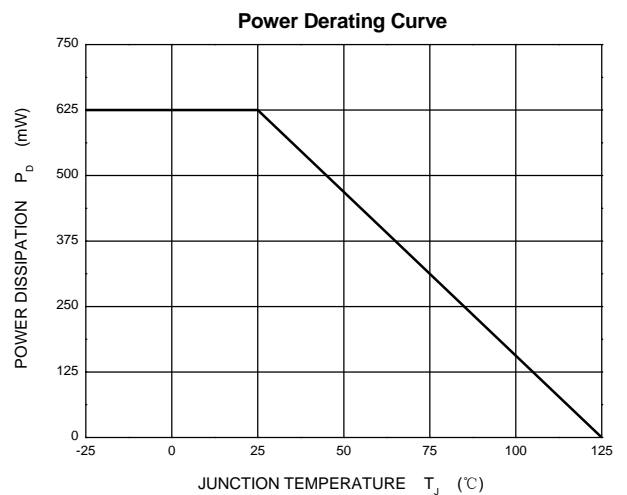
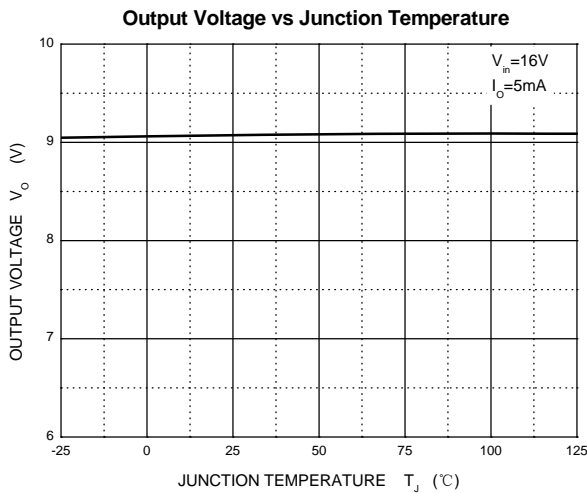
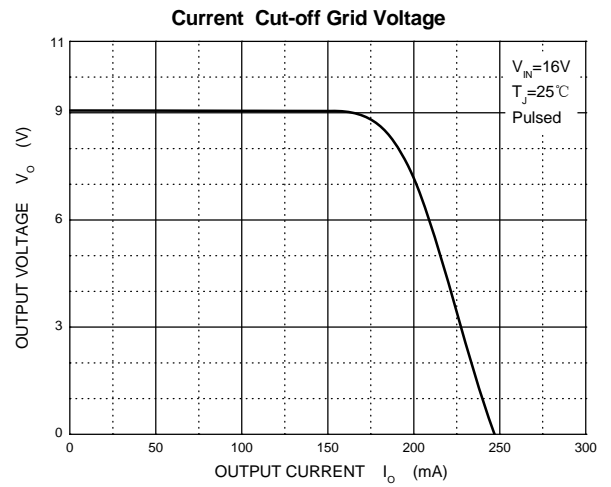
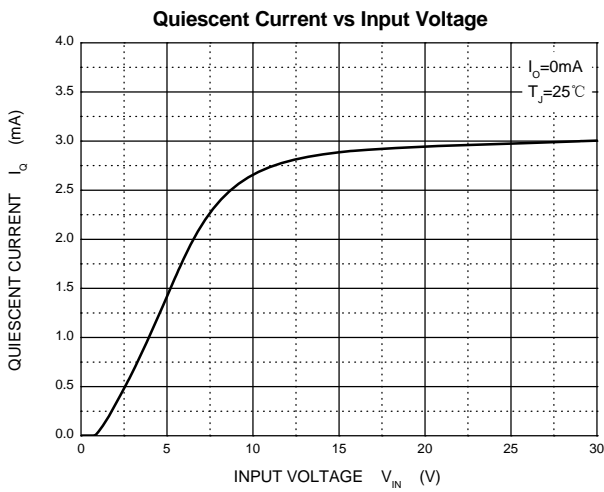
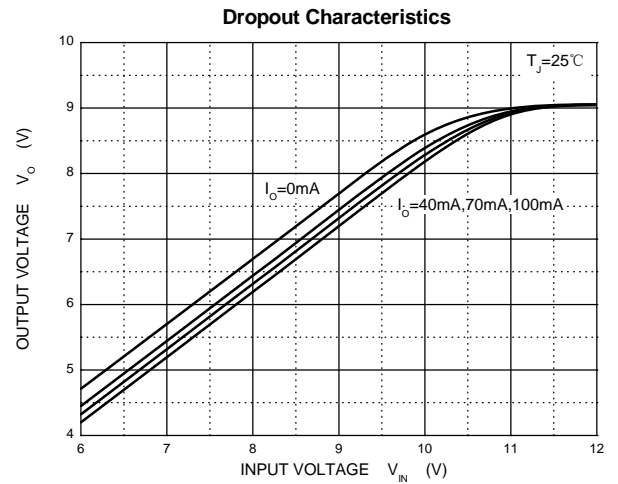
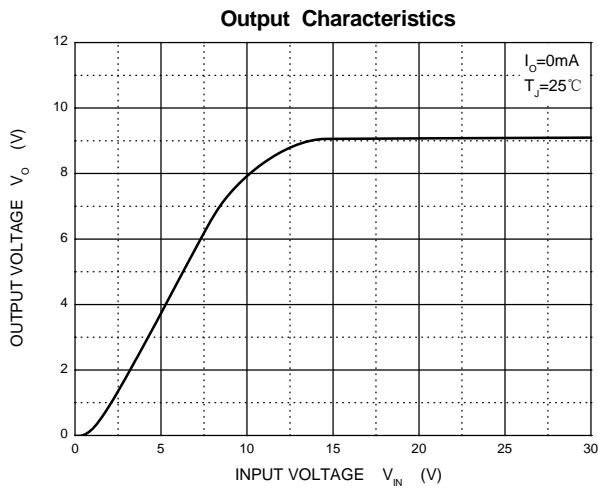
\* Pulse test.

**TYPICAL APPLICATION**

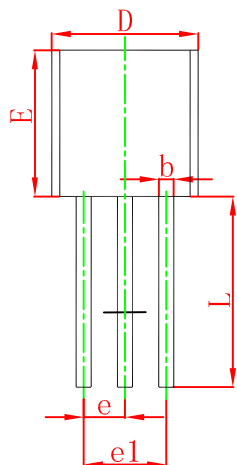
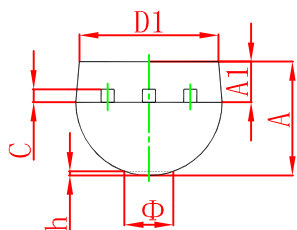


Note : Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

# Typical Characteristics

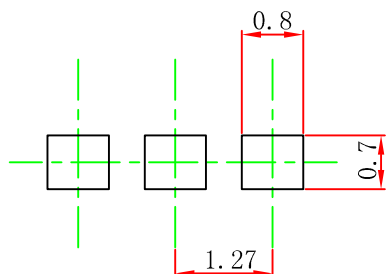


## TO-92 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.300	3.700	0.130	0.146
A1	1.100	1.400	0.043	0.055
b	0.380	0.550	0.015	0.022
c	0.360	0.510	0.014	0.020
D	4.400	4.700	0.173	0.185
D1	3.430		0.135	
E	4.300	4.700	0.169	0.185
e	1.270 TYP		0.050 TYP	
e1	2.440	2.640	0.096	0.104
L	14.100	14.500	0.555	0.571
Φ		1.600		0.063
h	0.000	0.380	0.000	0.015

## TO-92 Suggested Pad Layout



### Note:

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

### NOTICE

JCET reserve the right to make modifications, enhancements, improvements, corrections or other changes without further notice to any product herein. JCET does not assume any liability arising out of the application or use of any product described herein.

# TO-92 PACKAGE TAPEING DIMENSION

## TO-92 PACKAGE TAPEING DIMENSION



Dimensions are in millimeter								
A1	A	T	P	P0	P2	F1	F2	W
4.5	4.5	3.5	12.7	12.7	6.35	2.5	2.5	18.0
W0	W1	W2	H	H0	D0	t1	t2	ΔP
6.0	9.0	1.0 MAX.	19.0	16.0	4.0	0.4	0.2	0



Package	Box	Box Size(mm)	Carton	Carton Size(mm)
TO-92	2000 pcs	333×162×43	20,000 pcs	350×340×250