

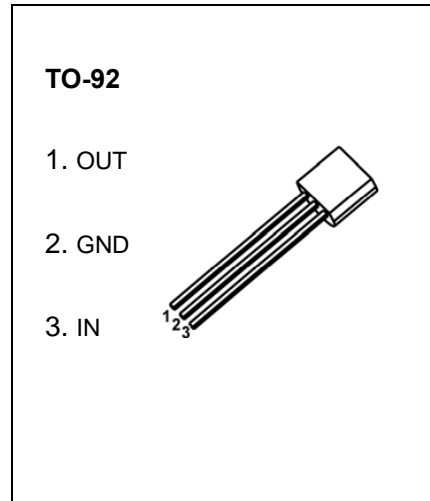


TO-92 Encapsulate Three-terminal Voltage Regulator

CJ78L09 Three-terminal positive voltage regulator

FEATURES

- Maximum output current
 $I_{OM}: 0.1A$
- Output voltage
 $V_O: 9V$
- Continuous total dissipation
 $P_D: 0.625 W (T_a= 25 ^\circ C)$



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

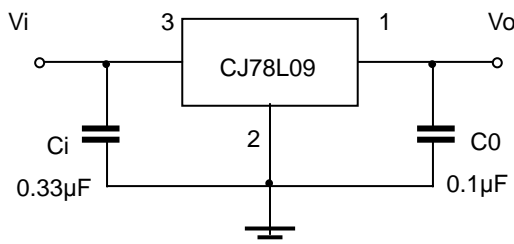
Parameter	Symbol	Value	Unit
Input Voltage	V_i	30	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	160	$^\circ C/W$
Operating Junction Temperature Range	T_{OPR}	-25~+125	$^\circ C$
Storage Temperature Range	T_{STG}	-65~+150	$^\circ C$

ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ($V_i=16V, I_o=40mA, C_i=0.33\mu F, C_o=0.1\mu F$, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit	
Output voltage	V_o	$25^\circ C$	8.64	9.0	9.36	V	
		0-125 $^\circ C$	$12V \leq V_i \leq 24V, I_o=1mA-40mA$	8.55	9.0	9.45	V
			$I_o=1mA-70mA$	8.55	9.0	9.45	V
Load Regulation	ΔV_o	$I_o=1mA-100mA$	$25^\circ C$	19	90	mV	
		$I_o=1mA-40mA$	$25^\circ C$	11	40	mV	
Line regulation	ΔV_o	$12V \leq V_i \leq 24V$	$25^\circ C$	45	175	mV	
		$13V \leq V_i \leq 24V$	$25^\circ C$	40	125	mV	
Quiescent Current	I_q		$25^\circ C$	4.1	6.0	mA	
Quiescent Current Change	ΔI_q	$13V \leq V_i \leq 24V$	0-125 $^\circ C$		1.5	mA	
	ΔI_q	$1mA \leq I_o \leq 40mA$	0-125 $^\circ C$		0.1	mA	
Output Noise Voltage	V_N	$10Hz \leq f \leq 100KHz$	$25^\circ C$	58		$\mu V/V_o$	
Ripple Rejection	RR	$15V \leq V_i \leq 25V, f=120Hz$	0-125 $^\circ C$	45		dB	
Dropout Voltage	V_d		$25^\circ C$	1.7		V	

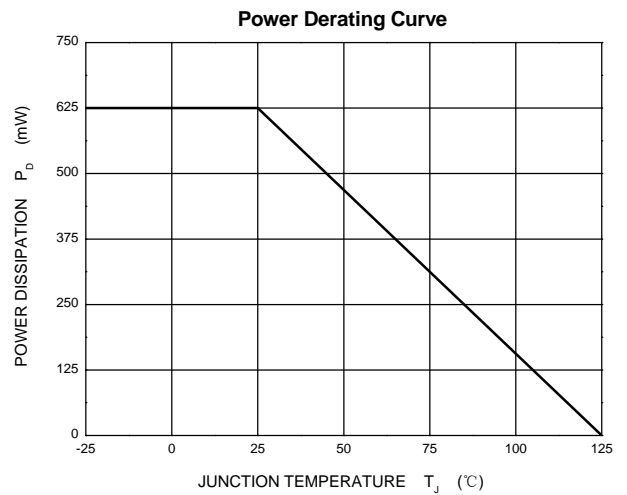
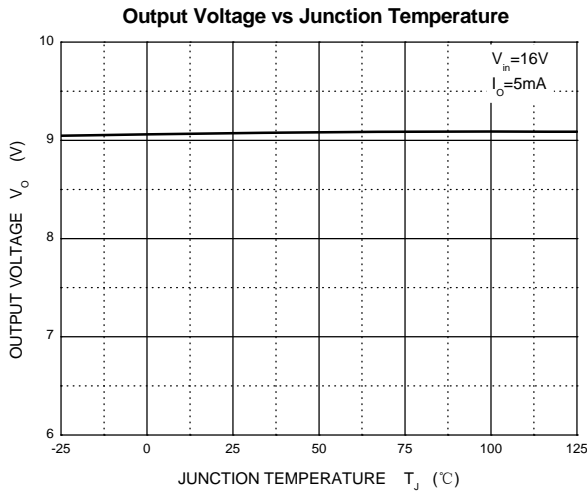
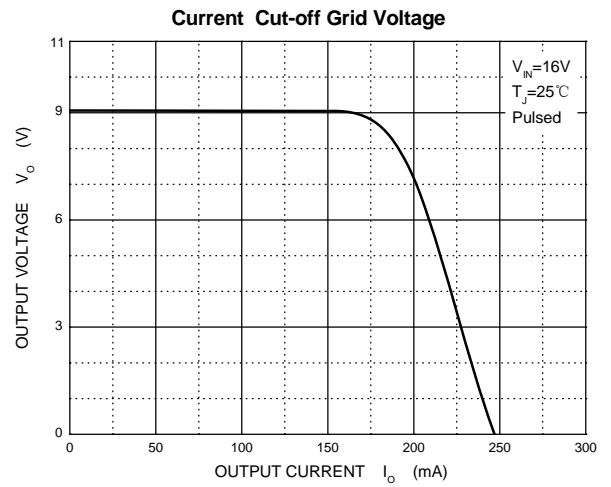
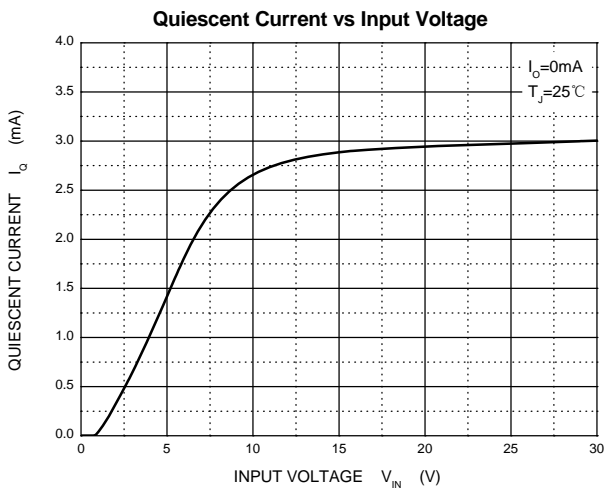
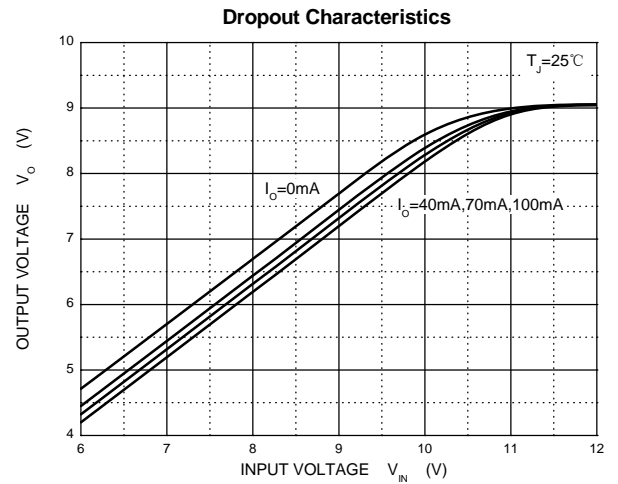
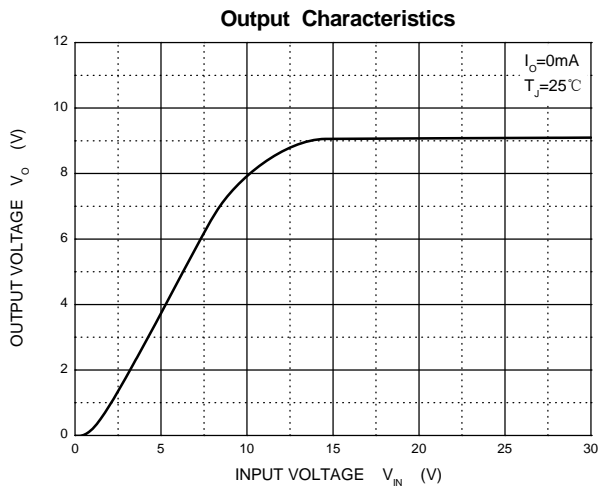
* Pulse test.

TYPICAL APPLICATION

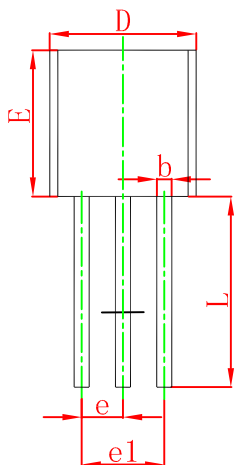
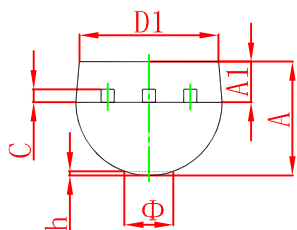


Note : Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

Typical Characteristics

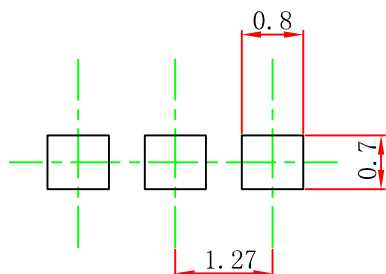


TO-92 Package Outline Dimensions



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

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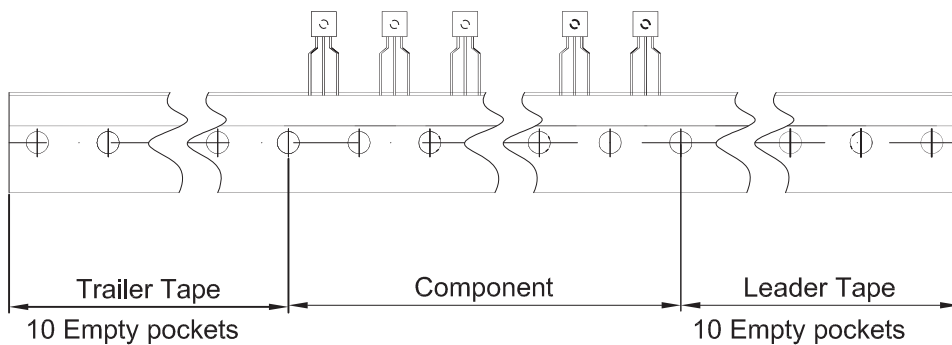
TO-92 PACKAGE TAPEING DIMENSION

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