

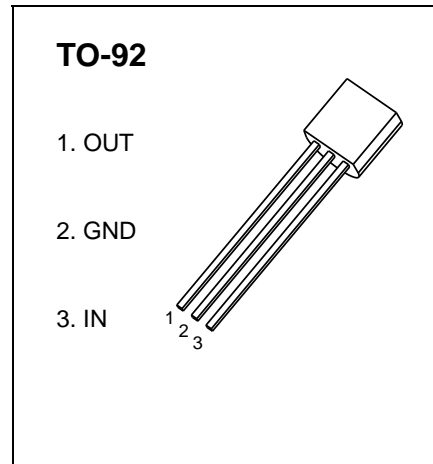


JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD  
**TO-92 Encapsulate Three-terminal Voltage Regulator**

**CJ78L08** Three-terminal positive voltage regulator

**FEATURES**

- Maximum output current  
 $I_{OM}: 0.1A$
- Output voltage  
 $V_O: 8V$
- Continuous total dissipation  
 $P_D: 0.625 W (T_a= 25\text{ }^\circ\text{C})$



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

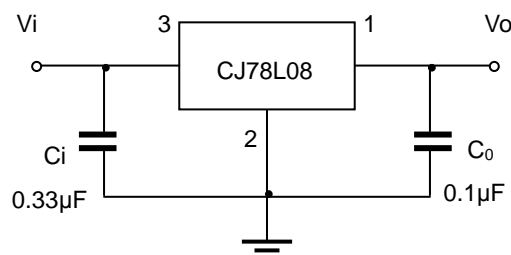
Parameter	Symbol	Value	Unit
Input Voltage	$V_i$	30	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	160	$^\circ\text{C/W}$
Operating Junction Temperature Range	$T_{OPR}$	-25~+125	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-65~+150	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ( $V_i=14V, I_o=40mA, C_i=0.33\mu F, C_o=0.1\mu F$ , unless otherwise specified)**

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	$V_o$	$25^\circ\text{C}$	7.7	8.0	8.3	V
		$10.5V \leq V_i \leq 23V, I_o=1mA \sim 40mA$	7.6	8.0	8.4	V
		$0-125^\circ\text{C}$ $I_o=1mA \sim 70mA$	7.6	8.0	8.4	V
Load Regulation	$\Delta V_o$	$I_o=1mA \sim 100mA$ $25^\circ\text{C}$		18	80	mV
		$I_o=1mA \sim 40mA$ $25^\circ\text{C}$		10	40	mV
Line regulation	$\Delta V_o$	$10.5V \leq V_i \leq 23V$ $25^\circ\text{C}$		42	175	mV
		$11V \leq V_i \leq 23V$ $25^\circ\text{C}$		36	125	mV
Quiescent Current	$I_q$	$25^\circ\text{C}$		4	6	mA
Quiescent Current Change	$\Delta I_q$	$11V \leq V_i \leq 23V$ $0-125^\circ\text{C}$			1.5	mA
	$\Delta I_q$	$1mA \leq I_o \leq 40mA$ $0-125^\circ\text{C}$			0.1	mA
Output Noise Voltage	$V_N$	$10Hz \leq f \leq 100KHz$ $25^\circ\text{C}$		54		$\mu V/V_o$
Ripple Rejection	RR	$13V \leq V_i \leq 23V, f=120Hz$ $0-125^\circ\text{C}$	37	46		dB
Dropout Voltage	$V_d$	$25^\circ\text{C}$		1.7		V

\* Pulse test.

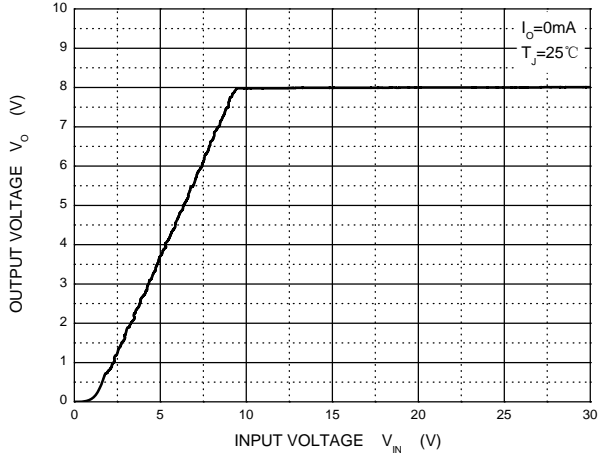
**TYPICAL APPLICATION**



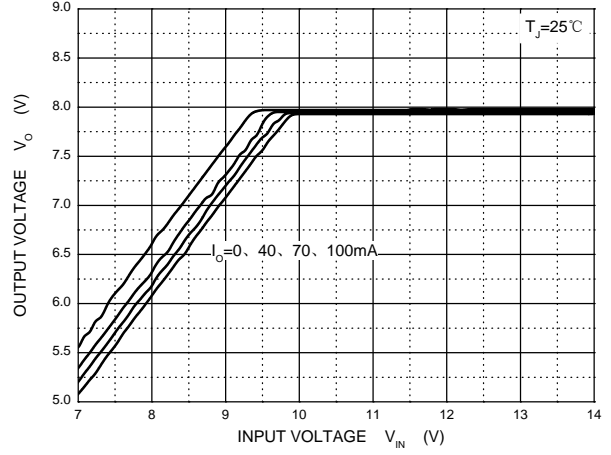
Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

# Typical Characteristics

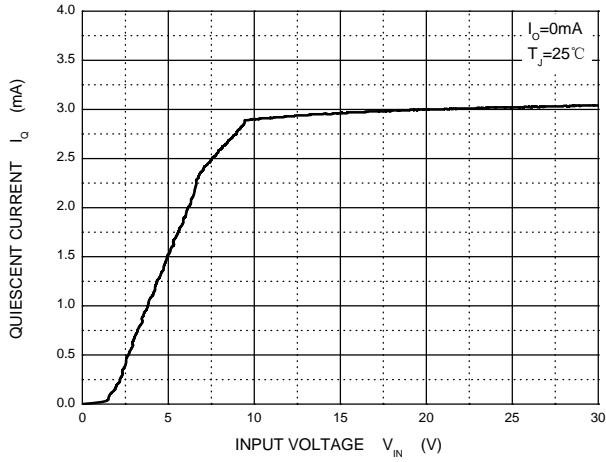
**Output Characteristics**



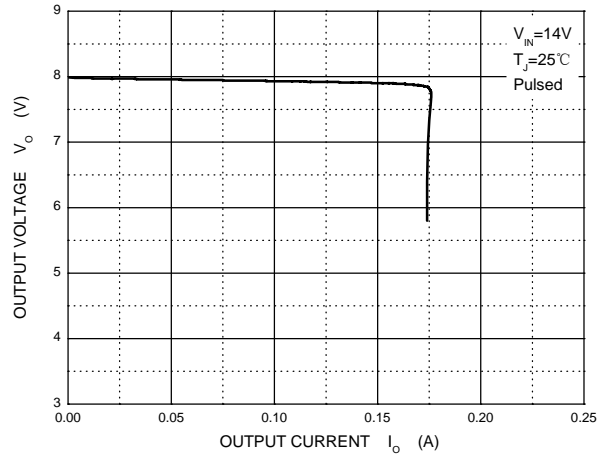
**Dropout Characteristics**



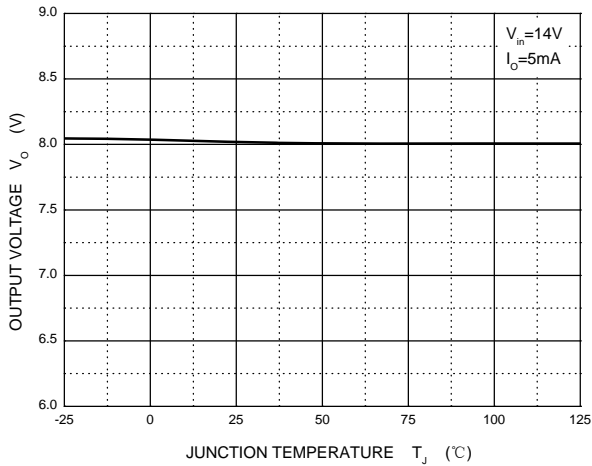
**Quiescent Current vs Input Voltage**



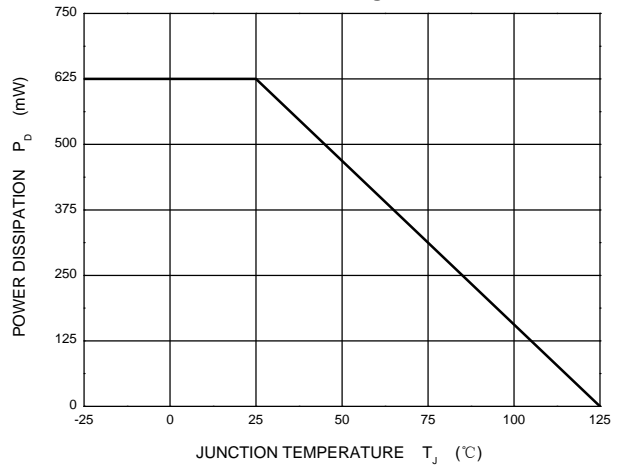
**Current Cut-off Grid Voltage**



**Output Voltage vs Junction Temperature**



**Power Derating Curve**



## 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	4.300	4.700	0.169	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



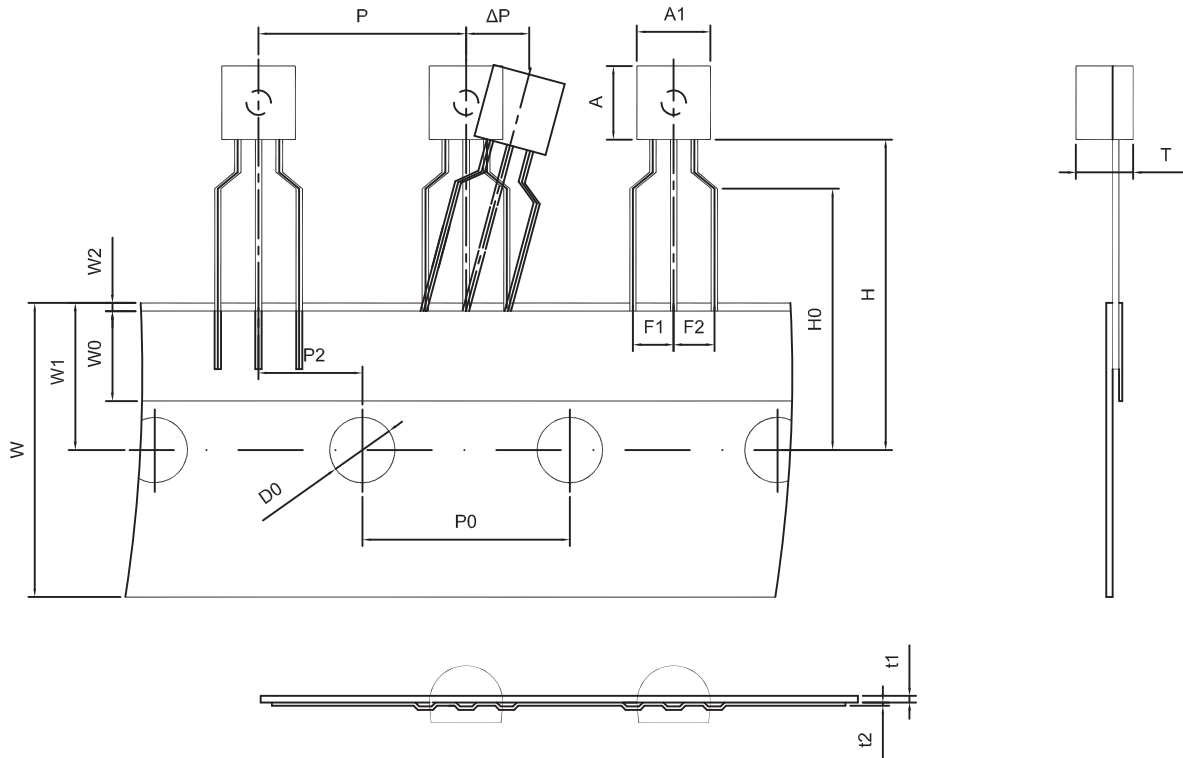
### Note:

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

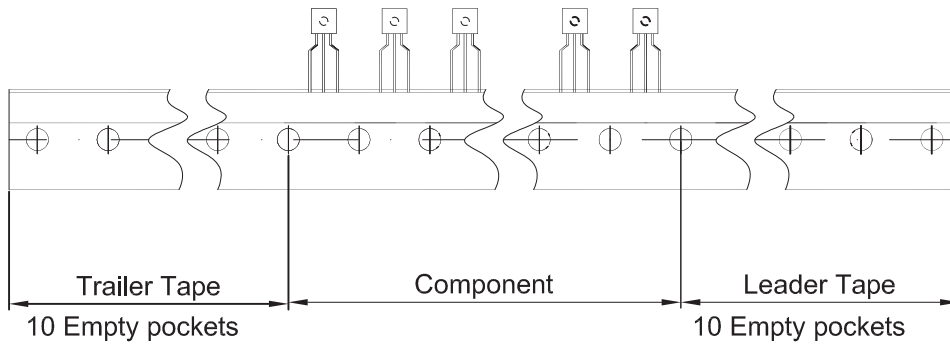
### NOTICE

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TO-92 PACKAGE TAPEING DIMENSION



Dimiensions 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