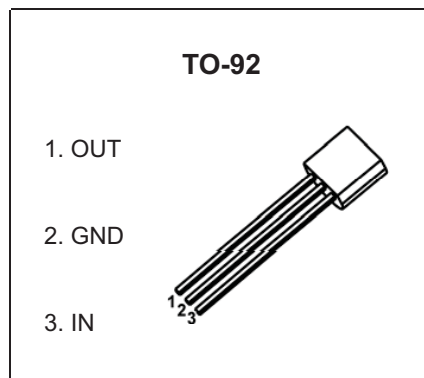


TO-92 Plastic-Encapsulate Voltage Regulators

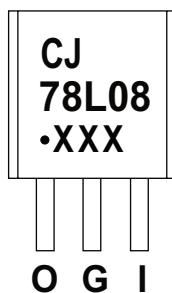
**CJ78L08** Three-terminal positive voltage regulator

**FEATURES**

- Maximum output current  
I<sub>OM</sub>: 0.1A
- Output voltage  
V<sub>O</sub>: 8V
- Continuous total dissipation  
P<sub>D</sub>: 0.625 W (T<sub>a</sub>= 25 °C)



**MARKING**



CJ78L08=Device code  
Solid dot=Green molding compound device,  
if none,the normal device  
XXX=Code

**ORDERING INFORMATION**

Part Number	Package	Packing Method	Pack Quantity
CJ78L08	TO-92	Bulk	1000pcs/Bag
CJ78L08-TA	TO-92	Tape	2000pcs/Box

**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

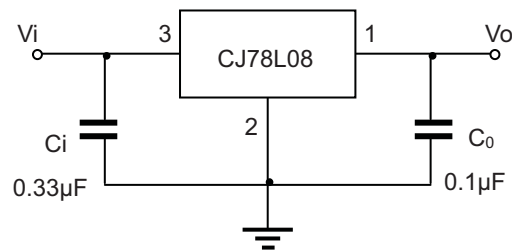
# ELECTRICAL CHARACTERISTICS

$T_a=25^\circ\text{C}$  unless otherwise specified ( $V_i=14\text{V}$ ,  $I_o=40\text{mA}$ ,  $C_i=0.33\mu\text{F}$ ,  $C_o=0.1\mu\text{F}$ , unless otherwise specified )

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

\* Pulse test.

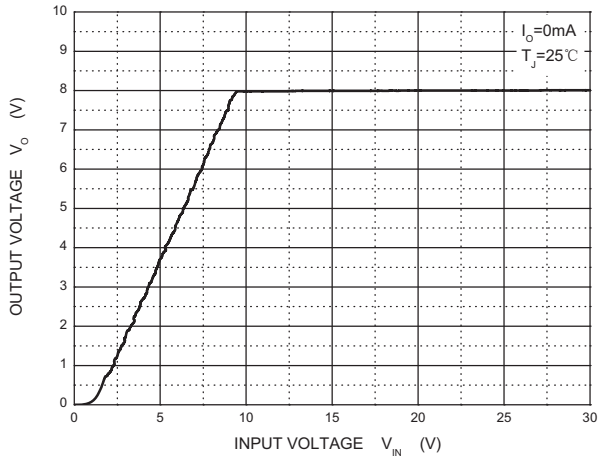
## TYPICAL APPLICATION



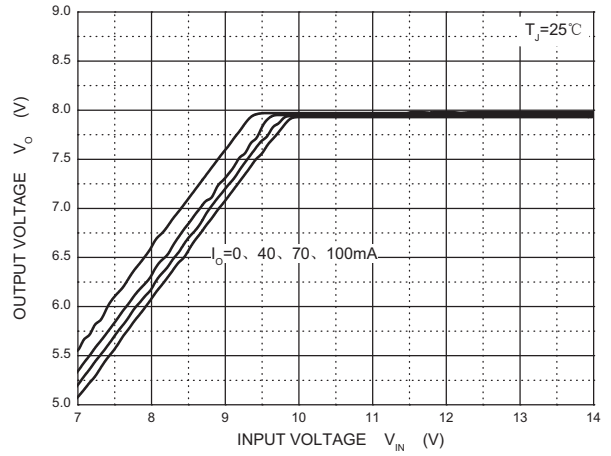
Note: Bypass capacitors are recommended for optimum stability and transient response and should be located as close as possible to the regulators.

# Typical Characteristics

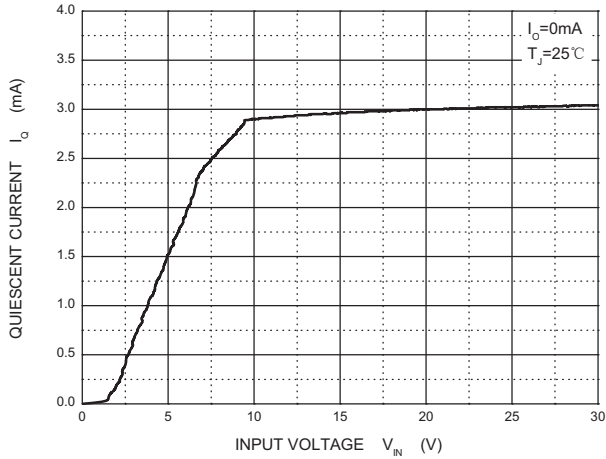
**Output Characteristics**



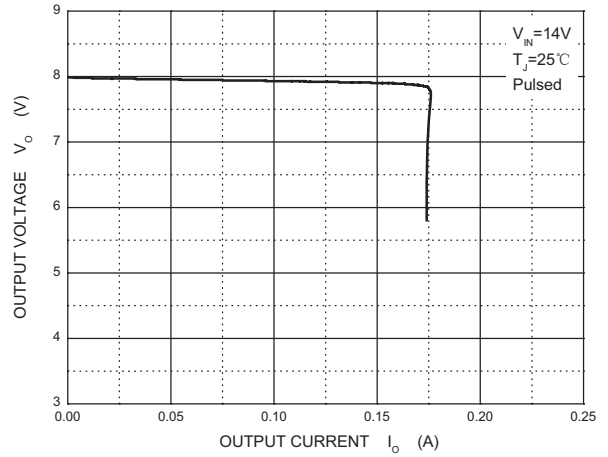
**Dropout Characteristics**



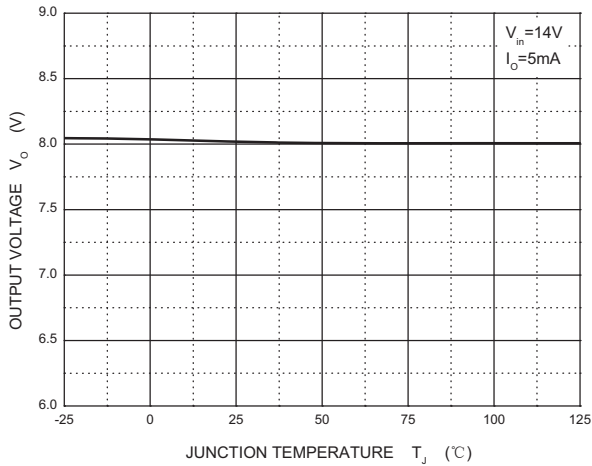
**Quiescent Current vs Input Voltage**



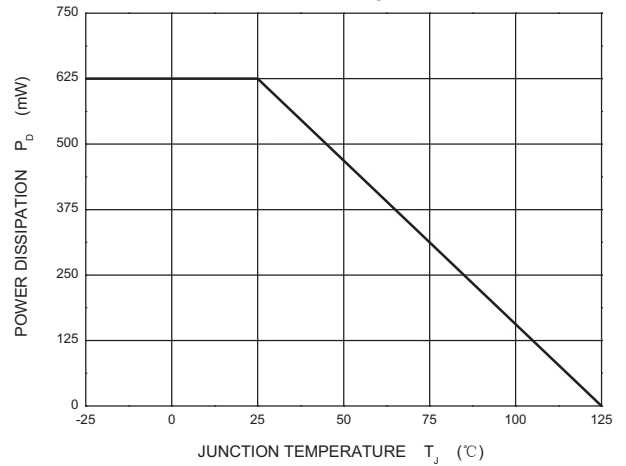
**Current Cut-off Grid Voltage**



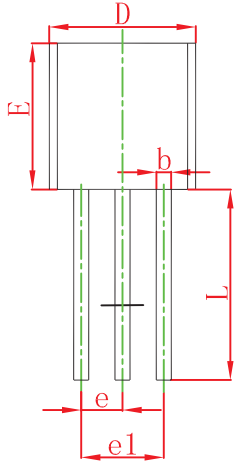
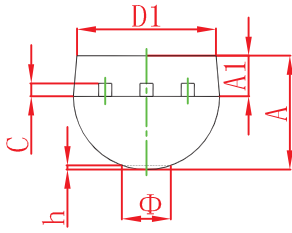
**Output Voltage vs Junction Temperature**



**Power Derating Curve**

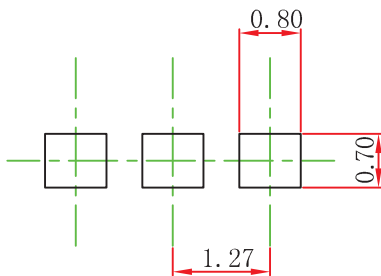


## TO-92 Package Outline Dimensions



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



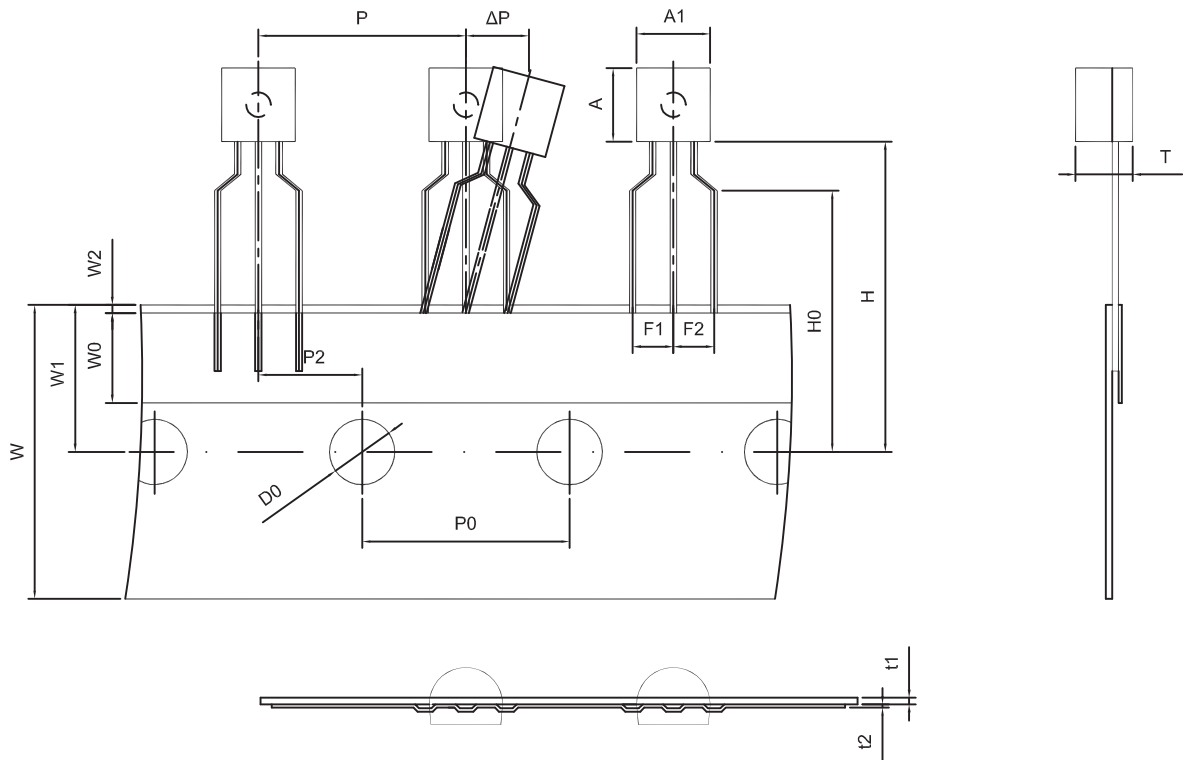
### Note:

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

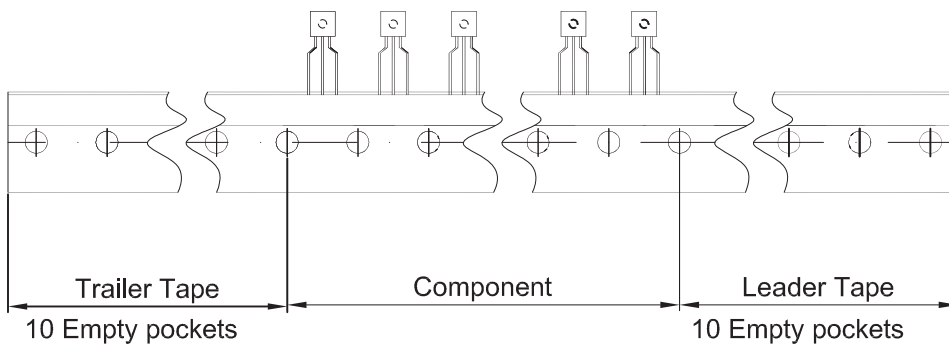
### NOTICE

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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