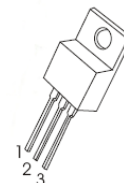


## TO-220-3L Plastic-Encapsulate Regulators

### CJ78M09 Three-terminal positive voltage regulator

#### TO-220-3L

- 1. IN
- 2. GND
- 3. OUT



#### FEATURES

- Maximum Output current  $I_{OM}$ : 0.5 A
- Output voltage  $V_O$ : 9V
- Continuous total dissipation
  - $P_D$ : 1.5 W ( $T_a = 25^\circ\text{C}$ )
  - 15 W ( $T_C = 25^\circ\text{C}$ )

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

Parameter	Symbol	Value	Unit
Input Voltage	$V_i$	25	V
Operating Junction Temperature Range	$T_{OPR}$	0-+125	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-65-+150	$^\circ\text{C}$

#### ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ( $V_i=16\text{V}$ , $I_o=350\text{mA}$ , $C_i=0.33\mu\text{F}$ , $C_o=0.1\mu\text{F}$ , unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output Voltage	$V_o$	$25^\circ\text{C}$	8.65	9	9.35	V
		$11.5 \leq V_i \leq 24\text{V}$ , $I_o=5\text{mA}-350\text{mA}$ $P_o \leq 15\text{W}$	0- $125^\circ\text{C}$	8.55	9	9.45
Load Regulation	$\Delta V_o$	$I_o=5\text{mA}-500\text{mA}$	$25^\circ\text{C}$	20	180	mV
		$I_o=5\text{mA}-200\text{mA}$	$25^\circ\text{C}$	10	90	mV
Line Regulation	$\Delta V_o$	$11.5\text{V} \leq V_i \leq 26\text{V}$ , $I_o=200\text{mA}$	$25^\circ\text{C}$	6	100	mV
		$12\text{V} \leq V_i \leq 26\text{V}$ , $I_o=200\text{mA}$	$25^\circ\text{C}$	2	50	mV
Quiescent Current	$I_q$	$25^\circ\text{C}$		4.6	6	mA
Quiescent Current Change	$\Delta I_q$	$11.5\text{V} \leq V_i \leq 26\text{V}$ , $I_o=200\text{mA}$	0- $125^\circ\text{C}$		0.8	mA
	$\Delta I_q$	$5\text{mA} \leq I_o \leq 350\text{mA}$	0- $125^\circ\text{C}$		0.5	mA
Output Noise Voltage	$V_N$	$10\text{Hz} \leq f \leq 100\text{kHz}$	$25^\circ\text{C}$	60		$\mu\text{V}$
Ripple Rejection	RR	$13 \leq V_i \leq 23\text{V}$ , $f=120\text{Hz}$ , $I_o=300\text{mA}$	0- $125^\circ\text{C}$	56	80	dB
Dropout Voltage	$V_d$	$I_o=350\text{mA}$	$25^\circ\text{C}$	2		V
Short Circuit Current	$I_{sc}$	$V_i=16\text{V}$	$25^\circ\text{C}$	250		mA
Peak Current	$I_{pk}$		$25^\circ\text{C}$	0.5		A

#### TYPICAL APPLICATION

