



# TO-220 Plastic-Encapsulate Voltage Regulator

**CJ7810** Three-terminal positive voltage regulator

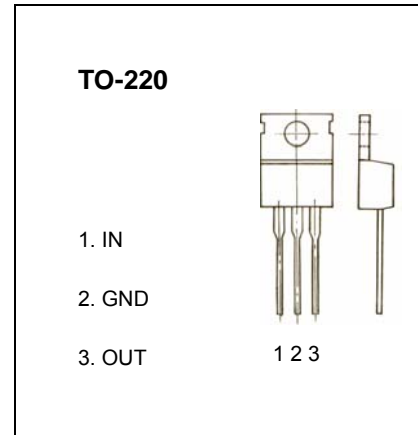
## FEATURES

Maximum Output current  $I_{OM}$ : 1.5 A

Output voltage  $V_o$ : 10 V

Continuous total dissipation

$P_D$ : 2 W ( $T_J = 25^\circ\text{C}$ )



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

Parameter	Symbol	Value	Unit
Input Voltage	$V_i$	35	V
Thermal resistance junction-air	$R_{\theta JA}$	65	$^\circ\text{C}/\text{W}$
Thermal resistance junction-cases	$R_{\theta JC}$	5	$^\circ\text{C}/\text{W}$
Operating Junction Temperature Range	$T_{OPR}$	0-150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-65-150	$^\circ\text{C}$

## ELECTRICAL CHARACTERISTICS( $V_i=17\text{V}$ , $I_o=500\text{mA}$ , $0^\circ\text{C}<T_J<125^\circ\text{C}$ , $C_i=0.33\mu\text{F}$ , $C_o=0.1\mu\text{F}$ , unless otherwise specified )

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Output voltage	$V_o$	$T_J=25^\circ\text{C}$	9.6	10	10.4	V
		$12.5\text{V}\leq V_i\leq 25\text{V}$ , $I_o=5\text{mA}-1\text{A}$ , $P\leq 15\text{W}$	9.5	10	10.5	V
Load Regulation	$\Delta V_o$	$T_J=25^\circ\text{C}$ , $I_o=5\text{mA}-1.5\text{A}$		12	200	mV
		$T_J=25^\circ\text{C}$ , $I_o=250\text{mA}-750\text{mA}$		4	100	mV
Line regulation	$\Delta V_o$	$12.5\text{V}\leq V_i\leq 28\text{V}$ , $T_J=25^\circ\text{C}$		7	200	mV
		$14\text{V}\leq V_i\leq 20\text{V}$ , $T_J=25^\circ\text{C}$		2	100	mV
Quiescent Current	$I_q$	$T_J=25^\circ\text{C}$		4.3	8	mA
Quiescent Current Change	$\Delta I_q$	$12.5\text{V}\leq V_i\leq 28\text{V}$			1	mA
	$\Delta I_q$	$5\text{mA}\leq I_o\leq 1\text{A}$			0.5	mA
Output voltage drift	$\Delta V_o/\Delta T$	$I_o=5\text{mA}$		-1		mV/ $^\circ\text{C}$
Output Noise Voltage	$V_N$	$10\text{Hz}\leq f\leq 100\text{KHz}$		70		$\mu\text{V}$
Ripple Rejection	RR	$13\text{V}\leq V_i\leq 23\text{V}$ , $f=120\text{Hz}$ , $T_J=25^\circ\text{C}$	55	71		dB
Dropout Voltage	$V_d$	$T_J=25^\circ\text{C}$ , $I_o=1\text{A}$		2		V
Output resistance	$R_o$	$f=1\text{KHz}$		18		$\text{m}\Omega$
Short Circuit Current	$I_{sc}$	$T_J=25^\circ\text{C}$		400		mA
Peak Current	$I_{pk}$	$T_J=25^\circ\text{C}$		2.2		A

## TYPICAL APPLICATION

