

## TO-220 Plastic-Encapsulate Voltage Regulators

**L7812CV** Three-terminal positive voltage regulator

### FEATURES

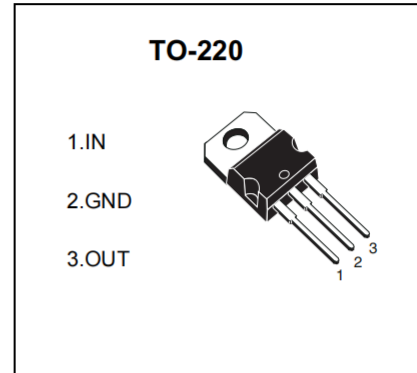
Maximum Output current  $I_{OM}$ : 1.5 A

Output voltage  $V_o$ : 12 V

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	$V_i$	35	V
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	83.3	$^\circ\text{C/W}$
Thermal Resistance from Junction to Case	$R_{\theta JC}$	8.3	$^\circ\text{C/W}$
Operating Junction Temperature Range	$T_{OPR}$	0~+150	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-55~+150	$^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE ( $V_i=19\text{V}$ , $I_o=500\text{mA}$ , $C_i=0.33\mu\text{F}$ , $C_o=0.1\mu\text{F}$ , unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output voltage	$V_o$	25 $^\circ\text{C}$	11.5	12.0	12.5	V
		$I_o = 5.0\text{mA} - 1.0\text{A}$ , $P \leq 15\text{W}$ $14.5\text{V} \leq V_i \leq 27\text{V}$	0-125 $^\circ\text{C}$	11.4	12	12.6
Load Regulation	$\Delta V_o$	$14.5\text{V} \leq V_i \leq 30\text{V}$	25 $^\circ\text{C}$	10	240	mV
		$16\text{V} \leq V_i \leq 22\text{V}$	25 $^\circ\text{C}$	3	120	mV
Line regulation	$\Delta V_o$	$I_o = 5\text{mA} - 1.5\text{A}$	25 $^\circ\text{C}$	12	240	mV
		$I_o = 250\text{mA} - 750\text{mA}$	25 $^\circ\text{C}$	4	120	mV
Quiescent Current	$I_q$	25 $^\circ\text{C}$		4.3	8	mA
Quiescent Current Change	$\Delta I_q$	$5.0\text{mA} \leq I_o \leq 1.0\text{A}$	0-125 $^\circ\text{C}$		0.5	mA
		$14.5\text{V} \leq V_i \leq 30\text{V}$	0-125 $^\circ\text{C}$		1.0	mA
Output voltage drift	$\Delta V_o / \Delta T$	$I_o = 5\text{mA}$	0-125 $^\circ\text{C}$	-1		mV/ $^\circ\text{C}$
Output Noise Voltage	$V_N$	$f = 10\text{Hz to } 100\text{KHz}$	25 $^\circ\text{C}$	75		$\mu\text{V}$
Ripple Rejection	RR	$f = 120\text{Hz}$ , $15\text{V} \leq V_i \leq 25\text{V}$	0-125 $^\circ\text{C}$	55	71	dB
Dropout Voltage	$V_d$	$I_o = 1.0\text{A}$	25 $^\circ\text{C}$	2		V
Output resistance	$R_o$	$f = 1\text{KHz}$	25 $^\circ\text{C}$	18		m $\Omega$
Short Circuit Current	$I_{sc}$	25 $^\circ\text{C}$		350		mA
Peak Current	$I_{pk}$	25 $^\circ\text{C}$		2.2		A

