

TO-220 Plastic-Encapsulate Voltage Regulators

L7808CV Three-terminal positive voltage regulator

FEATURES

Maximum Output current I_{OM} : 1.5 A

Output voltage V_o : 8 V

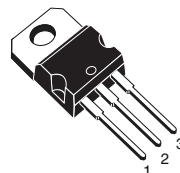
Continuous total dissipation

P_D : 1.5 W ($T_a = 25^\circ\text{C}$)

15W ($T_c = 25^\circ\text{C}$)

TO-220

1.IN
2.GND
3.OUT



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 ($V_i = 14\text{V}$, $I_o = 500\text{mA}$, $C_i = 0.33\mu\text{F}$, $C_o = 0.1\mu\text{F}$, unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Output Voltage	V_o	25°C	7.7	8	8.3	V
		$10.5\text{V} \leq V_i \leq 23\text{V}$, $I_o = 5\text{mA} - 1\text{A}$, $P \leq 15\text{W}$	7.6	8	8.4	V
Load Regulation	ΔV_o	$I_o = 5\text{mA} - 1.5\text{A}$		12	160	mV
		$I_o = 250\text{mA} - 750\text{mA}$		4	80	mV
Line Regulation	ΔV_o	$10.5\text{V} \leq V_i \leq 25\text{V}$		6	160	mV
		$11\text{V} \leq V_i \leq 17\text{V}$		2	80	mV
Quiescent Current	I_q	25°C		4.3	8	mA
Quiescent Current Change	ΔI_q	$10.5\text{V} \leq V_i \leq 25\text{V}$			1	mA
		$5\text{mA} \leq I_o \leq 1\text{A}$			0.5	mA
Output Voltage Drift	$\Delta V_o / \Delta T$	$I_o = 5\text{mA}$		-0.8		mV/ $^\circ\text{C}$
Output Noise Voltage	V_N	$10\text{Hz} \leq f \leq 100\text{KHz}$		52		μV
Ripple Rejection	RR	$11.5\text{V} \leq V_i \leq 21.5\text{V}$, $f = 120\text{Hz}$		55	72	dB
Dropout Voltage	V_d	$I_o = 1\text{A}$		2		V
Output Resistance	R_o	$f = 1\text{KHz}$		10		m Ω
Short Circuit Current	I_{sc}	25°C		450		mA
Peak Current	I_{pk}	25°C		2.2		A

TYPICAL APPLICATION

