

### L7808 Three-terminal positive voltage regulator

#### FEATURES

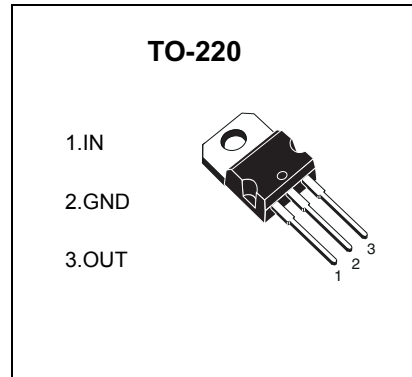
Maximum Output current  $I_{OM}$ : 1.5 A

Output voltage  $V_o$ : 8 V

Continuous total dissipation

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

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



#### 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	$V_o$	$25^\circ\text{C}$	7.7	8	8.3	V
		$10.5\text{V} \leq V_i \leq 23\text{V}$ , $I_o=5\text{mA}-1\text{A}$ , $P \leq 15\text{W}$	0-125 $^\circ\text{C}$	7.6	8	8.4
Load Regulation	$\Delta V_o$	$I_o=5\text{mA}-1.5\text{A}$	$25^\circ\text{C}$	12	160	mV
		$I_o=250\text{mA}-750\text{mA}$	$25^\circ\text{C}$	4	80	mV
Line Regulation	$\Delta V_o$	$10.5\text{V} \leq V_i \leq 25\text{V}$	$25^\circ\text{C}$	6	160	mV
		$11\text{V} \leq V_i \leq 17\text{V}$	$25^\circ\text{C}$	2	80	mV
Quiescent Current	$I_q$	$25^\circ\text{C}$		4.3	8	mA
Quiescent Current Change	$\Delta I_q$	$10.5\text{V} \leq V_i \leq 25\text{V}$	0-125 $^\circ\text{C}$		1	mA
		$5\text{mA} \leq I_o \leq 1\text{A}$	0-125 $^\circ\text{C}$		0.5	mA
Output Voltage Drift	$\Delta V_o/\Delta T$	$I_o=5\text{mA}$	0-125 $^\circ\text{C}$	-0.8		mV/ $^\circ\text{C}$
Output Noise Voltage	$V_N$	10Hz $\leq f \leq$ 100KHz	$25^\circ\text{C}$	52		$\mu\text{V}$
Ripple Rejection	RR	11.5V $\leq V_i \leq$ 21.5V, $f=120\text{Hz}$	0-125 $^\circ\text{C}$	55	72	dB
Dropout Voltage	$V_d$	$I_o=1\text{A}$	$25^\circ\text{C}$	2		V
Output Resistance	$R_o$	$f=1\text{KHz}$	$25^\circ\text{C}$	10		m $\Omega$
Short Circuit Current	$I_{sc}$		$25^\circ\text{C}$	450		mA
Peak Current	$I_{pk}$		$25^\circ\text{C}$	2.2		A

#### TYPICAL APPLICATION

