

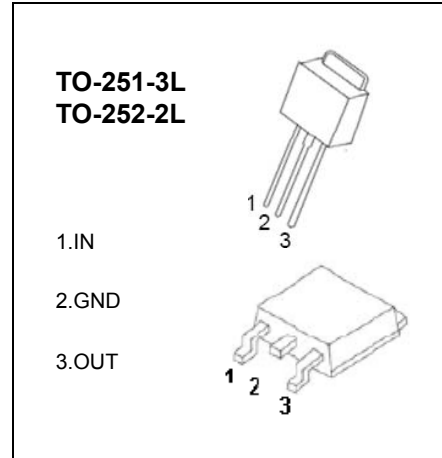


TO-251-3L/TO-252-2L Plastic-Encapsulate Regulators

**78M12** Three-terminal positive voltage regulator

**FEATURES**

- Maximum Output current  $I_{OM}$ : 0.5 A
- Output voltage  $V_O$ : 12V
- Continuous total dissipation
  - $P_D$ : 1.25 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
Operating Junction Temperature Range	$T_{OPR}$	0-+125	$^\circ\text{C}$
Storage Temperature Range	$T_{STG}$	-65-+150	$^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS ( $V_i=19\text{V}, I_o=350\text{mA}, C_i=0.33\mu\text{F}, C_o=0.1\mu\text{F}$ , unless otherwise specified )**

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit	
Output Voltage	$V_o$		25 $^\circ\text{C}$	11.5	12	12.5	V
		$14.5\text{V} \leq V_i \leq 27\text{V}, I_o=5\text{mA}-350\text{mA}$ $P_o \leq 1.25\text{W}$	0-125 $^\circ\text{C}$	11.4	12	12.6	V
Load Regulation	$\Delta V_o$	$I_o=5\text{mA}-500\text{mA}$	25 $^\circ\text{C}$		25	240	mV
		$I_o=5\text{mA}-200\text{mA}$	25 $^\circ\text{C}$		10	120	mV
Line Regulation	$\Delta V_o$	$14.5\text{V} \leq V_i \leq 30\text{V}, I_o=200\text{mA}$	25 $^\circ\text{C}$		10	100	mV
		$16\text{V} \leq V_i \leq 30\text{V}, I_o=200\text{mA}$	25 $^\circ\text{C}$		3	50	mV
Quiescent Current	$I_q$		25 $^\circ\text{C}$		4.6	6	mA
Quiescent Current Change	$\Delta I_q$	$14.5\text{V} \leq V_i \leq 30\text{V}, I_o=200\text{mA}$	0-125 $^\circ\text{C}$			0.8	mA
		$5\text{mA} \leq I_o \leq 350\text{mA}$	0-125 $^\circ\text{C}$			0.5	mA
Output Noise Voltage	$V_N$	$10\text{Hz} \leq f \leq 100\text{KHz}$	25 $^\circ\text{C}$		75	$\mu\text{V}$	
Ripple Rejection	RR	$15 \leq V_i \leq 25\text{V}, f=120\text{Hz}, I_o=300\text{mA}$	0-125 $^\circ\text{C}$	55	80	dB	
Dropout Voltage	$V_d$	$I_o=350\text{mA}$	25 $^\circ\text{C}$		2	V	
Short Circuit Current	$I_{sc}$	$V_i=19\text{V}$	25 $^\circ\text{C}$		240	mA	
Peak Current	$I_{pk}$		25 $^\circ\text{C}$		0.7	A	

**TYPICAL APPLICATION**

