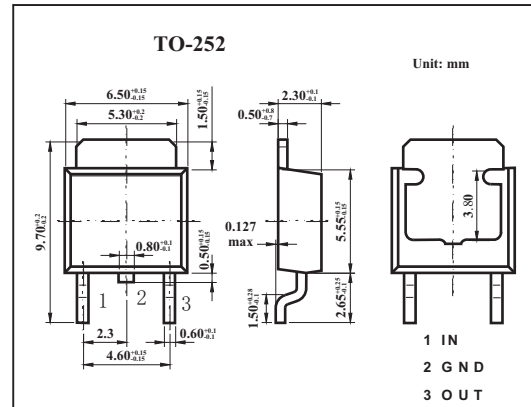


## Three-terminal Positive Voltage Regulator 78M12

### ■ Features

- Maximum Output current  $I_{om}$ : 0.5 A
- Output voltage  $V_o$ : 12V
- Continuous total dissipation  $P_D$ : 1.25W



### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Input Voltage	$V_i$	35	V
Operating Junction Temperature Range	$T_{opr}$	0 to +125	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-65 to +150	$^\circ\text{C}$

### ■ Electrical Characteristics ( $V_{in}=19\text{V}, I_o=350\text{mA}, 0^\circ\text{C} < T_j < 125^\circ\text{C}, C_i=0.33\ \mu\text{F}, C_o=0.1\ \mu\text{F}$ , unless otherwise specified)

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Output voltage	$V_o$	$T_j=25^\circ\text{C}$	11.5	12	12.5	V
		$14.5 \leq V_i \leq 27\text{V}, I_o=5\text{mA} \sim 350\text{mA}, P_o \leq 15\text{W}$	11.4	12	12.6	V
Load regulation	$\Delta V_o$	$I_o=5\text{mA} \sim 500\text{mA}, T_j=25^\circ\text{C}$		25	240	mV
		$I_o=5\text{mA} \sim 200\text{mA}, T_j=25^\circ\text{C}$		10	120	mV
Line regulation	$\Delta V_o$	$14.5 \leq V_i \leq 30\text{V}, I_o=200\text{mA}, T_j=25^\circ\text{C}$		10	100	mV
		$16 \leq V_i \leq 30\text{V}, I_o=200\text{mA}, T_j=25^\circ\text{C}$		3	50	mV
Quiescent current	$I_q$	$T_j=25^\circ\text{C}$		4.6	6.0	mA
Quiescent current change	$\Delta I_q$	$14.5\text{V} \leq V_i \leq 30\text{V}, I_o=200\text{mA}$			0.8	mA
		$5\text{mA} \leq I_o \leq 350\text{mA}$			0.5	mA
Output noise voltage	$V_N$	$10\text{Hz} \leq f \leq 100\text{KHz}, T_j=25^\circ\text{C}$		75		$\mu\text{V}$
Ripple rejection	RR	$15\text{V} \leq V_i \leq 25\text{V}, f=120\text{Hz}, I_{out}=300\text{mA}$	55	80		dB
Dropout Voltage	$V_d$	$I_o=350\text{mA}, T_j=25^\circ\text{C}$		2.0		V
Short Circuit Current	$I_{sc}$	$V_i=19\text{V}, T_j=25^\circ\text{C}$		240		mA
Peak Output Current	$I_{pk}$	$T_j=25^\circ\text{C}$		0.7		A

### ■ Typical Application

