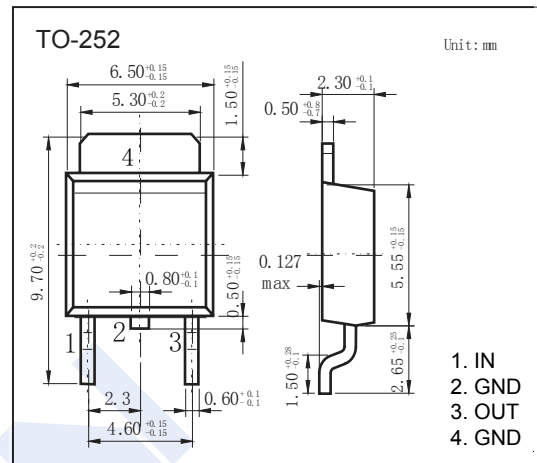


## Three Terminal Positive Voltage Regulator

### 78M08

#### ■ Features

- Maximum Output Current  $I_o=500\text{mA}$
- Output Voltage  $V_o=8\text{V}$
- Internal Thermal Overload Protection
- Internal Short Circuit Current Limiting
- Output Transistor Safe Operating Area Protection



#### ■ Absolute Maximum Ratings Over Operating Temperature Range(unless otherwise noted)

Parameter	Symbol	Rating	Unit
Input Voltage	$V_i$	35	V
Maximum Output Current	$I_o$	0.5	A
Operating Virtual Junction Temperature	$T_J$	0 to 125	°C
Storage Temperature Range	$T_{stg}$	-65 to 150	
Lead Temperature 1.6mm(1/16 inch) from case for 10 seconds		260	

#### ■ Electrical Characteristics at Specified Virtual Junction Temperature, $V_i=14\text{V}$ , $I_o=350\text{mA}$ (unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Output Voltage	$V_o$		25°C	7.7	8.0	8.3	V
		$10.5\text{V} \leq V_i \leq 23\text{V}$ , $I_o = 5.0\text{mA} \sim 350\text{mA}$	0 to 125°C	7.6	8.0	8.4	
Line Regulation	$\Delta V_o$	$10.5\text{V} \leq V_i \leq 25\text{V}$ , $I_o=200\text{mA}$	25°C			150	mV
		$11\text{V} \leq V_i \leq 25\text{V}$ , $I_o=200\text{mA}$				75	
Load Regulation	$\Delta V_o$	$I_o = 5.0\text{mA} \sim 500\text{mA}$	25°C			160	mV
		$I_o = 5.0\text{mA} \sim 200\text{mA}$				80	
Quiescent Current	$I_q$		25°C			8.0	mA
			125°C			7.5	
Quiescent Current Change	$\Delta I_q$	$10.5\text{V} \leq V_i \leq 25\text{V}$	0 to 125°C			1.0	mA
		$5\text{mA} \leq I_o \leq 350\text{mA}$				0.5	
Output Noise Voltage	$V_N$	$10\text{Hz} \leq F \leq 100\text{kHz}$ , $T_a=25^\circ\text{C}$	25°C		52	µV	
Ripple Rejection	$R_R$	$11.5\text{V} \leq V_i \leq 21.5\text{V}$ , $F=120\text{Hz}$	25°C	62	80	dB	
Dropout Voltage	$V_d$		25°C		2	V	

\* Pulse testing techniques are used to maintain the junction temperature as close to the ambient temperature as possible.

Thermal effects must be taken into account separately. All characteristics are measured with a  $0.33\mu\text{F}$  capacitor across the input and a  $0.1\mu\text{F}$  capacitor across the output.

\*\* This specification applies only for dc power dissipation permitted by absolute maximum ratings.