

## TO-252 Plastic-Encapsulate Regulators

### HM78M08 Three-terminal positive voltage regulator

#### Features:

Maximum output current

$I_{OM}$ : 0.5 A

Output voltage

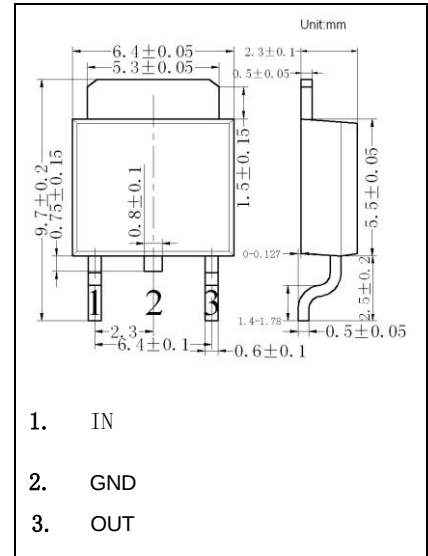
$V_O$ : 8V

Continuous total dissipation

$P_D$ : 1.25 W ( $T_a = 25^\circ\text{C}$ )

**ABSOLUTE MAXIMUM RATINGS (Operating temperature range applies unless otherwise specified)**

| Parameter                            | Symbol    | Value    | Unit             |
|--------------------------------------|-----------|----------|------------------|
| Input Voltage                        | $V_I$     | 25       | V                |
| Operating Junction Temperature Range | $T_{OPR}$ | 0-+125   | $^\circ\text{C}$ |
| Storage Temperature Range            | $T_{STG}$ | -65-+150 | $^\circ\text{C}$ |



**ELECTRICAL CHARACTERISTICS AT SPECIFIED VIRTUAL JUNCTION TEMPERATURE** ( $V_I=10\text{V}$ ,  $I_O=350\text{mA}$ ,  $C_i=0.33\mu\text{F}$ ,  $C_o=0.1\mu\text{F}$ , unless otherwise specified)

| Parameter                | Symbol       | Test conditions                                                                         | Min | Typ | Max | Unit          |
|--------------------------|--------------|-----------------------------------------------------------------------------------------|-----|-----|-----|---------------|
| Output Voltage           | $V_O$        | $10.5 \leq V_I \leq 23\text{V}$ , $I_O=5\text{mA}-350\text{mA}$ , $P_O \leq 15\text{W}$ | 7.6 | 8   | 8.4 | V             |
| Load Regulation          | $\Delta V_O$ | $I_O=5\text{mA}-500\text{mA}$                                                           |     | 20  | 160 | mV            |
|                          |              | $I_O=5\text{mA}-200\text{mA}$                                                           |     | 10  | 80  | mV            |
| Line Regulation          | $\Delta V_O$ | $10.5\text{V} \leq V_I \leq 25\text{V}$ , $I_O=200\text{mA}$                            | -   | 6   | 100 | mV            |
|                          |              | $11\text{V} \leq V_I \leq 25\text{V}$ , $I_O=200\text{mA}$                              | -   | 2   | 50  | mV            |
| Quiescent Current        | $I_Q$        |                                                                                         | -   | 4.6 | 6   | mA            |
| Quiescent Current Change | $\Delta I_Q$ | $10.5\text{V} \leq V_I \leq 25\text{V}$ , $I_O=200\text{mA}$                            |     |     | 0.8 | mA            |
|                          | $\Delta I_Q$ | $5\text{mA} \leq I_O \leq 350\text{mA}$                                                 |     |     | 0.5 | mA            |
| Output Noise Voltage     | $V_N$        | $10\text{Hz} \leq f \leq 100\text{KHz}$                                                 |     | 52  |     | $\mu\text{V}$ |
| Ripple Rejection         | RR           | $11.5\text{V} \leq V_I \leq 21.5\text{V}$ , $f=120\text{Hz}$ , $I_O=300\text{mA}$       | 56  | 80  |     | dB            |
| Dropout Voltage          | $V_D$        | $I_O=350\text{mA}$                                                                      |     | 2   |     | V             |
| Short Circuit Current    | $I_{SC}$     | $V_I=14\text{V}$                                                                        |     | 250 |     | mA            |
| Peak Current             | $I_{PK}$     |                                                                                         |     | 0.5 |     | A             |

#### TYPICAL APPLICATION

