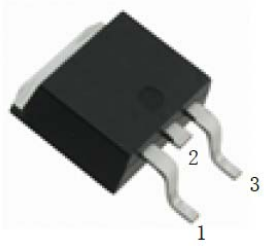
# 7809R

## 3-terminal 1 A positive voltage regulator




1.Input 2.Gnd 3.Output
TO-252 Plastic Package

### Features

- Output current up to 1 A
- Internal thermal overload protection
- Output transistor safe operating area protection

### Absolute Maximum Ratings ($T_a$ = 25 °C)

| Parameter | Symbol | Value | Units |
|---|---|---|---|
| Input Voltage | $V_I$ | 36 | V |
| Thermal Resistance Junction-Air | $R_{\theta JA}$ | 100 | °C/W |
| Operating Junction Temperature | $T_j$ | 150 | °C |
| Storage Temperature Range | $T_{stg}$ | - 65 to + 150 | °C |

### Electrical Characteristics

(- 40 °C < $T_J$ < 125 °C, $I_O$ = 1 A, $V_I$ = 15 V, unless otherwise specified)

| Parameter | Symbol | Conditions | | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|---|
| Output Voltage | $V_O$ | $T_J$ = 25 °C | | 8.82 | - | 9.18 | V |
| | | $I_O$ = 5 mA to 1 A, $P_O \leqslant$ 15 W<br>$V_I$ = 11.5 V to 23 V | | 8.65 | - | 9.35 | |
| Line Regulation | Regline | $T_J$ = 25 °C | $V_I$ = 11.5 V to 23 V<br>$I_O$ = 500 mA | - | - | 90 | mV |
| Load Regulation | Regload | $T_J$ = 25 °C | $V_I$ = 14 V<br>$I_O$ = 5 mA to 1 A | - | - | 100 | mV |
| Quiescent Current | $I_Q$ | $V_I$ = 15 V, $I_O$ = 0 A | | - | - | 6 | mA |
| Quiescent Current Change | $\Delta I_Q$ | $I_O$ = 500 mA, $V_I$ = 11.5 V to 23 V<br>$T_J$ = 25 °C | | - | - | 0.8 | mA |
| | | $I_O$ = 5 mA to 1 A, $T_J$ = 25 °C | | - | - | 0.5 | |
| Output Voltage Temperature Cofficient | $\Delta V_O/\Delta T$ | | | - | 0.72 | - | mV/°C |
| | $(\Delta V_O/V_O)/\Delta T$ | | | - | 80 | - | ppm/°C |
| Output Noise Voltage | $V_N$ | f = 10 Hz to 100 KHz, $T_A$ = 25 °C | | - | 10 | - | μV |
| Ripple Rejection | RR | f = 120 Hz, $V_I$ = 11.5 V to 21.5 V<br>$I_O$ = 500 mA | | - | 61 | - | dB |
| Dropout Voltage | $V_{Drop}$ | $I_O$ = 1 A, $\Delta V_O$ = 1 %, $T_J$ = 25 °C | | - | 2 | - | V |
| Output Resistance | $R_O$ | f = 1 KHz | | - | 10 | - | mΩ |
| Short Circuit Current | $I_{SC}$ | $V_I$ = 35 V, $T_A$ = 25 °C | | - | 0.2 | - | A |
| Peak Current | $I_{PK}$ | $V_I$ = 15 V, $T_J$ = 25 °C | | - | 2.2 | - | A |



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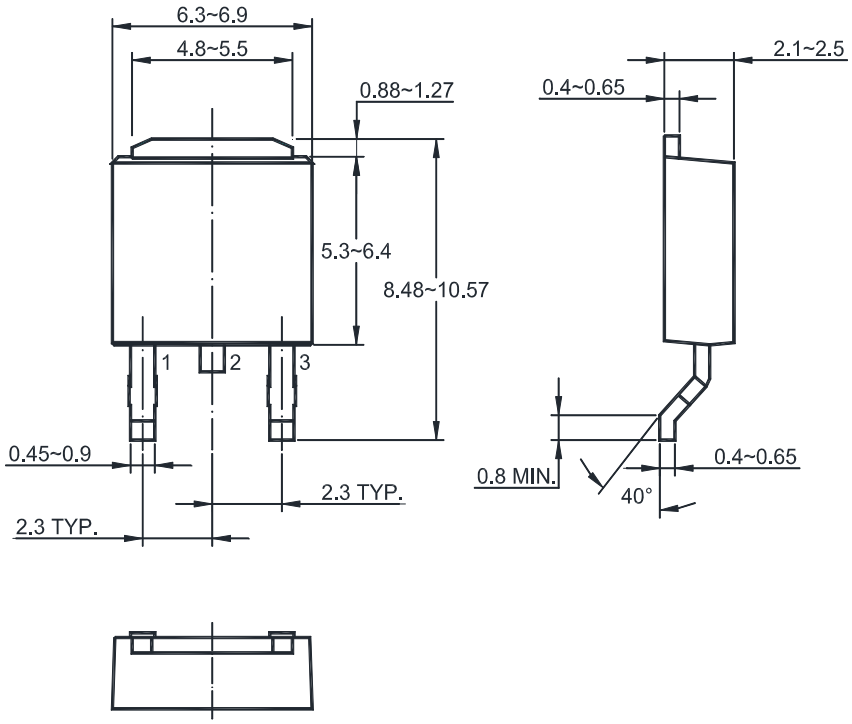
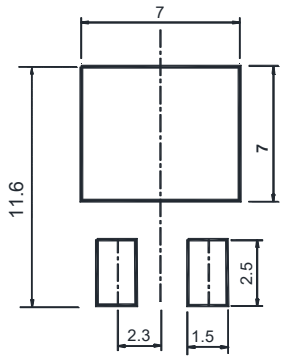
Dated：02/07/2020 Rev：03

## Package Outline (Dimensions in mm) TO-252




## Recommended Soldering Footprint




## Packing information

| Package | Tape Width (mm) | Pitch | | Reel Size | | Per Reel Packing Quantity |
|---|---|---|---|---|---|---|
| | | mm | inch | mm | inch | |
| TO-252 | 12 | 8 ± 0.1 | 0.315 ± 0.004 | 330 | 13 | 2,500 |

## Marking information

" 7809R " = Part No.

" ****** " = Date Code Marking

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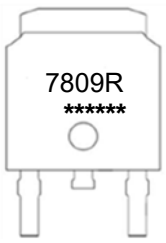


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