

7908 Three-terminal negative voltage regulator

FEATURES

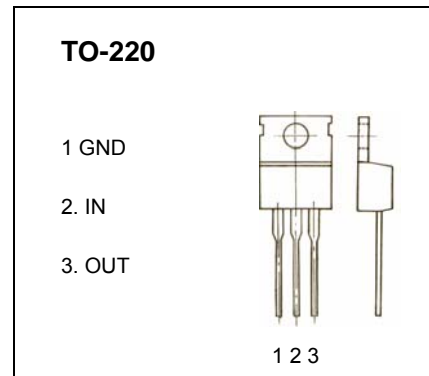
Maximum Output current I_{OM} : 1.5 A

Output voltage V_o : - 8 V

Continuous total dissipation

P_D : 2 W ($T_a = 25^\circ\text{C}$)

15 W ($T_C = 25^\circ\text{C}$)



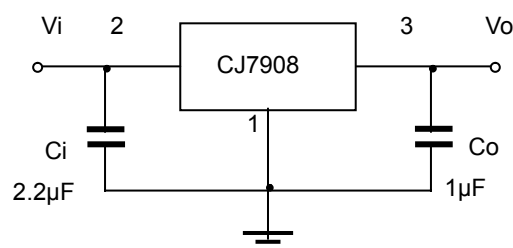
ABSOLUTE MAXIMUM RATINGS(Operating temperature range applies unless otherwise specified)

| Parameter | Symbol | Value | Unit |
|--------------------------------------|-----------------|---------|---------------------------|
| Input Voltage | V_i | -35 | V |
| Thermal resistance junction-air | $R_{\theta JA}$ | 65 | $^\circ\text{C}/\text{W}$ |
| Thermal resistance junction-cases | $R_{\theta JC}$ | 5 | $^\circ\text{C}/\text{W}$ |
| Operating Junction Temperature Range | T_{OPR} | 0-125 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{STG} | -65-150 | $^\circ\text{C}$ |

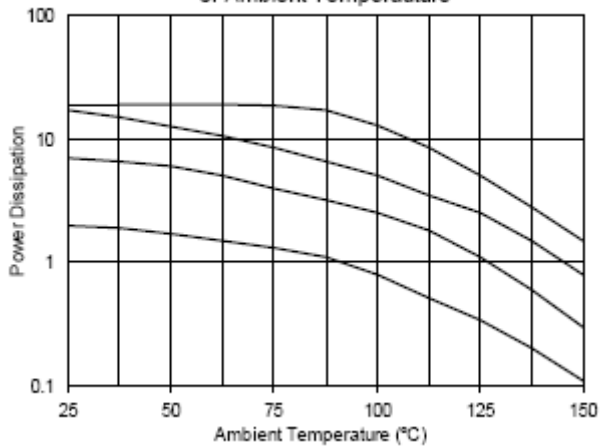
ELECTRICAL CHARACTERISTICS ($V_i = -14\text{V}, I_o = 500\text{mA}, C_i = 2.2\mu\text{F}, C_o = 1\mu\text{F}$, unless otherwise specified)

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|--------------------------|-------------------------|--|-------------------------|------|------|----------------------------|
| Output voltage | V_o | 25°C | -7.7 | -8 | -8.3 | V |
| | | $-10.5\text{V} \leq V_i \leq -23\text{V}, I_o = 5\text{mA} - 1\text{A}, P \leq 15\text{W}$ | $0 - 125^\circ\text{C}$ | -7.6 | -8 | -8.4 |
| Load Regulation | ΔV_o | $I_o = 5\text{mA} - 1.5\text{A}$ | 25°C | 15 | 160 | mV |
| | | $I_o = 250\text{mA} - 750\text{mA}$ | 25°C | 5 | 80 | mV |
| Line regulation | ΔV_o | $-10.5\text{V} \leq V_i \leq -25\text{V}$ | 25°C | 12.5 | 160 | mV |
| | | $-11\text{V} \leq V_i \leq -17\text{V}$ | 25°C | 4 | 80 | mV |
| Quiescent Current | I_q | 25°C | | 1.5 | 2 | mA |
| Quiescent Current Change | ΔI_q | $-10.5\text{V} \leq V_i \leq -25\text{V}$ | $0 - 125^\circ\text{C}$ | | 1 | mA |
| | | $5\text{mA} \leq I_o \leq 1\text{A}$ | $0 - 125^\circ\text{C}$ | | 0.5 | mA |
| Output Noise Voltage | V_N | $10\text{Hz} \leq f \leq 100\text{KHz}$ | 25°C | 200 | | μV |
| Output voltage drift | $\Delta V_o / \Delta T$ | $I_o = 5\text{mA}$ | $0 - 125^\circ\text{C}$ | -0.6 | | $\text{mV}/^\circ\text{C}$ |
| Ripple Rejection | RR | $-11.5\text{V} \leq V_i \leq -21.5\text{V}, f = 120\text{Hz}$ | $0 - 125^\circ\text{C}$ | 54 | 60 | dB |
| Dropout Voltage | V_d | $I_o = 1\text{A}$ | 25°C | 1.1 | | V |
| Peak Current | I_{pk} | | 25°C | 2.1 | | A |

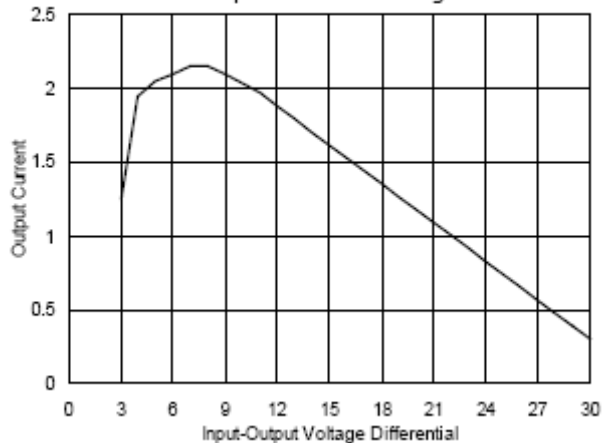
TYPICAL APPLICATION



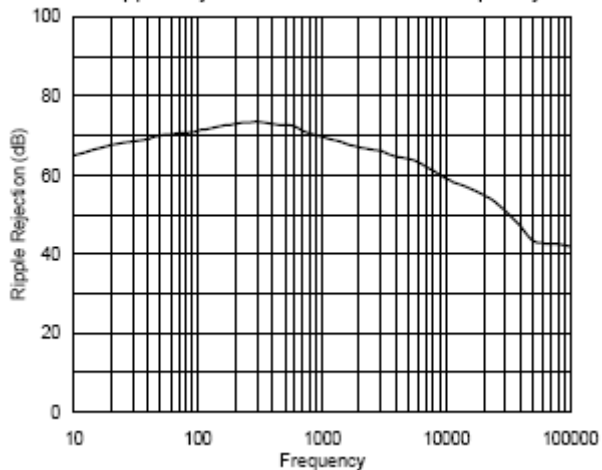
Average Case Power Dissipation as A Function of Ambient Temperature



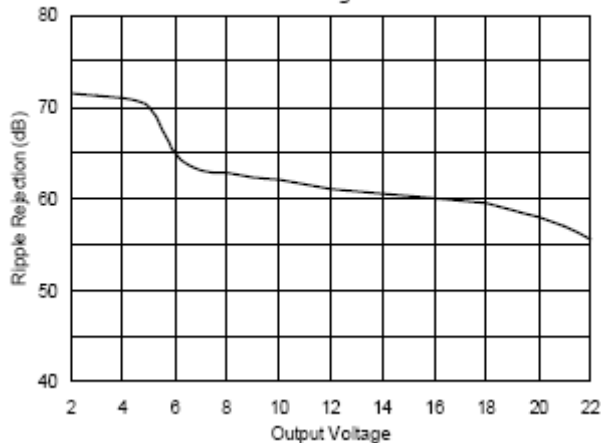
Peak Output Current as A Function of Input-Output Differential Voltage



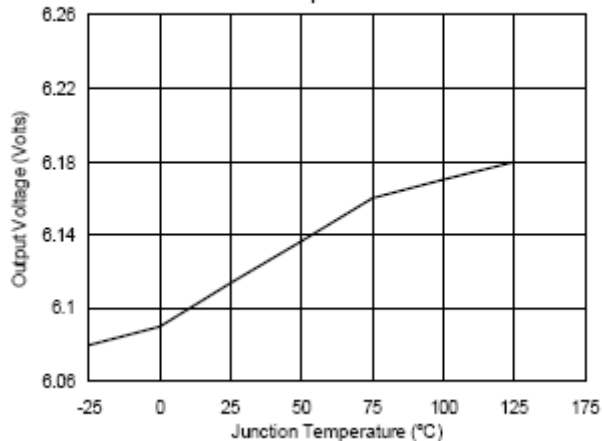
Ripple Rejection as A Function of Frequency



Ripple Rejection as A Function of Output Voltage



Output Voltage as A Function of Junction Temperature



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