

LM7808C

Three-Terminal Positive Voltage Regulators

Features

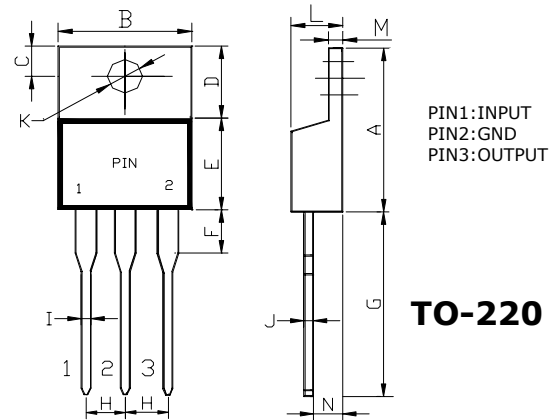
- * Output current at 1.0 Ampere
- * No external components required
- * Internal thermal overload protection
- * Internal short-circuit current limiting
- * Output voltage offered in 4% tolerance

Maximum Ratings

| Parameter | Symbol | Value | Unit |
|--------------------------------|--------|-----------|------|
| Input Voltage | V1 | 30 | V |
| Operating Ambient Temperature | PD | 15 | W |
| Operating Junction Temperature | TOPR | -20to+70 | °C |
| Storage Temperature Range | TSTG | -55to+125 | °C |

Mechanical Data

- * Case: TO-220AB Molded Plastic
- * Terminals: Plated Lead Solderable per MIL-STD-202, Method 208
- * Marking: Type Number
- * Weight: 2.24 grams (approx)



| DIM | Dimensions | | | | NO TE |
|-----|------------|-------|---------|-------|----------|
| | INCHES | | MM | | |
| | MIN | MAX | MIN | MAX | |
| A | 0.570 | 0.620 | 14.48 | 15.75 | |
| B | 0.380 | 0.405 | 9.66 | 10.28 | |
| C | 0.100 | 0.120 | 2.54 | 3.04 | |
| D | 0.235 | 0.255 | 5.97 | 6.48 | |
| E | 0.335 | 0.365 | 8.51 | 9.27 | |
| F | 0.110 | 0.155 | 2.80 | 3.93 | |
| G | 0.500 | 0.562 | 12.70 | 14.27 | |
| H | 0.095 | 0.105 | 2.42 | 2.66 | |
| I | 0.025 | 0.035 | 0.64 | 0.89 | |
| J | 0.016 | 0.025 | 0.41 | 0.64 | |
| K | 0.142 | 0.147 | 3.61 | 3.73 | φ |
| L | 0.160 | 0.190 | 4.06 | 4.82 | |
| M | 0.045 | 0.055 | 1.14 | 1.39 | |
| N | 0.102 typ | | 2.6 typ | | |

Electrical Characteristics

| Parameter | Sym | Min | Typ | Max | Test conditions |
|---|----------------------------------|-------|----------|----------------|---|
| Output Voltage | V _o | 7.68V | 8.0V | 8.32V | T _j =25°C |
| | | 7.74V | | 8.26V | 10.5V ≤ V ₁ ≤ 23V, 5mA ≤ I _o ≤ 1.0A PD=15W |
| Load Regulation | ΔV _o | | 12mV | 160mV | 5mA ≤ I _o ≤ 1.5A, T _j =25°C |
| | | | 4.0mV | 60mV | 250mA ≤ I _o ≤ 750mV, T _j =25°C |
| Line regulation | ΔV _o | | 6.0mV | 160mV | 10.5V ≤ V ₁ ≤ 25V, T _j =25°C |
| | | | 2.0mV | 80mV | 11V ≤ V ₁ ≤ 17V, T _j =25°C |
| Quiescent Current | I _q | | 4.3mA | 8.0mA | T _j =25°C, I _o =0 |
| Quiescent Current Change | ΔI _q | | | 1.0mA 0.5mA | 10.5V ≤ V ₁ ≤ 25V 5mA ≤ I _o ≤ 1.0A |
| Output Noise Voltage | V _N | | 52 μV | | 10Hz ≤ f ≤ 100KHz, T _j =25°C |
| Ripple Rejection | RR | 56dB | 72dB | | f=120Hz |
| Dropout Voltage | V _d | | 2.0V | | I _o =1.0A, T _j =25°C |
| Output Short Circuit Current | R _o | | 16mohm | | f=1.0KHz |
| Output Short Circuit Current | I _{os} | | 450mA | | T _j =25°C |
| Peak Output Current | I _{opeak} | | 2.2A | | T _j =25°C |
| Temperature Coefficient of Output voltage | ΔV _o /ΔT _j | | 1.8mV/°C | | 0°C ≤ V ₁ ≤ 125°C, I _o =5mA |