

## MC7815CT

### Features

- Output current in excess of 1.0 Ampere
- No external components required
- Internal thermal overload protection
- Internal short-circuit current limiting
- Output voltage offered in 2% tolerance
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0

### Maximum Ratings @ $T_A=25^{\circ}\text{C}$ , Unless Otherwise Noted

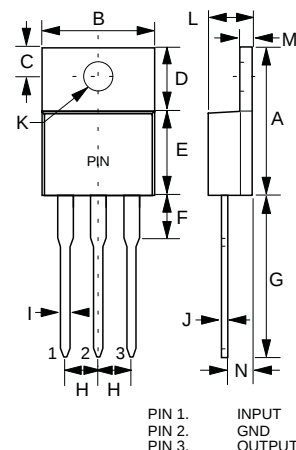
| Parameter                      | Symbol    | Value      | Unit               |
|--------------------------------|-----------|------------|--------------------|
| Input Voltage                  | $V_I$     | 30         | V                  |
| Operating Ambient Temperature  | $P_D$     | 15         | W                  |
| Operating Junction Temperature | $T_{OPR}$ | -20---+75  | $^{\circ}\text{C}$ |
| Storage Temperature Range      | $T_{STG}$ | -55---+125 | $^{\circ}\text{C}$ |

### Electrical Characteristics ( $V_I=23\text{V}$ , $I_O=500\text{mA}$ , $0^{\circ}\text{C}<T_J<125^{\circ}\text{C}$ , $C_i=0.33\mu\text{F}$ , $C_o=0.1\mu\text{F}$ , Unless Otherwise Specified)

| Parameter                                 | Sym                       | Min    | Typ                       | Max    | Test conditions                                                                                           |
|-------------------------------------------|---------------------------|--------|---------------------------|--------|-----------------------------------------------------------------------------------------------------------|
| Output Voltage                            | $V_O$                     | 14.7V  | 15.0V                     | 15.3V  | $T_J=25^{\circ}\text{C}$                                                                                  |
|                                           |                           | 14.55V |                           | 15.45V | $17.5\text{V} \leq V_I \leq 30\text{V}$ ,<br>$5\text{mA} \leq I_O \leq 1.0\text{A}$ ,<br>$P_D=15\text{W}$ |
| Load Regulation                           | $\Delta V_O$              |        | 12mV                      | 300mV  | $5\text{mA} \leq I_O \leq 1.5\text{A}$ ,<br>$T_J=25^{\circ}\text{C}$ ,                                    |
|                                           |                           |        | 4.0mV                     | 150mV  | $250\text{mA} \leq I_O \leq 750\text{mA}$ ,<br>$T_J=25^{\circ}\text{C}$                                   |
| Line regulation                           | $\Delta V_O$              |        | 11mV                      | 300mV  | $17.5\text{V} \leq V_I \leq 30\text{V}$ ,<br>$T_J=25^{\circ}\text{C}$                                     |
|                                           |                           |        | 3.0mV                     | 150mV  | $16\text{V} \leq V_I \leq 22\text{V}$ ,<br>$T_J=25^{\circ}\text{C}$                                       |
| Quiescent Current                         | $I_q$                     |        | 4.4mA                     | 8.0mA  | $T_J=25^{\circ}\text{C}$ , $I_O=0$                                                                        |
| Quiescent Current Change                  | $\Delta I_q$              |        |                           | 1.0mA  | $14.5\text{V} \leq V_I \leq 30\text{V}$                                                                   |
|                                           |                           |        |                           | 0.5mA  | $5\text{mA} \leq I_O \leq 1.0\text{A}$                                                                    |
| Output Noise Voltage                      | $V_N$                     |        | 90 $\mu\text{V}$          |        | $10\text{Hz} \leq f \leq 100\text{KHz}$ ,<br>$T_J=25^{\circ}\text{C}$                                     |
| Ripple Rejection                          | RR                        | 55dB   | 70dB                      |        | $f=120\text{Hz}$                                                                                          |
| Dropout Voltage                           | $V_d$                     |        | 2.0V                      |        | $I_O=1.0\text{A}$ , $T_J=25^{\circ}\text{C}$                                                              |
| Output Short Circuit Current              | $R_O$                     |        | 19mohm                    |        | $f=1.0\text{KHz}$                                                                                         |
| Output Short Circuit Current              | $I_{OS}$                  |        | 230mA                     |        | $T_J=25^{\circ}\text{C}$                                                                                  |
| Peak Output Current                       | $I_{Opeak}$               |        | 2.1A                      |        | $T_J=25^{\circ}\text{C}$                                                                                  |
| Temperature Coefficient of Output voltage | $\Delta V_O / \Delta T_J$ |        | 1.0mV/ $^{\circ}\text{C}$ |        | $0^{\circ}\text{C} \leq T_J \leq 125^{\circ}\text{C}$ ,<br>$I_O=5\text{mA}$                               |

### Three-Terminal Positive Voltage Regulators

### TO-220

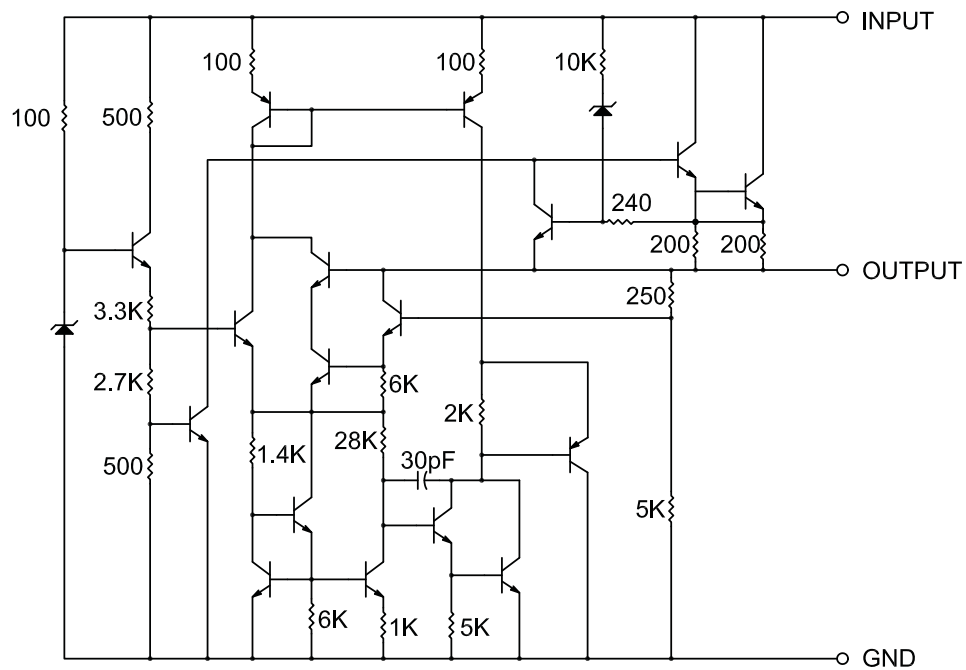


DIMENSIONS

| DIM | INCHES |      | MM    |       | NOTE |
|-----|--------|------|-------|-------|------|
|     | MIN    | MAX  | MIN   | MAX   |      |
| A   | .560   | .625 | 14.22 | 15.88 |      |
| B   | .380   | .420 | 9.65  | 10.67 |      |
| C   | .100   | .135 | 2.54  | 3.43  |      |
| D   | .230   | .270 | 5.84  | 6.86  |      |
| E   | .380   | .420 | 9.65  | 10.67 |      |
| F   | -----  | .250 | ----- | 6.35  |      |
| G   | .500   | .580 | 12.70 | 14.73 |      |
| H   | .090   | .110 | 2.29  | 2.79  |      |
| I   | .020   | .045 | 0.51  | 1.14  |      |
| J   | .012   | .025 | 0.30  | 0.64  |      |
| K   | .139   | .161 | 3.53  | 4.09  | Ø    |
| L   | .140   | .190 | 3.56  | 4.83  |      |
| M   | .045   | .055 | 1.14  | 1.40  |      |
| N   | .080   | .115 | 2.03  | 2.92  |      |

# MC7815CT

## Representation Schematic Diagram



## Ordering Information

| Device           | Packing        |
|------------------|----------------|
| (Part Number)-BP | Bulk;1Kpcs/Box |

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