

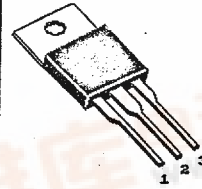
THREE-TERMINAL POSITIVE VOLTAGE REGULATOR

These voltage regulator are monolithic integrated circuits designed as fixed-voltage regulators for a wide variety of applications including local, on-card regulation. These regulators employ internal current limiting, thermal shutdown and safe-area compensation. With adequate heatsinking they can deliver output currents in excess of 1.0 ampere. Although designed primarily as a fixed voltage regulator, these devices can be used with external components to obtain adjustable voltages and currents.

- * Output Current in Excess of 1.0 Ampere
- * No External Components Required
- * Internal Thermal Overload Protection
- * Internal Short-Circuit Current Limiting
- * Output Transistor Safe-Area Compensation
- * Output Voltage Offered in 4% Tolerance

THREE-TERMINAL POSITIVE FIXED VOLTAGE REGULATOR 7815C

PLASTIC PACKAGE
TO-220

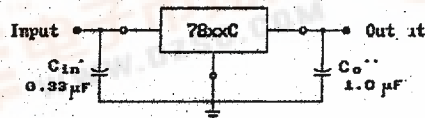


Pin: 1. INPUT
2. COMMON
3. OUTPUT

MAXIMUM RATINGS (T_A=25°C)

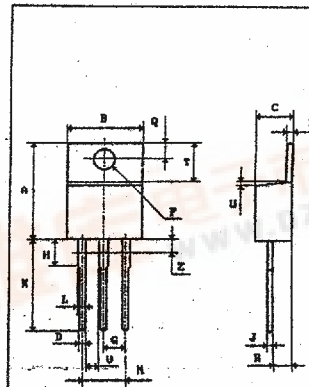
| Rating | Symbol | Value | Unit |
|--------------------------------------|-----------------|--------------------|-------|
| Input Voltage | V _{IN} | 35 | Vdc |
| Power Dissipation | P _D | Internally Limited | Watts |
| Operating Junction Temperature Range | T _J | 0 to +150 | °C |

STANDARD APPLICATION



A common ground is required between the input and the output voltages. The input voltage must remain typically 2.0 V above the output voltage even during the low point on the input ripple voltage.

- xx = these two digits of the type number indicate voltage.
- . = C_{in} is required if regulator is located an appreciable distance from power supply filter.
- .. = C_o is not needed for stability however, it does improve transient response.
- xx - indicates nominal voltage



| MILLIMETERS | | |
|-------------|-------|-------|
| DIM | MIN | MAX |
| A | 14.48 | 15.75 |
| B | 9.66 | 10.28 |
| C | 4.07 | 4.82 |
| D | 0.64 | 0.88 |
| F | 3.61 | 3.73 |
| G | 2.42 | 2.66 |
| H | 2.80 | 3.93 |
| J | 0.36 | 0.55 |
| K | 12.70 | 14.27 |
| L | 1.15 | 1.39 |
| N | 4.83 | 5.33 |
| Q | 2.54 | 3.04 |
| R | 2.04 | 2.75 |
| S | 1.05 | 1.39 |
| T | 5.97 | 6.47 |
| U | 0.50 | 1.27 |
| V | 1.15 | - |
| Z | - | 2.04 |



ELECTRICAL CHARACTERISTICS: $V_{IN}=23V$, $I_{OUT}=500mA$, $T_J=25^{\circ}C$, $C_{IN}=0.33\mu F$, $C_{OUT}=0.1\mu F$, unless otherwise specified

| Characteristics | Symbol | Min | Typ | Max | Unit |
|--|--------------|---------------|----------|---------------|------|
| Output Voltage $V_{IN}=35Vdc$, $I_{OUT}=50mA$ | V_0 | 14.4 14.25 | 15 15 | 15.6 15.75 | Vdc |
| Output Voltage(0° to $+125^{\circ}C$) $5.0mA < I_{OUT} < 1.0A$, $P_0 < 15W$, $17.5Vdc < V_{IN} < 30Vdc$ | V_0 | 14.25 | 15 | 15.75 | Vdc |
| Line Regulation $17.5Vdc < V_{IN} < 30Vdc$ $20Vdc < V_{IN} < 26Vdc$ | Reg_{line} | - - | - - | 300 150 | mV |
| Load Regulation $5.0mA < I_{OUT} < 1.5A$ $250mA < I_{OUT} < 750mA$ | Reg_{load} | - - | - - | 300 150 | mV |
| Quiescent Current | I_B | - | - | 8.0 | mA |
| Quiescent Current Change $17.5Vdc < V_{IN} < 30Vdc$ $5.0mA < I_{OUT} < 1.0A$ | ΔI_B | - - | - - | 1.0 0.5 | mA |
| Dropout Voltage $I_{OUT}=1.0A$ | $V_{IN}-V_0$ | - | 2.0 | - | Vdc |
| Peak Output Current | I_{max} | - | 2.2 | - | A |

NOTE. Load and line regulation are specified at constant junction temperature. Changes in V_0 due to heating effects must be taken into account separately.

Pulse testing with low duty cycle is used.

Mounting Recommendations

To get the maximum dissipation power it is necessary:

1. The exterior radiator is to be used. The quality of the machined surface at the location of radiator and microcircuit contact is to be not worse than the quality of a microcircuit heatsink.
2. To use the grease for the microcircuit-to-radiator interface thermal resistance to be improved.
3. Mounting torque for screw mounting:
Minimum torque (for good heat transfer) 0.55Nm (5.5kgcm);
Maximum torque (to avoid damaging the device) 0.8Nm (8kgcm).

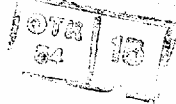
4. At the bending of the leads the maximum permissible force on the body, for 5 seconds is 20N (2kgf). The leads can be bent through 90° maximum besides the lead should be mainly bent not less than 2.4mm from the body.

5. The leads are to be soldered:
-dip or wave soldering. Temperature $< 260^{\circ}C$ at a distance from the body 5mm and for a total time $< 7s$.
-hand soldering. Temperature at a distance from the body $> 3mm$ for a total time $< 5s$ is $275^{\circ}C$.

CERTIFICATE OF QUALITY

The specified products quality is in compliance with this specification.

SIGN of CONTROL



48-0