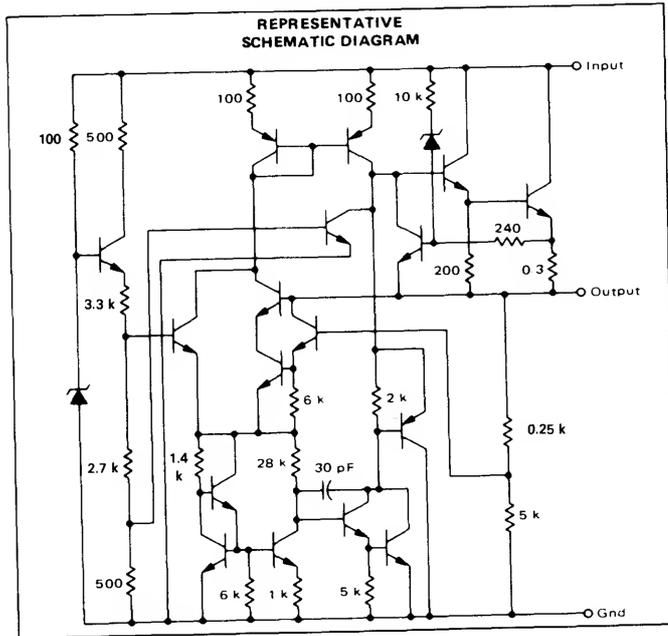


**MOTOROLA**  
**SEMICONDUCTOR**  
**TECHNICAL DATA**

**THREE-TERMINAL POSITIVE VOLTAGE REGULATORS**

These voltage regulators 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 2% and 4% Tolerance



**ORDERING INFORMATION**

| Device     | Output Voltage Tolerance | Tested Operating Junction Temp. Range | Package       |
|------------|--------------------------|---------------------------------------|---------------|
| MC78XXK    | 4%                       | -55 to +150°C                         | Metal Power   |
| MC78XXAK*  | 2%                       |                                       |               |
| MC78XXCK   | 4%                       | 0 to +125°C                           | Plastic Power |
| MC78XXACK* | 2%                       |                                       |               |
| MC78XXCT   | 4%                       | -40 to +125°C                         | Plastic Power |
| MC78XXACT  | 2%                       |                                       |               |
| MC78XXBT   | 4%                       |                                       |               |

\*2% regulators in Metal Power packages are available in 5, 12 and 15 volt devices.

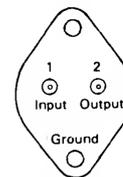
**MC7800**  
**Series**

**THREE-TERMINAL POSITIVE FIXED VOLTAGE REGULATORS**

**SILICON MONOLITHIC INTEGRATED CIRCUITS**

**3**

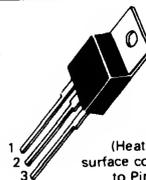
**K SUFFIX METAL PACKAGE CASE 1**



(Bottom View)

Pins 1 and 2 electrically isolated from case. Case is third electrical connection

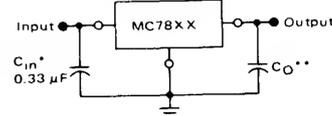
**T SUFFIX PLASTIC PACKAGE CASE 221A**



PIN 1. INPUT  
 2. GROUND  
 3. OUTPUT

(Heatsink surface connected to Pin 2.)

**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<sub>in</sub> is required if regulator is located an appreciable distance from power supply filter.

\*\* = C<sub>O</sub> is not needed for stability; however, it does improve transient response.

XX indicates nominal voltage

**TYPE NO./VOLTAGE**

|        |           |        |          |
|--------|-----------|--------|----------|
| MC7805 | 5.0 Volts | MC7812 | 12 Volts |
| MC7806 | 6.0 Volts | MC7815 | 15 Volts |
| MC7808 | 8.0 Volts | MC7818 | 18 Volts |
| MC7809 | 9.0 Volts | MC7824 | 24 Volts |