7800 Series
Positive Voltage Regulators

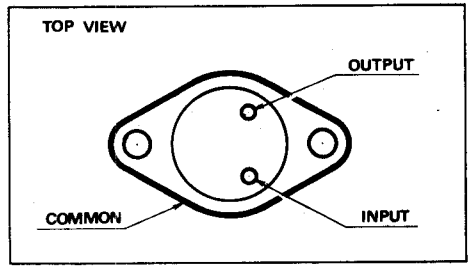
GENERAL DESCRIPTION

The μA7800 series of three-terminal positive voltage regulators are constructed using the Fairchild Planar epitaxial process. These regulators employ internal current limiting, thermal shutdown and safe-area compensation making them essentially blow-out proof. If adequate heat sinking is provided, they can deliver over 1A output current. They are intended as fixed-voltage regulators in a wide range of applications including local, on-card regulation for elimination of noise and distribution problems associated with single point regulation. In addition to use as fixed voltage regulators, these devices can be used with external components to obtain adjustable output voltages and currents and as the power pass element in precision regulators.

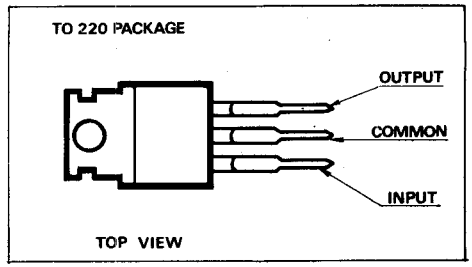
FEATURES

Output current in excess of 1 amp.
No external components.
Internal thermal overload protection.
Internal short circuit current limiting.
Output transistor safe-area compensation.
Available in the TO-220 and the TO-3 package.

CONNECTION DIAGRAM



CONNECTION DIAGRAM



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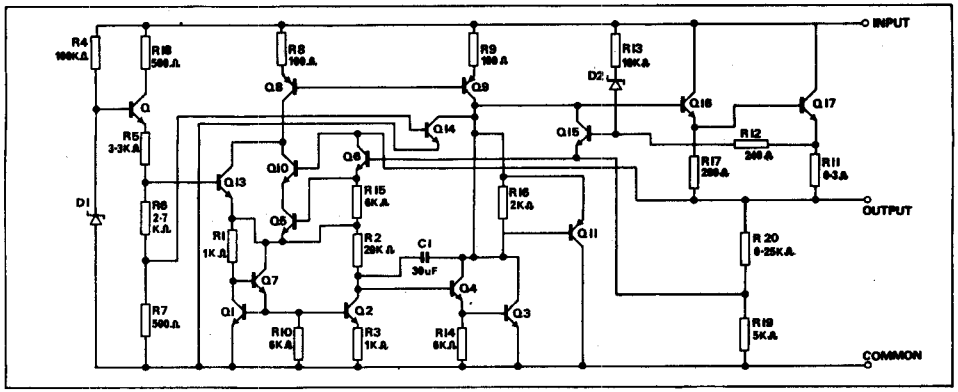
EQUIVALENT CIRCUIT



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7800 Series *(continued)*

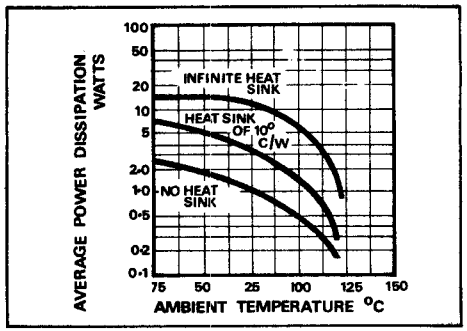
ABSOLUTE MAXIMUM RATINGS

Input voltages (5V through 18V)	35V
(24V)	40V
Internal power dissipation	Internally limited
Storage temperature range	−65°C to +150°C
Operating junction temperature range	0°C to +125°C
Lead temperature (soldering, 60 second time limit) TO-3 package	300°C
(soldering, 10 second time limit) TO-220 package	230°C

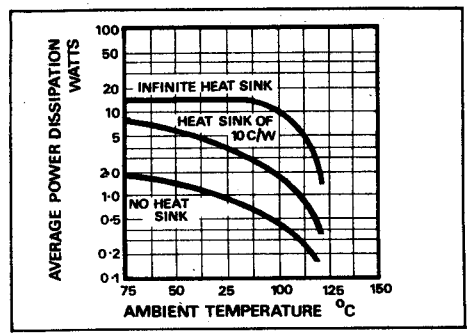
REFERENCE TABLE

Code	Voltage range	Package	Stock No.
7805KC	5V	TO3	**35865A**
7805UC	5V	TO220	**35866X**
7806KC	6V	TO3	**35867H**
7806UC	6V	TO220	**35868F**
7808KC	8V	TO3	**35869D**
7808UC	8V	TO220	**35870G**
7812KC	12V	TO3	**35871E**
7812UC	12V	TO220	**35872C**
7815KC	15V	TO3	**35873A**
7815UC	15V	TO220	**35874X**
7818KC	18V	TO3	**35875H**
7818UC	18V	TO220	**35876F**
7824KC	24V	TO3	**35877D**
7824UC	24V	TO220	**35878B**

7800 Series— Typical Performance Curves



Maximum average power dissipation as a function of ambient temperature (TO3).



Maximum average power dissipation as a function of ambient temperature (TO220).

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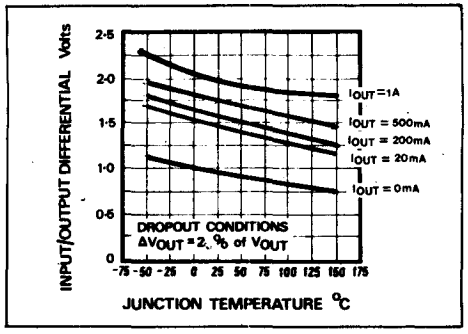
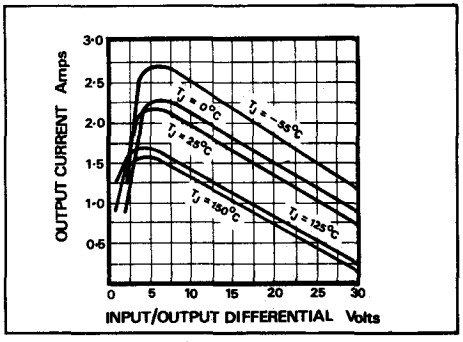
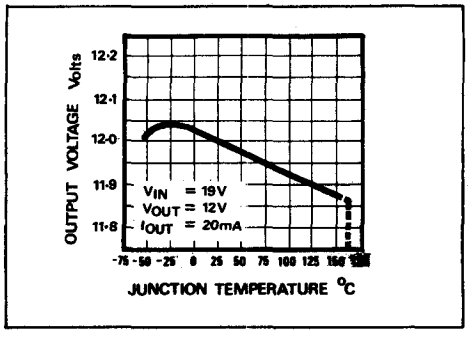
7800 Series—Typical Performance Curves—*(continued)*



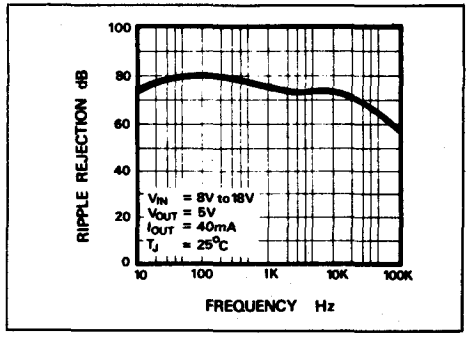
Dropout voltage as a function of junction temperature.



Peak output current as a function of input differential voltage.



Output voltage as a function of junction temperature.



Ripple rejection as a function of frequency.