

7800 Series Positive Voltage Regulators

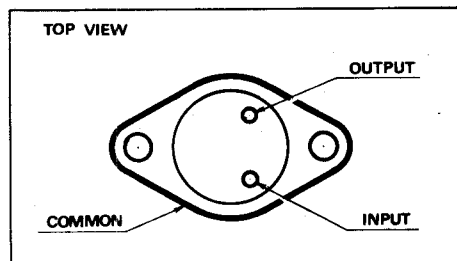
GENERAL DESCRIPTION

The μ A7800 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.

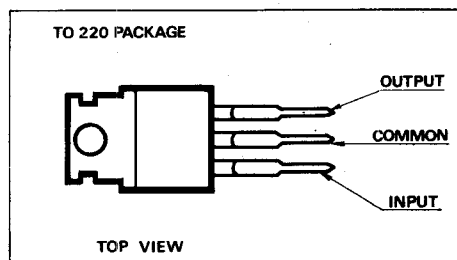
FEATURES

- 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.

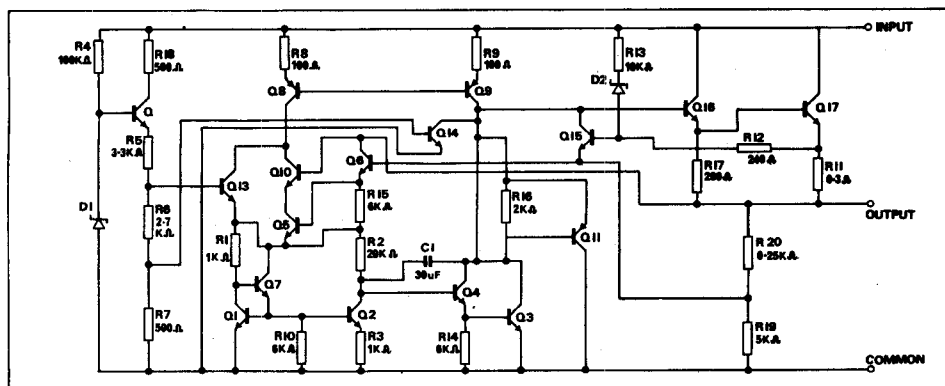
CONNECTION DIAGRAM



CONNECTION DIAGRAM



EQUIVALENT CIRCUIT



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7800 Series (continued)

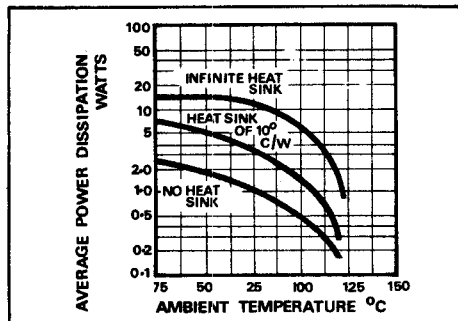
ABSOLUTE MAXIMUM RATINGS

Input voltages (5V through 18V) (24V)	35V 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

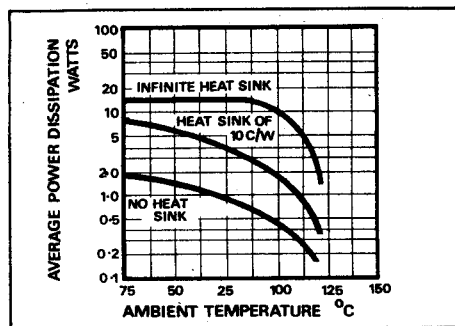
REFERENCE TABLE

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



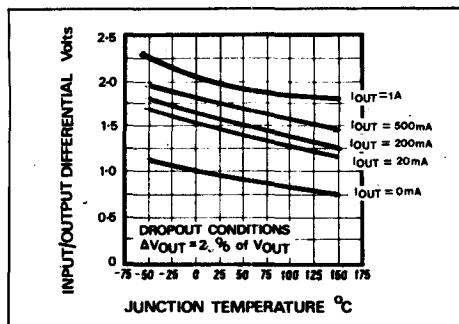
Maximum average power dissipation as a function of ambient temperature (TO3).



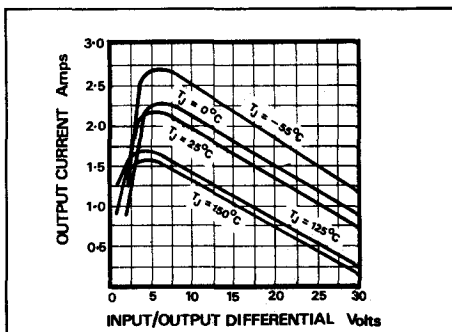
Maximum average power dissipation as a function of ambient temperature (TO220).

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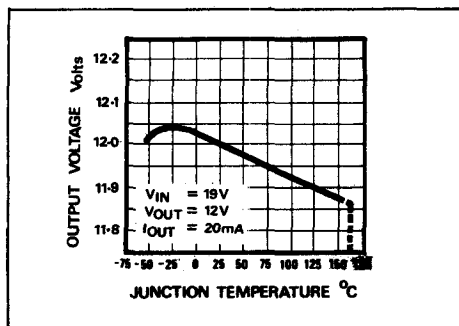
7800 Series—Typical Performance Curves—(continued)



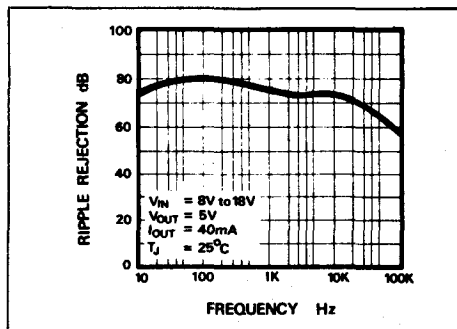
Dropout voltage as a function of junction temperature.



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.