GM7800 Series

1.5A POSITIVE VOLTAGE REGULATOR

Description

The GM7800 series are classic regulators, which are useful in a wide range of applications. For example, they can be used for local on-card regulation to eliminate the distribution and problems associated with single point regulation.

The wide range of output voltages (5V to 27V) make this series versatile in most applications. Although the 7800 series is designed as fixed output voltage regulators, they can be used as adjustable output voltage options by a few external components.

These virtually indestructible positive voltage regulators are protected by thermal shut down and internal current limiting. Most applications require no external components.

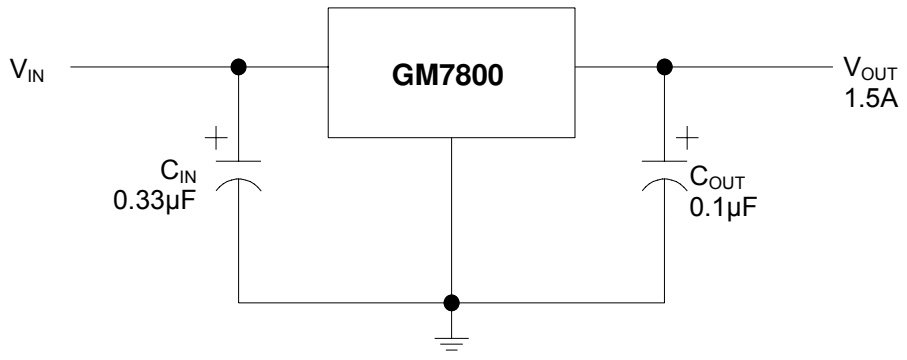
Current limiting prevents the peak output current to a safe value. Safe area protection of the output transistor limits in thermal power dissipation. In case of internal power dissipation becomes too high for the heat sinking provided the thermal shut down circuit will activate to prevent the regulators from overheating.

The GM7800 series are available in TO-220, TO-252, TO-263 packages.

Features

- **Output current up to 1.5A**
- **Output Voltages 5V, 6V, 8V, 9V, 10V, 12V, 15V, 18V, 20V, 24V and 27V**
- **3- Terminal Regulators**
- **Internal Thermal Overload Protection**
- **Internal Short-Circuit Current Limiting**
- **Output Transistor Safe-Area Protection**
- **TO-220, TO-252 and TO-263 Packages**
- **High Power Dissipation Capability**
- **Direct replacements for LM78xx series**

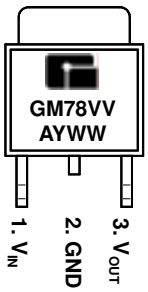
Typical Application Circuit



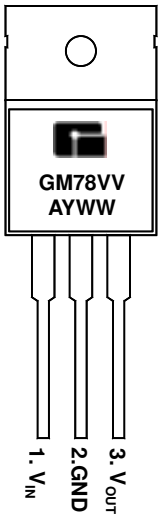
For a positive regulator, a 0.33μF bypass capacitor should be used on the input terminals. While not necessary for stability, an output capacitor of 0.1μF may be used to improve the transient response of the regulator. These capacitors should be on or as near as possible to the regulator terminals .

Marking Information and Pin Configurations (Top View)

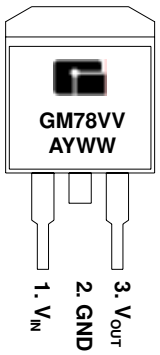
TO 252
(D-PAK)



TO 220



TO 263
(D^2-PAK)

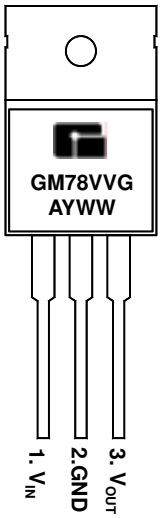


VV: Output Voltage Codes (05: 5.0V, …12:12V)
A: Assembly/Test Site Code
Y: Year
WW: Week

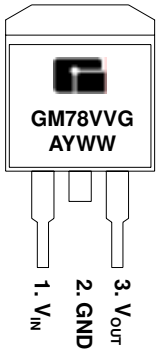
Marking Information and Pin Configurations (Top View) – Green Products

TO 252
(D-PAK)

TO 220



TO 263
(D^2-PAK)



G: Green Product
VV: Output Voltage Codes (05: 5.0V, …12:12V)
A: Assembly/Test Site Code
Y: Year
WW: Week

Ordering Information

Ordering Number	V_{OUT}	Package	Shipping
GM78**00**TA3T	**00** = 5.0V 6.0V 8.0V 9.0V 10.0V 12.0V 15.0V 18.0V 24.0V	TO-263	50 Units/Tube
GM78**00**TA3R		TO-263	800 Units / Reel
GM78**00**TB3T		TO-220	50 Units/Tube
GM78**00**TC3T		TO-252	80 Units/Tube
GM78**00**TC3R		TO-252	2,500 Units / Reel

Ordering Information – Green Products

Ordering Number	V_{OUT}	Package	Shipping
GM78**00**TA3TG	**00** = 5.0V 6.0V 8.0V 9.0V 10.0V 12.0V 15.0V 18.0V 24.0V	TO-263	50 Units/Tube
GM78**00**TA3RG		TO-263	800 Units / Reel
GM78**00**TB3TG		TO-220	50 Units/Tube
GM78**00**TC3TG		TO-252	80 Units/Tube
GM78**00**TC3RG		TO-252	2,500 Units / Reel

Absolute Maximum Ratings

PARAMETER		SYMBOL	RATINGS	UNITS
Input Voltage	GM7805 to GM7818	V_I	35	V
	GM7824 to GM7827		40	
Continuous total dissipation at 25°C free air temperature			2	W
Continuous total dissipation at (or below) 25°C case temperature			15	W
Operating Ambient Temperature		T_A	- 40 to 125	°C
Storage Temperature		T_{stg}	- 60 to 150	°C
Lead Temperature 1.6mm (1/6 inch) from case for 10 seconds			260	°C

Recommended Operating Conditions

PARAMETER		SYMBOL	MIN	MAX	UNITS
Input Voltage	GM7805	V_I	7	25	V
	GM7806		8	25	
	GM7808		10.5	25	
	GM7809		11.5	27	
	GM7810		12.5	28	
	GM7812		14.5	30	
	GM7815		17.5	30	
	GM7818		21	33	
	GM7820		23	36	
	GM7824		27	38	
	GM7827		30	40	

Block Diagram