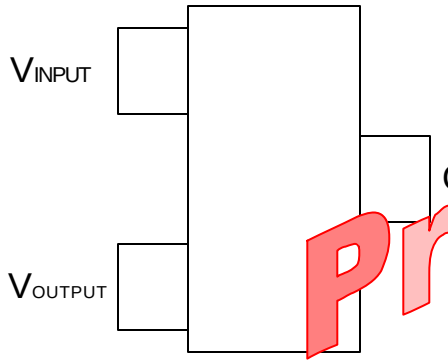
NVE Corporation

5.0V Voltage Regulator

The NVE 5.0-volt regulator is designed for a variety of industrial and automotive applications. The regulator can deliver up to 20 mA of output current. It is provided in a SOT23 3-pin package. A SOT89 package is available for higher power dissipation applications.



Electrical characteristics @-40°C to +175°C, unless otherwise noted				
Parameter	Min	Typ	Max	Units
Input Voltage	-30		30	Volts
Output Voltage	4.5		5.5	Volts
Output Current			20	Milliamps
Input Voltage Regulation	6.2		30	Volts
Dropout Voltage			1.5	Volts
Bias Current			600	Microamps
Bias Current Change			300	Microamps

Absolute maximum ratings *	
Parameter	Limit
Input Voltage	36V
Output Current	25mA
Operation Temperature Range	-40°C to 125°C
Junction Temperature Range, T_J	-40°C to 175°C
Package Power Dissipation, Θ_{JA}	450°C/Watt
Storage Temperature Range	-65 °C to +175 °C

*Stresses beyond those listed under “Absolute maximum ratings” may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under “Electrical characteristics” is not implied.

Notes:

1. Input voltage and output current are limited by thermal power dissipation at the package. When operating at high voltages, output current must be reduced.
   The available Output Current will depend primarily on the package. The SOT23 package has a power dissipation of approximately 400C/Watt. Therefore, if the input voltage to the regulator is 15V, and the output current is 7mA, the power dissipation in the package will be 105mW, resulting in a 42C temperature rise in the package. Higher voltages and currents will increase this proportionally. NVE rates the maximum junction temperature of this part at 175C. It is possible that this temperature can be increased, but testing on the completed parts would need to be performed to confirm this. Alternatively, a larger package with better thermal characteristics (for example, the SOT89, 100C/Watt) could be used. However, this would increase size and cost.
2. Due to package size, SOT23 package contains 3-letter code to designate part type.
3. This part has reverse battery protection.