DC-Series Voltage Regulators
High Voltage, Low Power Voltage Regulators

Features:

- Input Voltage to 36VDC (Max Rating 45VDC)
- 5.0V and 3.3V Regulated Output
- Reverse Battery Protection
- Excellent Immunity to Transients and ESD
- High Temperature Operation
- Small, Low-Profile Surface Mount Package

Applications:

- Industrial Sensors and Controls
- Automotive Sensors and Controls

Description:

The DC series voltage regulator ICs are designed for use in harsh, noisy environments where immunity to large voltage transients and acceptance of high input voltages are required. These regulators protect the sensitive electronic components downstream, while providing a stable regulated supply voltage. They are rated for high temperature operation, up to +170°C. The low-profile small footprint package features an exposed die attach pad, for direct heat sinking to the circuit board.

Specifications

Electrical characteristics (-40°C to +175°C, unless otherwise noted)

Parameter	Min	Typ	Max	Units
Input Voltage (DC001-10)	4.5		36	Volts
Output Voltage (DC001-10)	3.0	3.3	3.6	Volts
Input Voltage (DC002-10)	6.2		36	Volts
Output Voltage (DC002-10)	4.5	5.0	5.5	Volts
Output Current			20	Milliamps
Bias Current at Zero Output Current			900	Microamps

Absolute maximum ratings*	
Parameter	**Limit**
Input Voltage	45V
Reverse Battery Voltage	-60V
Output Current	25mA
Junction Temperature Range, T_J	-40°C to +170°C
Storage Temperature Range	-65 °C to +170°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.

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Notes:

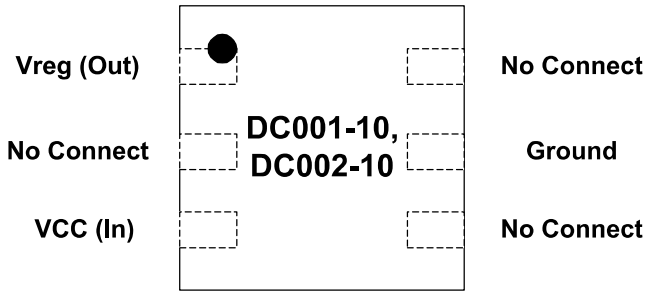
1. Power dissipation rating for TDFN6 package in free air is 320°C/Watt. Soldering the package to a PCB, including the die attach paddle, improves temperature performance substantially. The input voltage and output current are limited by thermal power dissipation at the package.

2. Due to package size, TDFN6 package has a three-letter code to designate part type.

Package:

Please see the package drawing section in the Appendix for dimensions of the TDFN6 package.

Pin Configuration



Note: The die attach pad is exposed on the back of this package. NVE recommends that it be connected to the ground pin and the PCB for improved temperature performance.

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