

AUTOMOTIVE DC-DC CONVERTER SDC144.1 (150 WATTS)

APPLICATION:

- * Industrial Electric Vehicles
- * Public Transportation
- * Recreational vehicle lighting
- * Position and control equipment
- * Navy and aerospace
- * Motor-controller for DC Motors
- * Communication equipment
- * Mobile equipment
- * Global Positioning Systems GPS

Description: The SDC 144.1 is a very high efficient and high density DC-DC Converter for electric vehicle applications. The unit features a unique design for optimum heat transfer and mounting. Wide input voltage range from 16 to 56 Volt (other voltages on request) allows the use with 24, 36 and 48V batteries. It works with the new 42V standard onboard voltage, as used on new car models. The unit is a down-converter without galvanic isolation. The input and output share the same ground connection for simplicity, low cost and highest efficiency.

Highlights:

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|---|----------------------------|--|-----------------------|
| * Light weight | * Transient protection | * Over-temperature Limit | * Humidity protection |
| * High power density | * Compact Package | * Water spray protection | * Wide temp. range |
| * Output dimmable | * Wide input voltage range | * Vibration resistant | * High Efficiency |
| * LED for visual Input Voltage Indication | | * LED for visual Output Voltage Indication | |

Features:

Input Filter and Transient Protection: Unique input filtering with rigid transient protection enable this unit to be used in severe transient and high noise environments. These situations are present in electric powered vehicles, as used in industrial, automotive and aerospace applications.

High Frequency Switching: The module features a proprietary near zero loss high frequency switching method, with no RF ringing and absolutely no switching transients. This feature provides highest efficiency (90%). RF compliance with low interference and low noise outputs. Remarkable power density of 25 Watts / in³.

Over-temperature Limit: Even though the unit has very high efficiency (90%), it is heating up during operation. An internal over-temperature control limits the output power, so that the internal dissipation is reduced and overheating prevented.

Input Overvoltage and Transient Protection: The input filter allows for filtering of transients and also limits the magnitude of transients. Should a lasting overvoltage condition occur (58 V input), the unit is switched off and stops operation. When the input voltage is reduced to the operating voltage, it resumes operation.

Input Fuse and Reverse Polarity Protection: The converter features a built-in input fuse. If the polarity is accidentally reversed on the input, a protective diode on the input protects the input voltage from reversing. The input fuse would then "blow" because of the "short circuit" created.

Output Overcurrent and Short Circuit Protection: If the output current is increased due to a too heavy load or due to a short circuit, the maximum output current is limited to about 16 to 17 Amperes. The Voltage reduces automatically and the maximum output power is therefor reduced. The unit turns off completely and a new start cycle is initiated.

Connection: Heavy duty screw terminals provide for input and output connections.

Control: Three pins on the output provide for attenuating the output voltage. A potentiometer (10 to 20 kOhm) can be connected to those pins. The voltage can be gradually reduced to about 8.5 Volts. This feature can be used to dim lights that are connected to the output. If a switch is connected, the output can be switched between a low or high state for controlling the high or low beam.

SPECIFICATIONS

SDC 144.1:

INPUT: + 16 V MIN. + 56 V MAX.
(other voltages up to 96V on request)

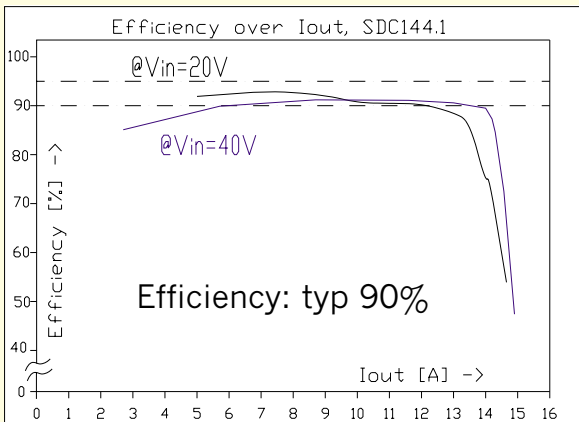
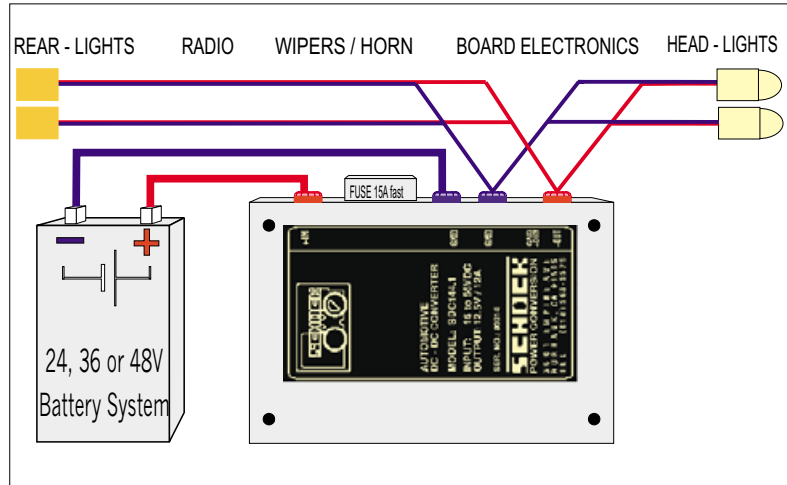
OUTPUT: + 12.6 V / 12 A (max. 200W)
(other voltages on request)

Protection Circuits:

- * Input Transient Protection
- * Input Over-Voltage Shutdown
- * Reverse Polarity Protection
- * Input Fuse
- * Over-temperature Protection
- * Output Overcurrent Limit

Operational Temperature: - 40°C to + 80°C

TYPICAL APPLICATION:



Weight: 8.4 ozs. (0.525 lb), 240 grams

Dimensions:

3.950" x 2.613" x 0.671"
100.3mm x 66.4mm x 17.0 mm

Mounting: 4 x M3 or 4-40 screw holes

