

AM1DR-N Series

1 watt dc-dc converters

- 7PIN SIP PACKAGE
- REGULATED OUTPUT VOLTAGE
- LOW RIPPLE & NOISE
- HIGH EFFICIENCY UP TO 79%
- INPUT/OUTPUT ISOLATION: 1000VDC
- OPERATING TEMPERATURE: -40°C ... +85°C
- PIN-COMPATIBLE WITH MULTIPLE MANUFACTURERS
- UL94-VO PACKAGE

GENERAL DESCRIPTION

Our AM1DR-N series is a family of cost effective 1W single output isolated DC-DC converters. These converters achieve low cost and ultra-miniature SIP7 pin size without compromising performance and reliability.

Twelve models operates from input voltages of 5, 12 & 24VDC; producing regulated output voltage levels of 5, 9, 12, 15VDC. Full SMD-design and a 100% production test of parameters ensures a high reliability in this product.

ELECTRICAL SPECIFICATIONS

Specifications typical at +25°C, nominal input voltage, rated output current unless otherwise specified

Input Specifications:

Voltage range	±5%
Filter	Capacitor

Isolation Specifications:

Rated voltage (60 sec)	1000VDC
Resistance	> 1000MOhm
Capacitance	60pF, typ.

Output Specifications:

Voltage accuracy	±3%, max.
Ripple & noise (at 20MHz BW)	50 mVp-p, typ.
Short circuit protection	1 sec.
Line voltage regulation	±0.5%, max.
Load voltage regulation	±0.5%, max.
Temperature coefficient	±0.02%/°C, typ.

General Specifications:

Efficiency	72% to 79%
Switching frequency	100KHz, typ. 100% load

Environmental Specifications:

Operating temperature (ambient)	-40°C ... +85°C
Storage temperature	-55°C ... +125°C
Case temperature	+95°C, max.
Derating	None required
Humidity (non-condensing)	Up to 90%
Cooling	Free-air Convection

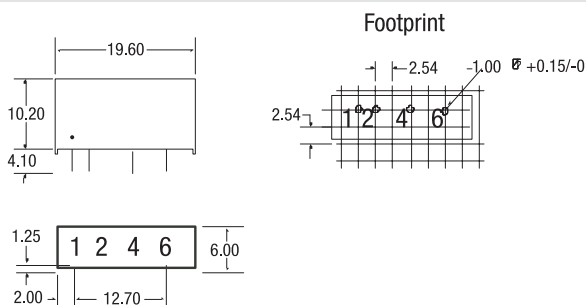
Physical Specifications:

Dimensions	19.6x6.0x10.2mm 0.77x0.24x0.4inches
Weight	2.7g
Case material	Plastic UL94-VO

MTBF: > 900,000 hrs (MIL-HDBK-217F, Ground Benign, t=+25°C)

Specifications are subject to change without notification

OUTLINE DIMENSIONS & PIN CONNECTIONS

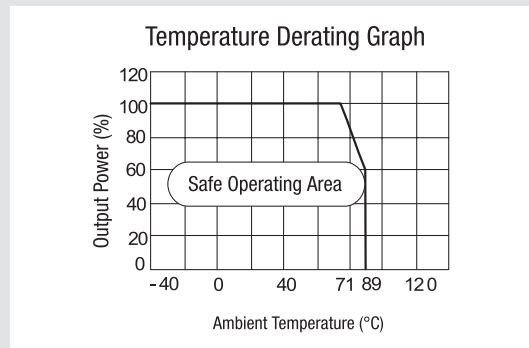


Pin	1000VDC
	Single
1	+V Input
2	-V Input
4	-V Output
5	Omitted
6	+V Output
7	Omitted

MODELS

Models	Input Voltage	Ouput Voltage	Ouput Current max.
AM1DR-0505S-N	5V±5%	5VDC	150mA
AM1DR-0509S-N		9VDC	111mA
AM1DR-0512S-N		12VDC	83mA
AM1DR-0515S-N		15VDC	67mA
AM1DR-1205S-N	12V±5%	5VDC	150mA
AM1DR-1209S-N		9VDC	111mA
AM1DR-1212S-N		12VDC	83mA
AM1DR-1215S-N		15VDC	67mA
AM1DR-2405S-N	24V±5%	5VDC	150mA
AM1DR-2409S-N		9VDC	111mA
AM1DR-2412S-N		12VDC	83mA
AM1DR-2415S-N		15VDC	67mA

TYPICAL CHARACTERISTICS



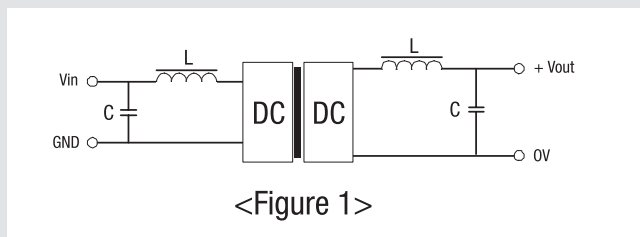
APPLICATION NOTE

Filtering

In some circuits which are sensitive to noise and ripple, a filtering capacitor may be added to the DC/DC output end and input end to reduce the noise and ripple. However, the capacitance of the output filter capacitor must be proper. If the capacitance is too big, a startup problem might arise. For every channel of output, provided the safe and reliable operation is ensured, the greatest capacitance of its filter capacitor sees the external capacitor table. To get an extremely low ripple, an "LC" filtering network may be connected to the input and output ends of the DC/DC converter, which may produce a more significant filtering effect. It should also be noted that the inductance and the frequency of the "LC" filtering network should be staggered with the DC/DC frequency to avoid mutual interference (see figure 1).

Requirement On Output Load

To ensure this module can operate efficiently and reliably, a minimum load is specified for this kind of DC/DC converter in addition to a maximum load (namely full load). During operation, make sure the specified range of input voltage is not exceeded, the minimum output load is not less than 10% of the full load, and that this product should never be operated under no load! If the actual output power is very small, please connect a resistor with proper resistance at the output end in parallel to increase the load.



External Capacitor Table

Vin	External Capacitor	Vout	External Capacitor
5VDC	4.7uF	5VDC	10uF
12VDC	2.2uF	9VDC	4.7uF
24VDC	1uF	12VDC	2.2uF
-	-	15VDC	1uF