AM3T-N Series

Picture Available Soon

3 watt dc-dc converters

- 24 PIN DIP PACKAGE
- WIDE 2:1 INPUT RANGE
- HIGH EFFICIENCY UP TO 83%
- SHIELDED METAL PACKAGE
- INPUT/OUTPUT ISOLATION OF 1500VDC
- OPERATING TEMPERATURE: -40°C ... +85°C
- CONTINUOUS SHORT CIRCUIT PROTECTION
- PIN-COMPATIBLE WITH MULTIPLE MANUFACTURERS

GENERAL DESCRIPTION

Our AM3T-N series is a family of cost effective 3W single and dual output DC/DC converters. These converters combine a shielded metal package in a 24-pin DIP compatible case and includes high performance features such as a 1500VDC input/output isolation voltage, continuous short circuit protection and a tight line / load regulation. Wide range devices operate over a 2:1 input voltage range continuously providing a stable output voltage.

32 models operate from input voltages of 5, 12, 24 and 48VDC with output voltages of 3.3, 5, 12, 15, ±5, ±9, ±12, ±15VDC. High performance features include high efficiency operation up to 83% and output voltage accuracy of ±1%. All models are packaged in a low profile 31.75 x 20.32 x 9.45mm case. Operation is specified over the full operating temperature range of -40°C to +85°C with no derating required. Cooling is by free-air convection.

ELECTRICAL SPECIFICATIONS

All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

Input Specifications:	
Voltage range	5VDC, 4.5~9VDC
	12VDC, 9~18VDC
	24VDC, 18~36VDC
	48VDC, 36~72VDC
Filter	p (Pi) Network

Isolation Specifications:	
Rated voltage (60 sec)	1500VDC
Resistance	> 1000MOhm
Capacitance	80pF, typ.

Environmental Specifications:	
Operating temperature (ambient)	-40°C ... +85°C
Storage temperature	-55°C ... +125°C
Case Temperature	+100°C, max.
Derating	None required
Humidity (non-condensing)	Up to 95%
Cooling	Free-air Convection

General Specifications:	
Efficiency	64% to 83%
Switching frequency	300KHz, typ., 100% load

Output Specifications:	
Voltage accuracy (Single)	±1%, typ.
Voltage accuracy (Dual)	±1% p. & ±3% n., typ.
Ripple	30m Vp-p
Noise (at 20MHz BW)	80mVp-p, typ.
Short circuit protection	Continuous
Line voltage regulation	±0.2%, typ.
Load voltage regulation	±0.1%, typ.
Temperature coefficient	±0.03%/°C, max.

Physical Specifications:	
Dimensions	31.75x20.32x9.45mm
	1.25x0.80x0.40inches
Weight	16.3g
Case material	Metal

MTBF: > 1 000 000 hrs single, > 1 350 000 hrs dual (MIL-HDBK-217F, Ground Benign, t=+25°C)

Specifications are subject to change without notification.

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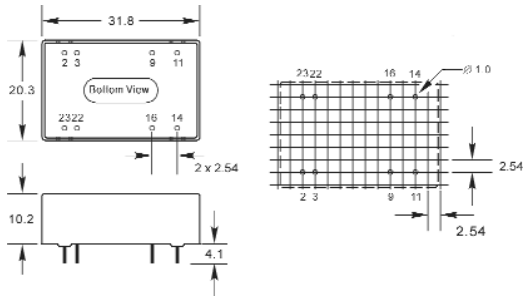
OUTLINE DIMENSIONS & PIN CONNECTIONS



Note: All Pins on a 2.54mm pitch; All Pin diameters are 0.50 mm (Tolerance:±0.25); All dimensions in mm.

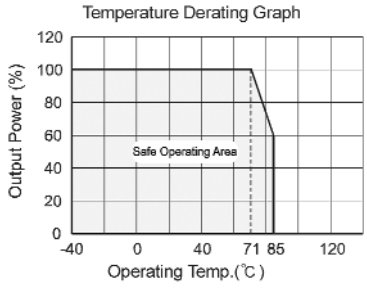
Pin	Single	Dual
1	Omitted	Omitted
2	-V Input	-V Input
3	-V Input	-V Input
9	Omitted	Common
10	Omitted	Omitted
11	N.C.	-V Output
12/13	Omitted	Omitted
14	+V Output	+V Output
15	Omitted	Omitted
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input
24	Omitted	Omitted

MODELS

Single Output

Models	Input Voltage	Ouput Voltage	Ouput Current max.
AM3T-0503S-N	4.5-9VDC	3.3VDC	600mA
AM3T-0505S-N		5VDC	600mA
AM3T-0512S-N		12VDC	250mA
AM3T-0515S-N		15VDC	200mA
AM3T-1203S-N	9-18VDC	3.3VDC	600mA
AM3T-1205S-N		5VDC	600mA
AM3T-1212S-N		12VDC	250mA
AM3T-1215S-N		15VDC	200mA
AM3T-2403S-N	18-36VDC	3.3VDC	600mA
AM3T-2405S-N		5VDC	600mA
AM3T-2412S-N		12VDC	250mA
AM3T-2415S-N		15VDC	200mA
AM3T-4803S-N	36-72VDC	3.3VDC	600mA
AM3T-4805S-N		5VDC	600mA
AM3T-4812S-N		12VDC	250mA
AM3T-4815S-N		15VDC	200mA

TYPICAL CHARACTERISTICS



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MODELS
Dual Output

Models	Input Voltage	Ouput Voltage	Ouput Current max.
AM3T-0505D-N	4.5-9VDC	±5VDC	±300mA
AM3T-0509D-N		±9VDC	±165mA
AM3T-0512D-N		±12VDC	±125mA
AM3T-0515D-N		±15VDC	±100mA
AM3T-1205D-N	9-18VDC	±5VDC	±300mA
AM3T-1209D-N		±9VDC	±165mA
AM3T-1212D-N		±12VDC	±125mA
AM3T-1215D-N		±15VDC	±100mA
AM3T-2405D-N	18-36VDC	±5VDC	±300mA
AM3T-2409D-N		±9VDC	±165mA
AM3T-2412D-N		±12VDC	±125mA
AM3T-2415D-N		±15VDC	±100mA
AM3T-4805D-N	36-72VDC	±5VDC	±300mA
AM3T-4809D-N		±9VDC	±165mA
AM3T-4812D-N		±12VDC	±125mA
AM3T-4815D-N		±15VDC	±100mA

APPLICATION NOTE

Recommended Circuit
All of our AM3T-N Series have been tested according to the following recommended testing circuit before leaving our factory. This series should be tested under load & never be tested under no load (See Figure 1).

If you want to further decrease the input/output ripple, you can increase capacitance properly or choose capacitors with a low ESR. However, the capacitance should not be too high.(See table 1).

Input Current
When it is used in an unregulated power supply, be sure that the fluctuating range of the power supply and the rippled voltage do not exceed the module standard. Input current of power supply should afford the startup current of this kind of DC/DC module. (See figure 2)

External Capacitor
Although this series of DC/DC converters can work without an external capacitor, it is highly recommended to use one in order to keep an optimum performance. (See Table)

Requirement on Output Load
To ensure this module 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 out put load is not less than 10% Of the full load, and that this product should never be operated under no load!!! If the actual load is less below the specified minimum load, the output ripple of this type of DC/DC converter will increase drastically and at the same time efficiency & reliability of the circuit will decrease deeply .If the actual output power from the load in your circuit is very small, please connect a resistor with proper resistance at the output end in parallel to increase the load, or use our company's other products with a lower rated output power.

Figure 1 - Single Output

Figure 1 - Dual Output

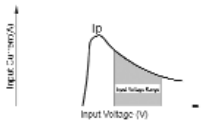

Figure 2 - Single & Dual Outputs

External Capacitor Table - Single

Vin	Cin	Cout (0+70°C)	Cout (-40+85°C)
5 & 12V	100uF	100uF	47uF
24 & 48V	10uF	(Electrolytic Capacitor)	(Tantalum Capacitor)

External Capacitor Table - Dual

Vin	Cin	Cout (0+70°C)	Cout (-40+85°C)
5 & 12V	100uF	100uF	47uF
24 & 48V	22uF	(Electrolytic Capacitor)	(Tantalum Capacitor)