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AM3IW-NZ



The new AM3IW-NZ is an ultra-wide input DC/DC converter that offers 4:1 input voltage range and dual isolated output channels also leading to improved reliability and performance. This series will offer many benefits to your new system design for several voltage supply rails in just one component.

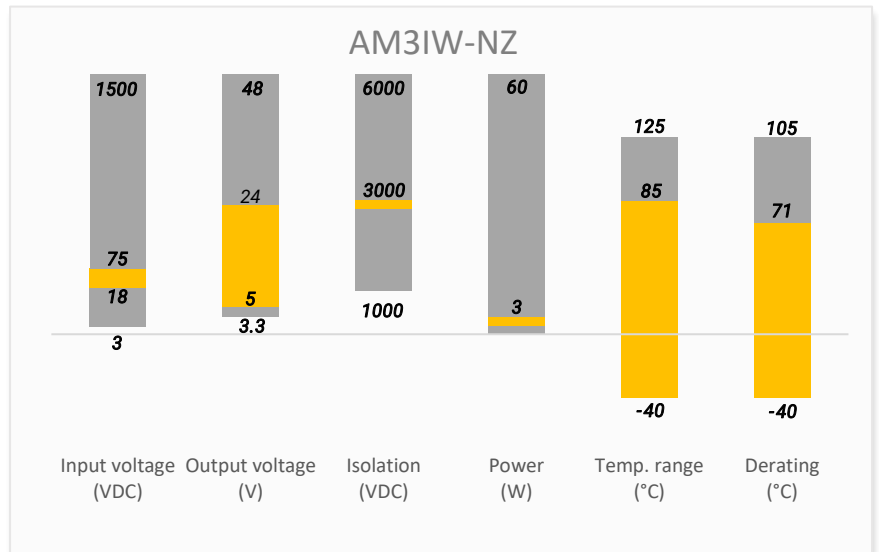
This series offers great operating temperatures, from -40°C to +85°C with full power up to 71°C. It also features an isolation of 3000VDC for improved reliability and system safety. Furthermore, a high MTBF of 1,000,000h, output short circuit protection (OSCP), output over-current protection (OCP) and input under-voltage protection (UVLO) come standard with the series.

The AM3IW-NZ is perfect for data transmission and telecommunication devices, distributed power supply systems and hybrid module systems.

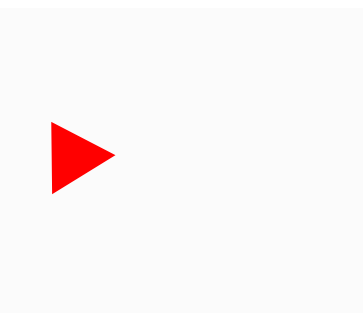
Features

- Operating Temp: -40 °C to +85 °C
- High isolation voltage: 3000VDC
- Low ripple & noise, 75mV (p-p), typ.
- Regulated Output
- SIP type package
- Output short circuit, over-current, input under-voltage protection

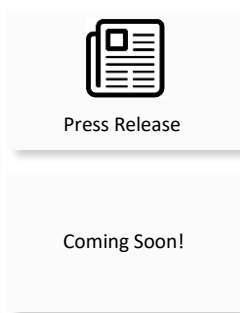
Summary



Training



Product Training Video
(click to open)



Application Notes

Applications



Power Grid



Industrial



Telecom



Instrumentation

Models & Specifications

Dual Output

Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current Max (mA)		Output Current Max (mA)	Maximum Capacitive Load (μF)	Efficiency (%) Full Load Typ.
			No Load	Full Load			
AM3IW-480505DH30NZ	48 (18-75)	5 / 5	12	83	300 / 300	680 / 680	78
AM3IW-480512DH30NZ	48 (18-75)	5 / 12	12	83	300 / 125	680 / 330	78
AM3IW-480524DH30NZ	48 (18-75)	5 / 24	12	83	300 / 63	680 / 220	78

Input Specification

Parameters	Conditions	Typical	Maximum	Units
Input voltage		18 - 75	80	VDC
Input reflected ripple current	Nominal input	30		mA
Absolute maximum rating	1s		100	VDC
Filter	Capacitance Filter			
Start-up voltage			18	VDC
Start-up time	Nominal input	10		ms
Under voltage lock out		15		VDC

Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested isolation voltage	Input / output 60 sec, ≤ 1mA	3000		VDC
	Output / output 60 sec, ≤ 1mA	1500		
Resistance	500VDC	≥1000		MΩ
Capacitance	100kHz/ 0.1V	1000		pF

Output Specification

Parameters	Conditions	Typical	Maximum	Units	
Voltage accuracy	10% -100% balanced load	Output 1	±1	±3	%
		Output 2	±3	±5	
	5% -10% balanced load	Output 1	±2	±4	
		Output 2	±4	±6	
Line regulation	LL – HL 100% load	Output 1	±0.2	±0.5	%
		Output 2	±0.5	±1	
Load regulation	10% - 100% load	Output 1	±0.5	±1	%
		Output 2	±1	±2	
	0% - 100% load		±5		
Cross regulation	Output 1 at 50% load, Output 2 at 25% - 100% load		±8	%	
Short circuit protection *	Continues, Auto recovery				
Over current protection	Dual output under balanced load	≥110	250	% Io	
Transient Recovery Time	Nominal input, Output 1 25% load step change	300	500	μs	
Transient Response Deviation	Nominal input, Output 1 25% load step change	±5	±8	%	
Ripple & Noise	20MHz bandwidth	Output 1	70	150	mV pk-pk
		Output 2	100	150	

*Both outputs enter hiccup protection if short circuit presents on any of the outputs. When short circuit presents on output 2, output 1 loading must be within 10 - 100% in order to enter hiccup protection.

General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency*	100% Load	300		KHz
Operating temperature	With derating	-40 to +85		°C
Storage temperature		-55 to +125		°C
Soldering temperature	1.5mm distance ≤ 10s		300	°C
Temperature coefficient	100% Load		± 0.03	%/°C
Cooling	Free air convection			
Humidity	Non-condensing		95	% RH
Base material	Black Plastic (UL94 V-0)			
Weight		5.4		g
Dimensions (L x W x H)	1.08 x 0.37 x 0.47 inches (27.40 × 9.50 × 12.00 mm)			
Vibration	10 – 150Hz, 5G, 0.75mm along all axels			
MTBF	> 1 000 000 hrs (MIL-HDBK -217F, t=+25°C)			

*Switching frequency reduces when load under 50%.

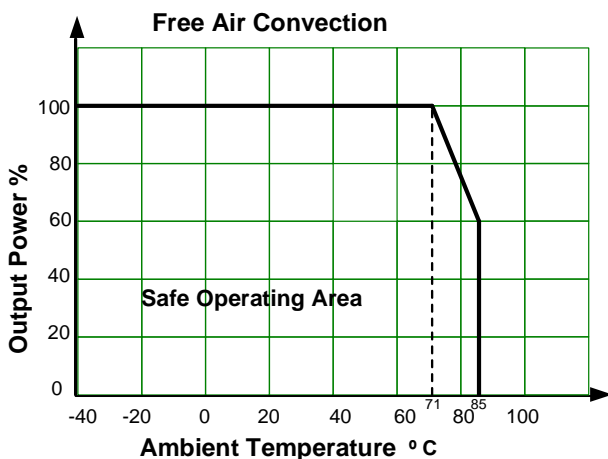
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications

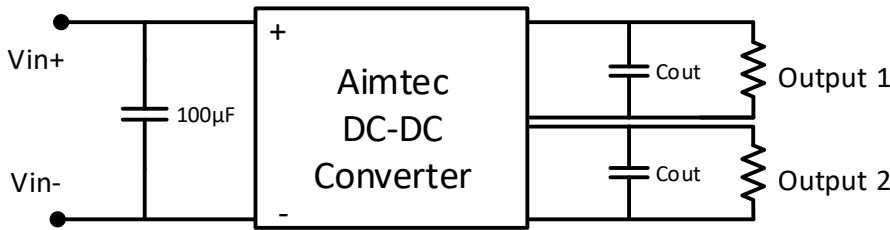
Parameters

Standards	Design to meet EN62368	
	EMI - Conducted and radiated emission	CISPR32/EN55032 Class B with recommended EMC circuit A
	Electrostatic Discharge Immunity	IEC/EN 61000-4-2, Contact ±4KV, Criteria B
	RF, Electromagnetic Field Immunity	IEC/EN 61000-4-3, 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC/EN 61000-4-4, ±2KV with recommended EMC circuit B, Criteria B
	Surge Immunity	IEC/EN 61000-4-5, L-L ±2KV with recommended EMC circuit B, Criteria B
	RF, Conducted Disturbance Immunity	IEC/EN 61000-4-6, 3Vr.m.s, Criteria A

Derating

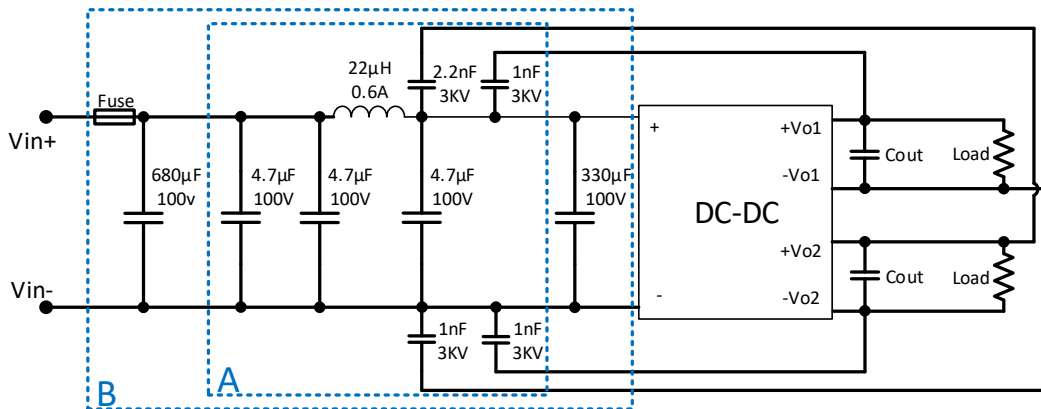


Typical Application Circuit



Output voltage	Cout
5 VDC	47 µF
12 / 24 VDC	22 µF

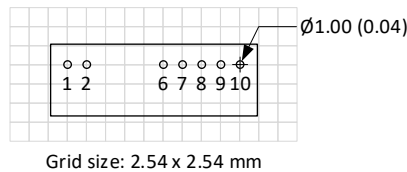
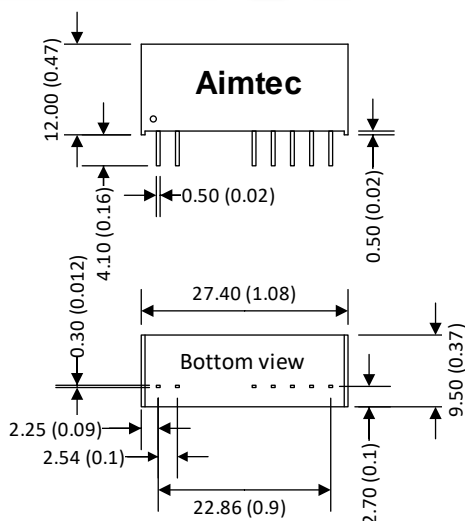
EMI Application Circuit



Part A for EMI CISPR32/EN55032 Class B compliance.

Part B for EFT immunity IEC/EN 61000-4-4 and surge immunity IEC/EN 61000-4-5 compliance.

Dimensions



Pin Out Specifications	
Pin	Single
1	-V Input
2	+V Input
6	+V Output 1
7	-V Output 1
8	CS
9	-V Output 2
10	+V Output 2

Note:
 Unit: mm (inch)
 General tolerance: $\pm 0.1 (0.004)$
 Pin tolerance: $\pm 0.5 (0.02)$

NOTE: 1. Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Aimtec; refer to www.aimtec.com for the most current product specifications. 2. Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured. 3. Mechanical drawings and specifications are for reference only. 4. All specifications are measured at an ambient temperature of 25°C, humidity < 75%, nominal input voltage and at rated output load unless otherwise specified. 5. Aimtec may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release. 6. This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other than the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.