

**FEATURES:**

- Unregulated
- High efficiency up to 86%
- 7 pin SIP package
- Operating temperature -40°C to + 105°C
- Continuous short circuit protection ‡
- Pin compatible with multiple manufacturers
- 1500 & 3000VDC Isolation



### Models

#### Single output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Max Cap Load (µF)	Efficiency (%)
AM2DS-0503S-NZ	4.5-5.5	3.3	400	1500	220	84
AM2DS-0505S-NZ	4.5-5.5	5	400	1500	220	84
AM2DS-0509S-NZ	4.5-5.5	9	222	1500	220	86
AM2DS-0512S-NZ	4.5-5.5	12	167	1500	220	84
AM2DS-0515S-NZ	4.5-5.5	15	133	1500	220	84
AM2DS-0524S-NZ ‡	4.5-5.5	24	83	1500	220	84
AM2DS-1203S-NZ	10.8-13.2	3.3	400	1500	220	80
AM2DS-1205S-NZ	10.8-13.2	5	400	1500	220	80
AM2DS-1209S-NZ	10.8-13.2	9	222	1500	220	86
AM2DS-1212S-NZ	10.8-13.2	12	167	1500	220	84
AM2DS-1215S-NZ	10.8-13.2	15	133	1500	220	84
AM2DS-1224S-NZ ‡	10.8-13.2	24	83	1500	220	83
AM2DS-2403S-NZ ‡	21.6-26.4	3.3	400	1500	220	80
AM2DS-2405S-NZ ‡	21.6-26.4	5	400	1500	220	84
AM2DS-2412S-NZ ‡	21.6-26.4	12	167	1500	220	86
AM2DS-2415S-NZ ‡	21.6-26.4	15	133	1500	220	84
AM2DS-2424S-NZ ‡	21.6-26.4	24	83	1500	220	85
AM2DS-0505SH30-NZ	4.5-5.5	5	400	3000	220	80
AM2DS-0512SH30-NZ	4.5-5.5	12	167	3000	220	84
AM2DS-0515SH30-NZ	4.5-5.5	15	133	3000	220	84
AM2DS-0524SH30-NZ ‡	4.5-5.5	24	83	3000	220	84
AM2DS-1205SH30-NZ	10.8-13.2	5	400	3000	220	80
AM2DS-1212SH30-NZ	10.8-13.2	12	167	3000	220	84
AM2DS-1215SH30-NZ	10.8-13.2	15	133	3000	220	84
AM2DS-2405SH30-NZ ‡	21.6-26.4	5	400	3000	220	80
AM2DS-2409SH30-NZ ‡	21.6-26.4	9	222	3000	220	86
AM2DS-2412SH30-NZ ‡	21.6-26.4	12	167	3000	220	86
AM2DS-2415SH30-NZ ‡	21.6-26.4	15	133	3000	220	84
AM2DS-2424SH30-NZ ‡	21.6-26.4	24	83	3000	220	85

‡ Please note Aimtec product change announcement located here [www.aimtec.com/news](http://www.aimtec.com/news) for product specification changes effective February 7<sup>th</sup> 2015.

### Models

#### Dual output

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Max Cap Load (µF)	Efficiency (%)
AM2DS-0505D-NZ	4.5-5.5	±5	±200	1500	100	80
AM2DS-0509D-NZ	4.5-5.5	±9	±111	1500	100	82
AM2DS-0512D-NZ	4.5-5.5	±12	±83	1500	100	84
AM2DS-0515D-NZ	4.5-5.5	±15	±67	1500	100	84
AM2DS-0524D-NZ ‡	4.5-5.5	±24	±42	1500	100	84
AM2DS-1205D-NZ	10.8-13.2	±5	±200	1500	100	84
AM2DS-1209D-NZ	10.8-13.2	±9	±111	1500	100	84
AM2DS-1212D-NZ	10.8-13.2	±12	±83	1500	100	85

## Models

### Dual output (continued)

Model	Input Voltage (V)	Output Voltage (V)	Output Current max (mA)	Isolation (VDC)	Max Cap Load (μF)	Efficiency (%)
AM2DS-1215D-NZ	10.8-13.2	±15	±67	1500	100	84
AM2DS-1515D-NZ	13.5-16.5	±15	±67	1500	100	85
AM2DS-2405D-NZ ‡	21.6-26.4	±5	±200	1500	100	84
AM2DS-2409D-NZ ‡	21.6-26.4	±9	±111	1500	100	84
AM2DS-2412D-NZ ‡	21.6-26.4	±12	±83	1500	100	84
AM2DS-2415D-NZ ‡	21.6-26.4	±15	±67	1500	100	84
AM2DS-0505DH30-NZ	4.5-5.5	±5	±200	3000	100	80
AM2DS-0509DH30-NZ	4.5-5.5	±9	±111	3000	100	82
AM2DS-0512DH30-NZ	4.5-5.5	±12	±83	3000	100	84
AM2DS-0515DH30-NZ	4.5-5.5	±15	±67	3000	100	84
AM2DS-0524DH30-NZ ‡	4.5-5.5	±24	±42	3000	100	84
AM2DS-1205DH30-NZ	10.8-13.2	±5	±200	3000	100	84
AM2DS-1209DH30-NZ	10.8-13.2	±9	±111	3000	100	84
AM2DS-1212DH30-NZ	10.8-13.2	±12	±83	3000	100	85
AM2DS-1215DH30-NZ	10.8-13.2	±15	±67	3000	100	84
AM2DS-2405DH30-NZ ‡	21.6-26.4	±5	±200	3000	100	84
AM2DS-2409DH30-NZ ‡	21.6-26.4	±9	±111	3000	100	84
AM2DS-2412DH30-NZ ‡	21.6-26.4	±12	±83	3000	100	84
AM2DS-2415DH30-NZ ‡	21.6-26.4	±15	±67	3000	100	84

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.

## Input Specifications

Parameters	Nominal	Typical	Maximum	Units
Voltage range	5	4.5-5.5		VDC
	12	10.8-13.2		
	15	13.5-16.5		
	24	21.6-26.4		
Filter	Capacitor			
Absolute Maximum Rating (1 sec. max.)	5		9	VDC
	12		18	
	15		21	
	24		30	
Reflected Ripple Input Current			15	mA

## Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec		1500, 3000	VDC
Resistance	500VDC	> 1000		MOhm
Capacitance	(100Khz/0.1V)	20		pF

## Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	(see tolerance chart)	±5		%
Short Circuit protection		Continuous ‡		
Short circuit restart		Auto recovery		
Line voltage regulation	For ±1.0% change of Vin	3.3V models ±1.5 Others ±1.2		% of Vin
Load voltage regulation	load 10~100%	12		%
Temperature coefficient		±0.03		%/°C
Ripple & Noise	20MHz Bandwidth	75		mV p-p

### General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	100 - 300		KHz
Operating temperature	Derating Above 85°C	-40 to +105		°C
Storage temperature		-55 to +125		°C
Humidity			95	% RH
Case material	Non-conductive black plastic (UL94V-0 rated)			
Weight		2.4		g
Dimensions (L x W x H)		0.77 x 0.27 x 0.39inches	19.6 x 7.00 x 10.00mm	
MTBF		>3,500,000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C)		
Maximum soldering temperature	1.5 mm from case for 10sec		300	°C
Maximum case temperature			125	°C
Cooling	Free air convection			

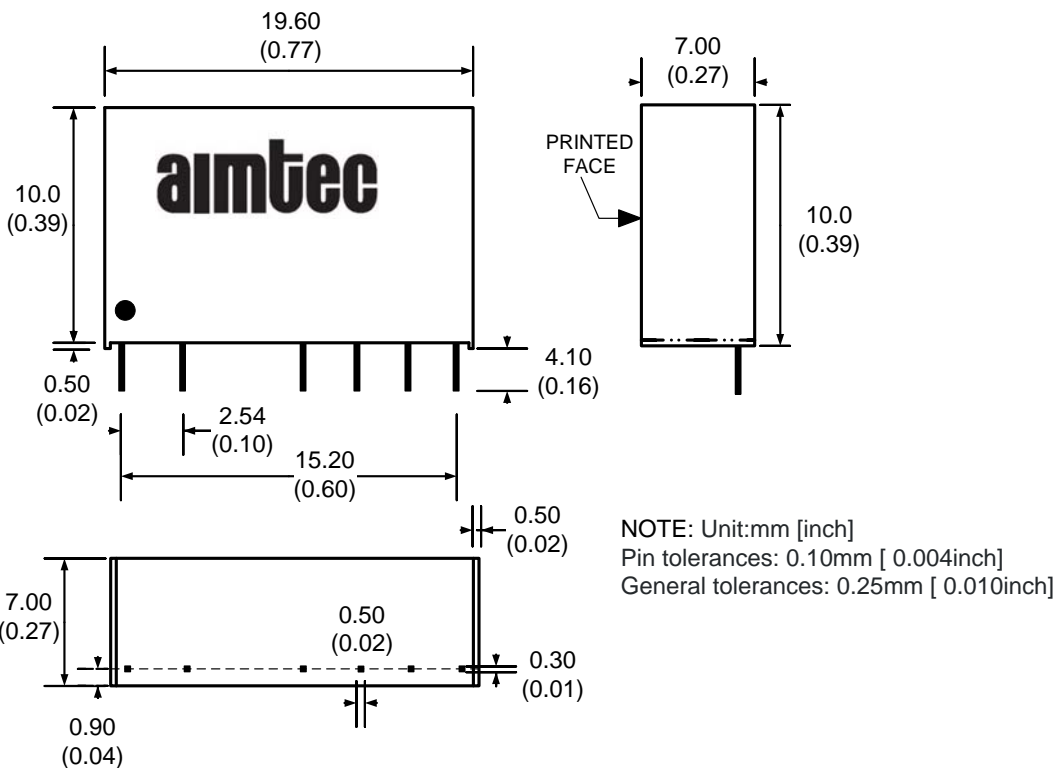
### Safety Specifications

Parameters	
Agency approvals	cULus (without 15V input and without 3.3V output models)
Standards	UL 60950-1

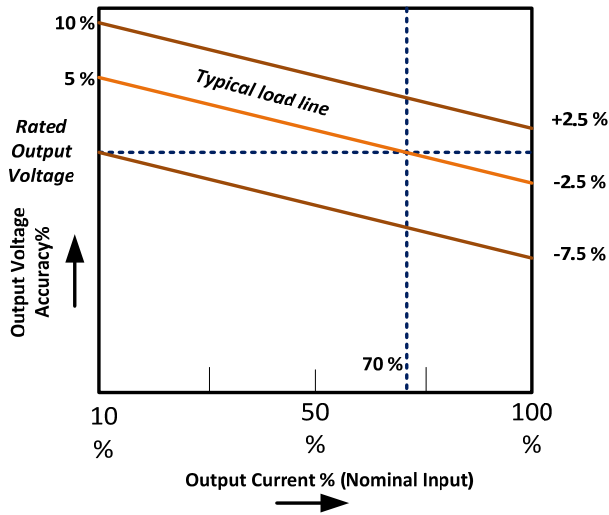
### Pin Out Specifications

Pin	1500 VDC		3000VDC	
	Single	Dual	Single	Dual
1	+ V Input	+ V Input	+ V Input	+ V Input
2	- V Input	- V Input	- V Input	- V Input
4	- V Output	- V Output	No pin	No pin
5	No pin	Common	- V Output	- V Output
6	+ V Output	+ V Output	No pin	Common
7	No pin	No pin	+ V Output	+ V Output

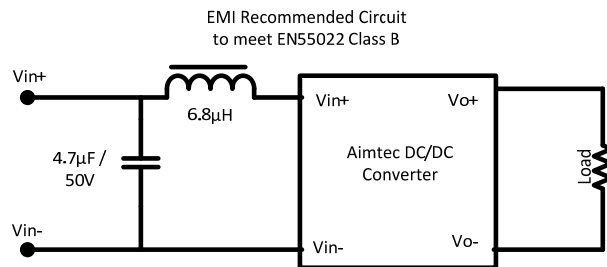
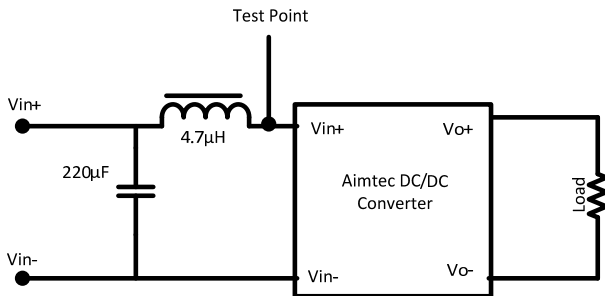
### Dimensions



### Typical characteristics



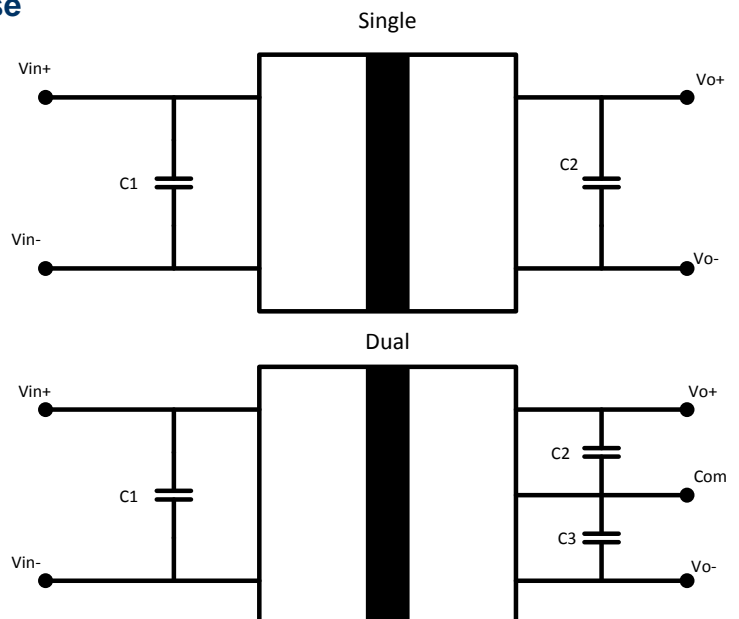
### Test Circuit Input Reflected Ripple Current & EMI Recommended Circuit



### Recommended Circuits to Lower Ripple & Noise

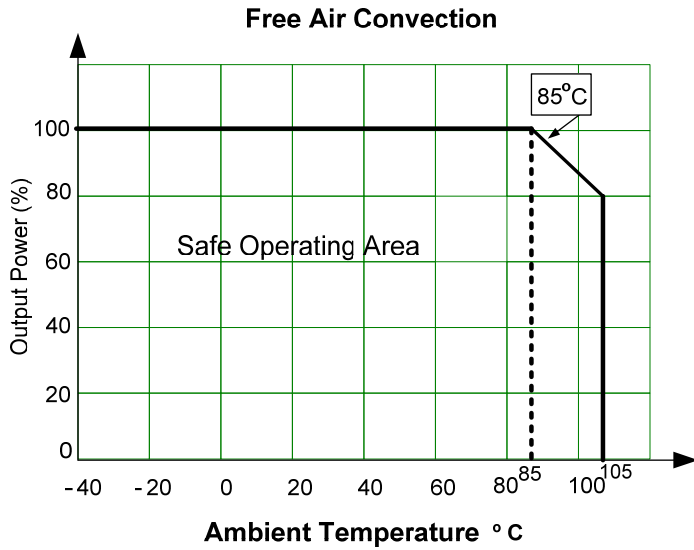
Capacitor selection Table

Vin	C1	Single VDC	C2	Dual VDC	C2/C3
5	4.7 µF	3.3 / 5V	10µF	±3.3 / ±5V	4.7 µF
12	2.2µF	12 V	2.2µF	±12 V	1 µF
15	2.2µF	15 V	1µF	±15 V	0.47 µF
24	1µF	24 V	1 µF	±24 V	0.47 µF



- 1) Ensure output load of Min 10%, or specifications may not be met
- 2) Under normal operation, there is no protection for overload condition
- 3) Converter may exhibit start up delay if capacitive load exceeds recommended
- 4) Ceramic or electrolytic type capacitors are recommended, tantalum type may damage converter
- 5) Parallel connections, or hot swapping is not recommended

**Derating**



**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](http://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](http://www.aimtec.com).