

Click to
ORDER
samples

AM2LO-Z



Open Frame

The AM2LO-Z is a brand-new SMD DC/DC converter that offers great cost savings thanks to an improved manufacturing process. It also features excellent reliability and performance, offering a standard input voltage range of 3.3 & 5VDC as well as an output voltage range from 3.3-5V, ± 3.3 & ± 5 V. This low height profile and open frame design will surely benefit your new system design.

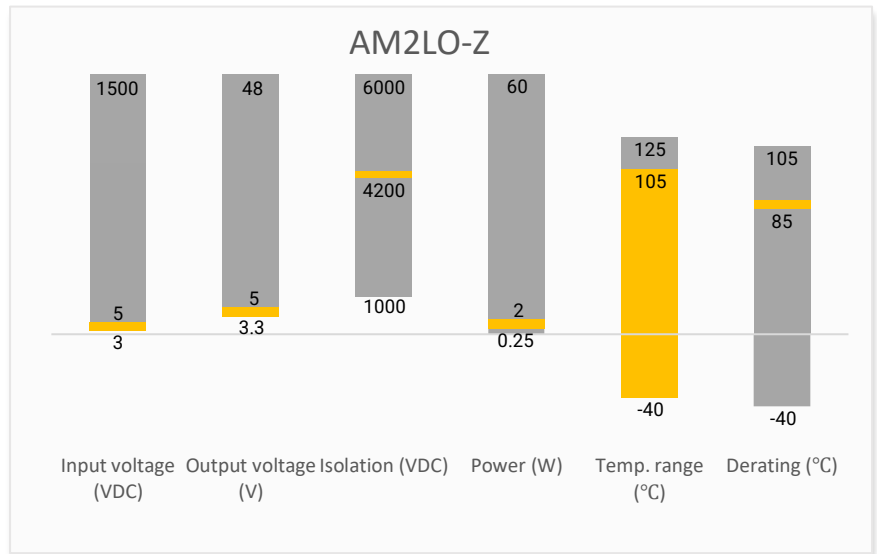
This new series offers great operating temperatures, from -40 to 105°C with full power up to 85°C. Also, an isolation of 4200VDC for improved reliability and system safety as well as a great 6 500,000h MTBF come standard.

The AM2LO-Z is perfect for instrumentation, industrial controls, communication and IoT applications.

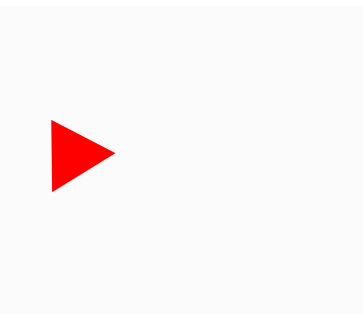
Features

- Operating Temp: -40 °C to +105 °C
- High isolation voltage: 4200VDC
- Low ripple & noise, 150mV(p-p), typ.
- Unregulated Output
- SMD type package

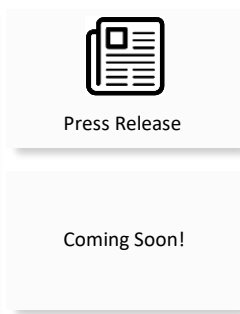
Summary



Training



Product Training Video
(click to open)



Application Notes

Applications



IoT



Industrial



Portable Equipment



Telecommunication

Models & Specifications

Single Output

Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current Max (mA)		Output Current Max (mA)	Maximum Capacitive Load (μ F)	Efficiency (%) Full Load
			No Load	Full Load			
AM2LO-0303SH42Z	3.3 (2.97 ~ 3.63)	3.3	60	650	500	470	77
AM2LO-0305SH42Z	3.3 (2.97 ~ 3.63)	5	60	777	400	470	78
AM2LO-0503SH42Z	5 (4.5 ~ 5.5)	3.3	45	446	500	470	76
AM2LO-0505SH42Z	5 (4.5 ~ 5.5)	5	45	513	400	470	78

Note: Use suffix "TR" for tape & reel packing (ex. AM2LO-0303SH42ZTR).

Dual Output

Model	Input Voltage (VDC)	Output Voltage (VDC)	Input Current Max (mA)		Output Current Max (mA)	Maximum Capacitive Load (μ F)	Efficiency (%) Full Load
			No Load	Full Load			
AM2LO-0303DH42Z	3.3 (2.97 ~ 3.63)	\pm 3.3	60	798	\pm 303	\pm 220	78
AM2LO-0305DH42Z	3.3 (2.97 ~ 3.63)	\pm 5	60	758	\pm 200	\pm 220	80
AM2LO-0503DH42Z	5 (4.5 ~ 5.5)	\pm 3.3	45	541	\pm 303	\pm 220	76
AM2LO-0505DH42Z	5 (4.5 ~ 5.5)	\pm 5	45	494	\pm 200	\pm 220	81

Note: Use suffix "TR" for tape & reel packing (ex. AM2LO-0303DH42ZTR).

Input Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage range	See models table		\pm 10	%
Filter	Capacitance Filter			
Absolute maximum rating	1000ms	3.3VDC input models	5	VDC
		5VDC input models	9	VDC
Start up time		20		ms
Input reflected ripple current		20		mA pk-pk

Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested I/O voltage	60 sec	4200		VDC
Resistance		\geq 1000		M Ω
Capacitance		25		pF

Output Specification

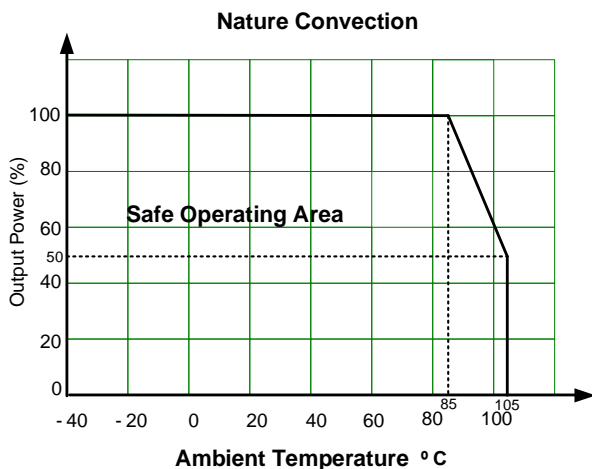
Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	See tolerance envelope curve			%
Line regulation	Per 1% Vin change		\pm 1.2	%
Load regulation	10 ~ 100% load	3.3Vdc output models	\pm 15	%
		5Vdc output models	\pm 14	%

Short circuit protection	Momentary, Auto recovery, 0.5sec, max			
Temperature coefficient	Full load		± 0.03	%/°C
Ripple & Noise*	20MHz bandwidth	Single output models	150	mV pk-pk
		Dual output models	± 150	
* Ripple and Noise are measured at 20MHz bandwidth by using a 0.1µF (M/C) and 10µF (E/C) parallel capacitor and typical input with full load				

General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Switching frequency	100% load	40 ~ 80		KHz
Operating temperature	See derating graph	-40 to +105		°C
Storage temperature		-55 to +125		°C
Maximum case temperature			95	°C
Reflow temperature	10 sec.		245	°C
Lead-free reflow solder process	IPC/JEDEC J-STD-020D.1			
Cooling	Nature Convection (30~65 LFM)			
Humidity	Non-condensing		95	% RH
Moisture sensitivity level (MSL)	IPC/JEDEC J-STD-020D.1	Level 1		
Base material	Non-Conductive Black Plastic (UL94V-0)			
Weight	Single output models / Dual output models	1.52 / 1.80		g
Dimensions (L x W x H)	Single output models	0.50 x 0.44 x 0.27 inches, 12.70 x 11.80 x 3.60mm		
	Dual output models	0.60 x 0.44 x 0.27 inches, 15.20 x 11.80 x 3.60mm		
MTBF	> 6 500 000 hrs (MIL-HDBK -217F, t _a =+25°C) / Full Load			

Safety Specifications		
Parameters		
Standards	Design to meet IEC/EN 60950-1,62368-1	
	EMI - Conducted and radiated emission	EN55032 , CLASS B with recommended circuit
	Electrostatic Discharge Immunity	IEC 61000-4-2 , Criteria A
	RF, Electromagnetic Field Immunity	IEC 61000-4-3 , Criteria A
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4 , Criteria A with recommended circuit
	Surge Immunity	IEC 61000-4-5 , Criteria A with recommended circuit
	RF, Conducted Disturbance Immunity	IEC 61000-4-6 , Criteria A
	PFMF	IEC 61000-4-8 , Criteria A

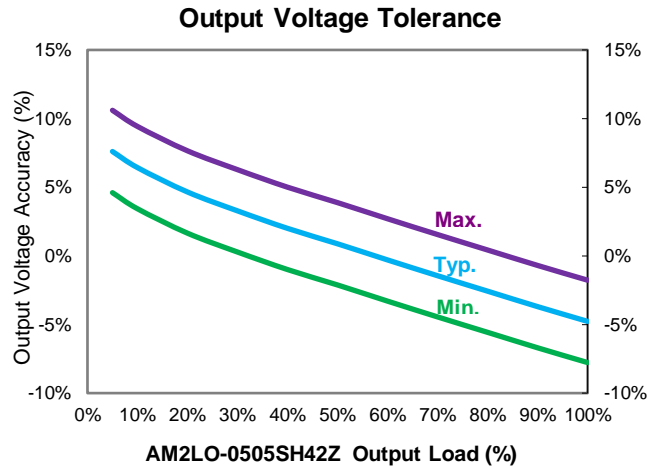
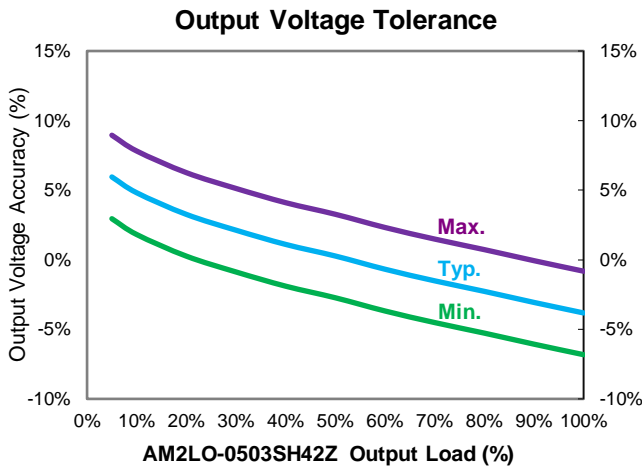
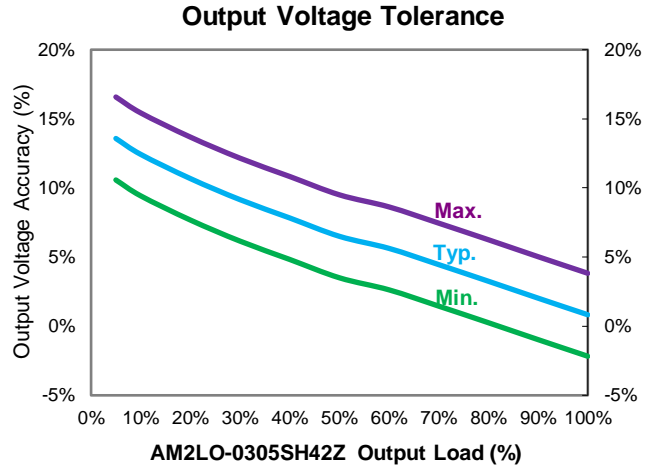
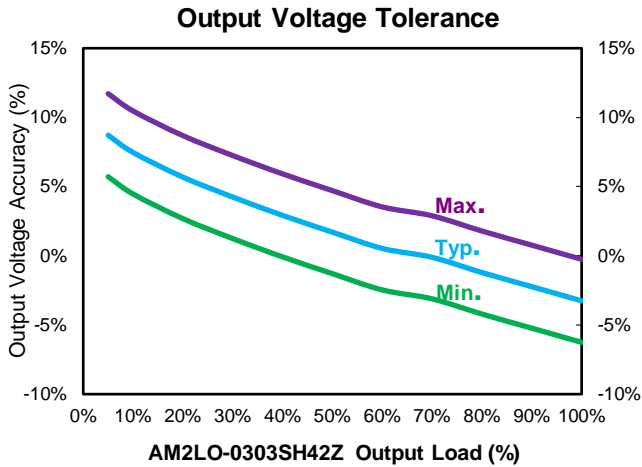
Derating



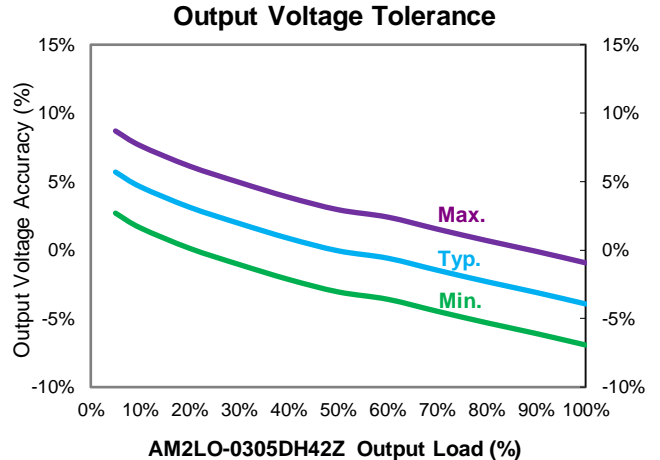
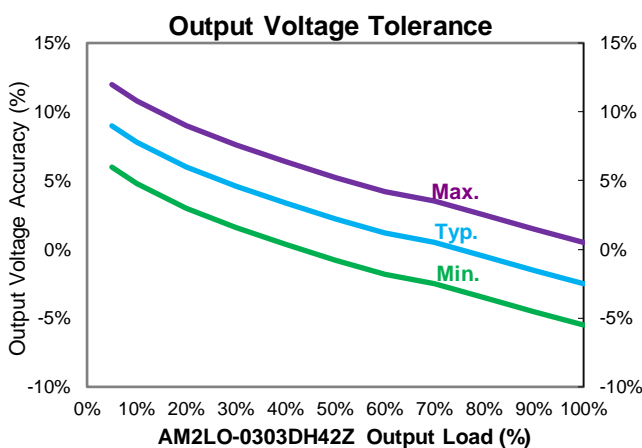
Output voltage tolerance

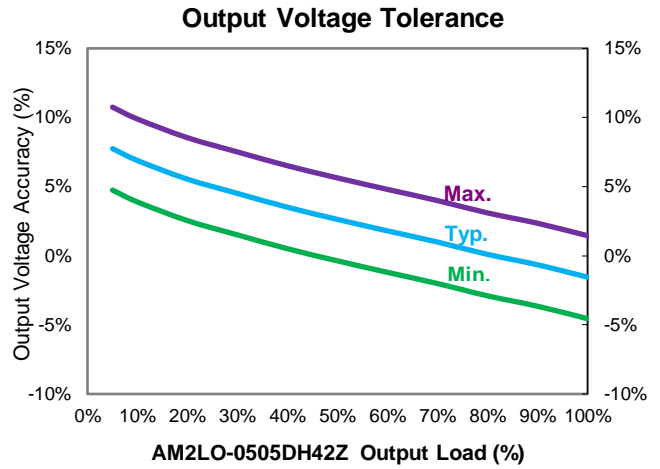
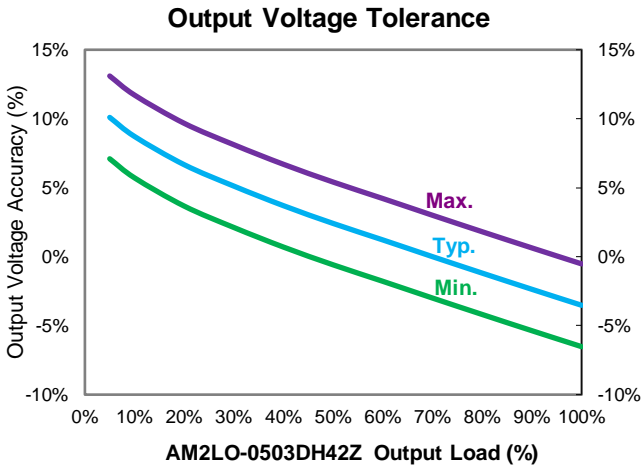


Single output models



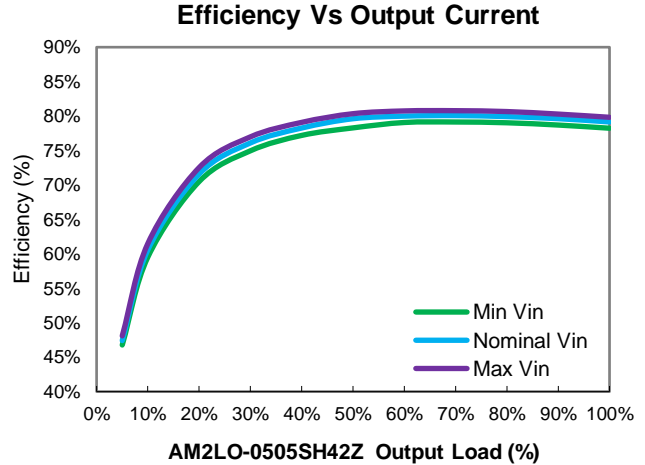
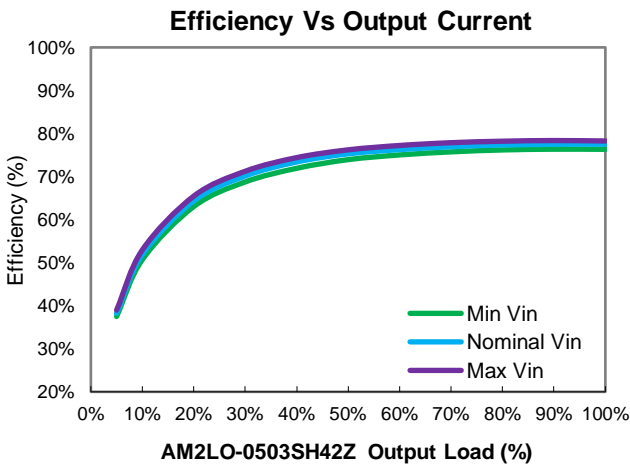
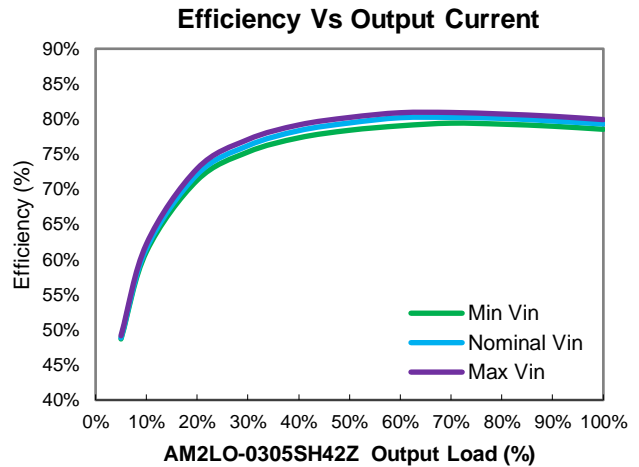
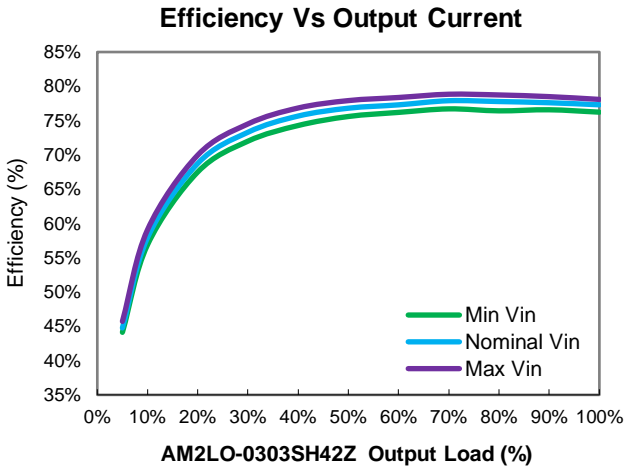
Dual output models





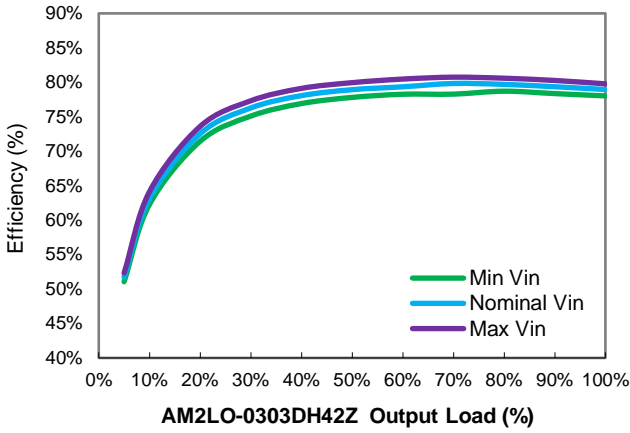
Efficiency Vs Output Current

Single output models

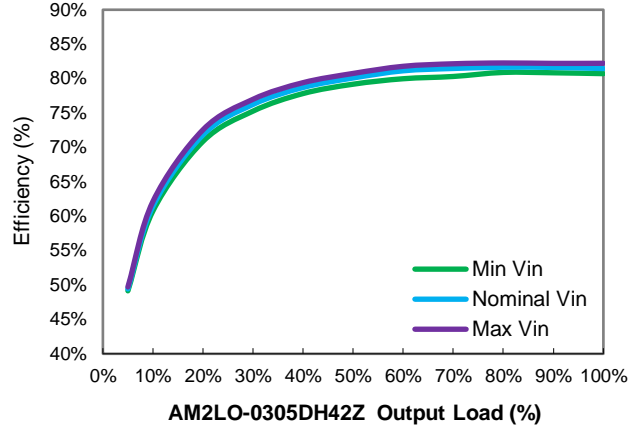


Dual output models

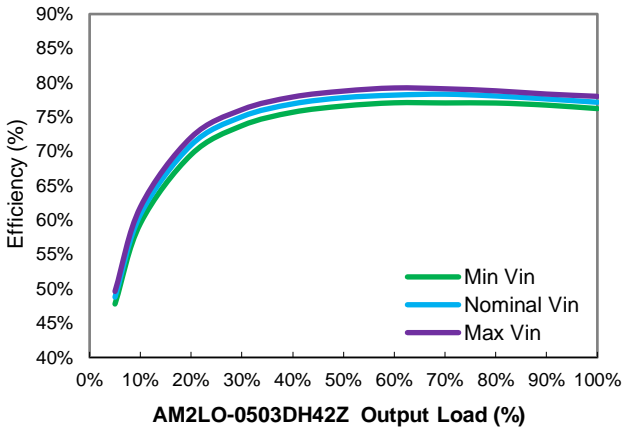
Efficiency Vs Output Current



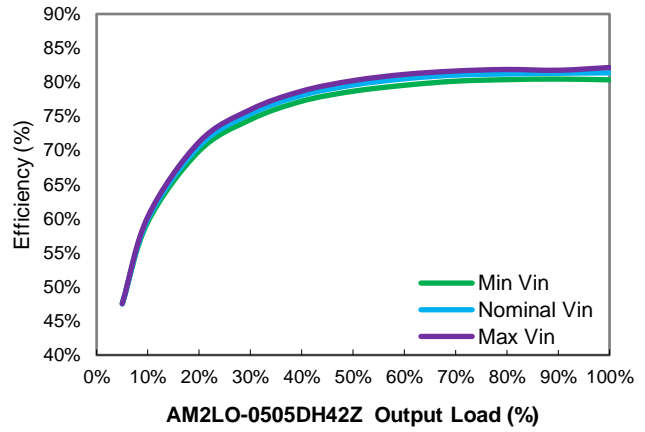
Efficiency Vs Output Current



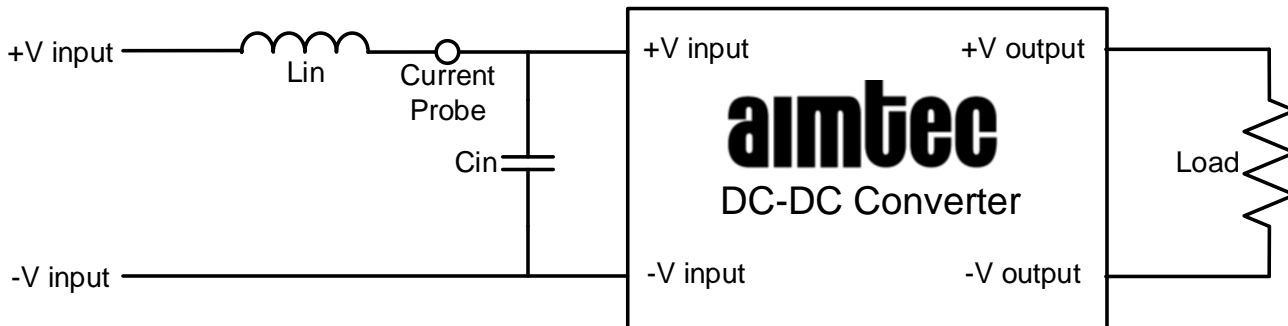
Efficiency Vs Output Current



Efficiency Vs Output Current

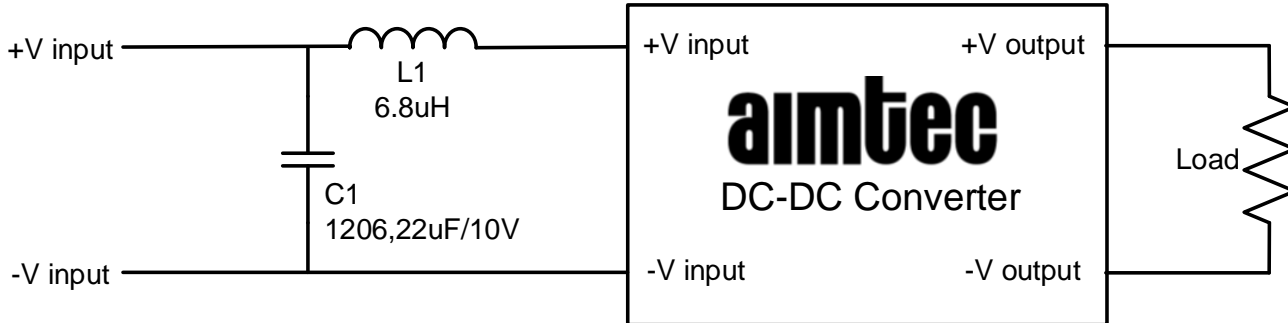


Input Reflected Ripple Current

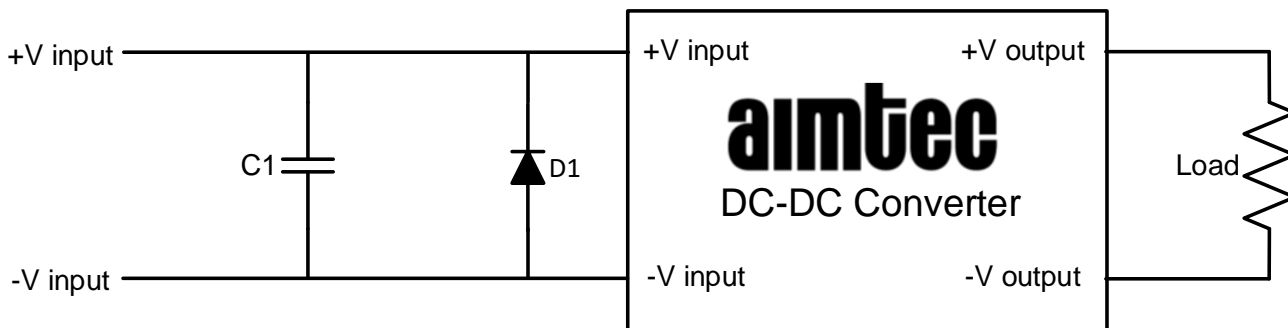


Lin : 12uH / Cin : 47uF, ESR < 1.0Ω at 100KHz

EMI Application Circuit



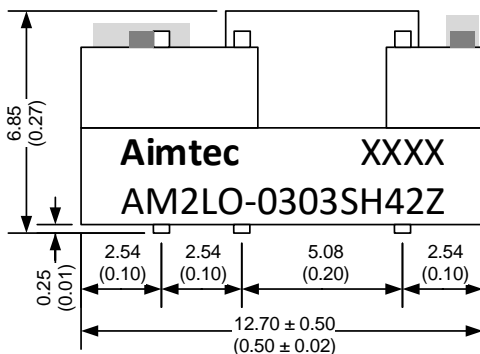
EFT & Surge Application Circuit



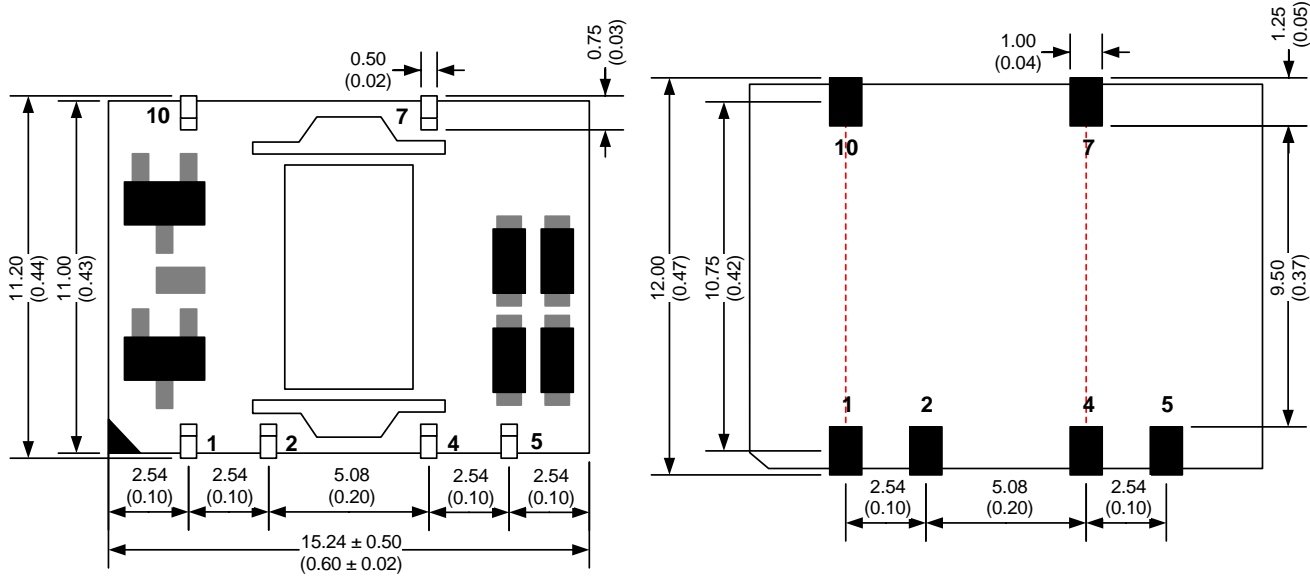
Model	C1	D1
AM2LO-03XXXH42Z	220uF, 35V	SMDJ 6.0A
AM2LO-05XXXH42Z	330uF, 50V	SMDJ 9.0A

Dimensions

Single output models



Pin Out Specifications	
Pin	Single
1	-V Input
2	+V Input
4	-V Output
5	+V Output
8	N.C



Notes:
All dimensions are typical in millimeters (inches).
Stand-off tolerance ± 0.25 (± 0.01)

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.