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AM6CW-EZ



1 x 1

The AM6CW-EZ is a 6W DC/DC converter that offers a regulated output which contributes to a more stable and reliable output performance. It features a wide 4:1 input voltage range of 9-75VDC, which will benefit your new system design.

This series offers great operating temperatures, from -40°C to 85°C. Furthermore, an isolation of 1500VDC to 3000VDC, a high MTBF of 1,500,000h, continuous output short circuit protection (OSCP), over-current protection (OCP), over-voltage protection (OVP), and under voltage lock-out (UVLO) come standard with the series.

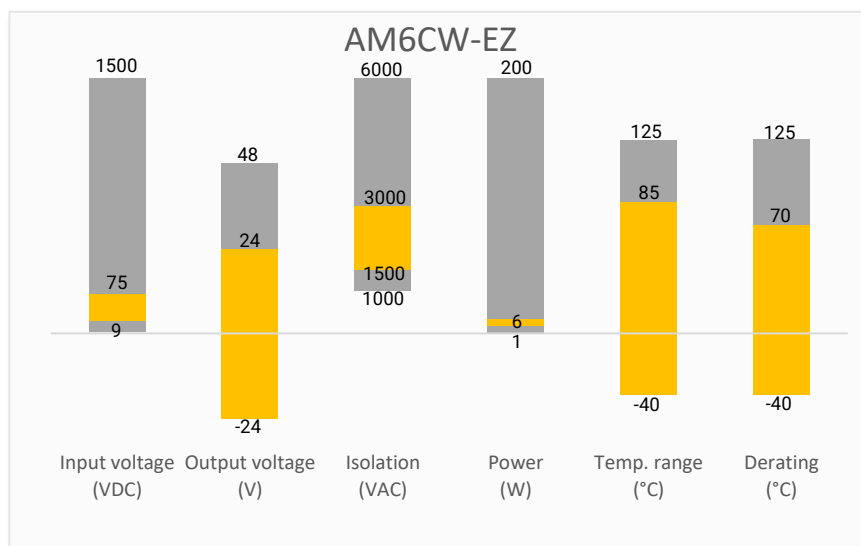
The AM6CW-EZ is suitable for grid power, instrumentation, industrial controls, communication, and civil applications.

Features

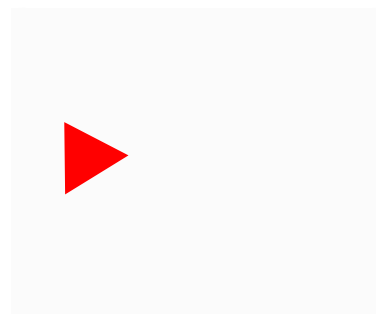
- Operating Temp: -40 °C to +85 °C
- Isolation voltage: 1500VDC & 3000VDC
- High efficiency: Up to 88% typ.
- Regulated single output
- Output short circuit, over-current, over-voltage, input under voltage protection
- Standard 1 x1 package
- Made in Taiwan



Summary



Training



Product Training Video
(click to open)



Press Release

Coming Soon!

Application Notes

Applications



Power Grid



Industrial



Telecom



Instrumentation

Models & Specifications

Single Output

Model	Input Voltage (VDC)	Output Voltage (VDC)	Nominal Vin Input Current Max (mA)		Output Current Max (mA)	Maximum Capacitive Load (μF)	Efficiency Full Load Typ (%)
			No Load	Full Load			
AM6CW-2403SEZ	9-36	3.3	5	268	1500	1800	77
AM6CW-2405SEZ	9-36	5	5	305	1200	1000	82
AM6CW-2409SEZ	9-36	9	5	298	667	680	84
AM6CW-2412SEZ	9-36	12	5	294	500	470	85
AM6CW-2415SEZ	9-36	15	5	291	400	220	86
AM6CW-2424SEZ	9-36	24	5	291	250	100	86
AM6CW-4803SEZ	18-75	3.3	5	131	1500	1800	79
AM6CW-4805SEZ	18-75	5	5	150	1200	1000	82
AM6CW-4812SEZ	18-75	12	5	144	500	470	87
AM6CW-4815SEZ	18-75	15	5	142	400	220	88
AM6CW-4824SEZ	18-75	24	5	144	250	100	87
AM6CW-2403SH30EZ	9-36	3.3	5	268	1500	1800	77
AM6CW-2405SH30EZ	9-36	5	5	305	1200	1000	82
AM6CW-2409SH30EZ	9-36	9	5	298	667	680	84
AM6CW-2412SH30EZ	9-36	12	5	294	500	470	85
AM6CW-2415SH30EZ	9-36	15	5	291	400	220	86
AM6CW-2424SH30EZ	9-36	24	5	291	250	100	86
AM6CW-4803SH30EZ	18-75	3.3	5	131	1500	1800	79
AM6CW-4805SH30EZ	18-75	5	5	150	1200	1000	82
AM6CW-4812SH30EZ	18-75	12	5	144	500	470	87
AM6CW-4815SH30EZ	18-75	15	5	142	400	220	88
AM6CW-4824SH30EZ	18-75	24	5	144	250	100	87

Dual Output

Model	Input Voltage (VDC)	Output Voltage (VDC)	Nominal Vin Input Current Max (mA)		Output Current Max (mA)	Maximum Capacitive Load (μF)	Efficiency Full Load Typ (%)
			No Load	Full Load			
AM6CW-2405DEZ	9-36	±5	5	305	±600	470	82
AM6CW-2412DEZ	9-36	±12	5	294	±250	220	85
AM6CW-2415DEZ	9-36	±15	5	291	±200	100	86
AM6CW-2424DEZ	9-36	±24	5	291	±125	100	86
AM6CW-4805DEZ	18-75	±5	5	150	±600	470	82
AM6CW-4812DEZ	18-75	±12	5	144	±250	220	87
AM6CW-4815DEZ	18-75	±15	5	142	±200	100	88
AM6CW-2405DH30EZ	9-36	±5	5	305	±600	470	82
AM6CW-2412DH30EZ	9-36	±12	5	294	±250	220	85
AM6CW-2415DH30EZ	9-36	±15	5	291	±200	100	86
AM6CW-2424DH30EZ	9-36	±24	5	291	±125	100	86
AM6CW-4805DH30EZ	18-75	±5	5	150	±600	470	82
AM6CW-4812DH30EZ	18-75	±12	5	144	±250	220	87
AM6CW-4815DH30EZ	18-75	±15	5	142	±200	100	88

Input Specification

Parameters	Conditions	Minimum	Typical	Maximum	Units
Voltage Types				4:1	
Surge Voltage	24VDC (1 sec. max.)			50	V
	48VDC (1 sec. max.)			100	V
Start-up voltage	24VDC			9	V
	48VDC			18	V
Input Under-voltage protection	24VDC		7		V
	48VDC		15		V
Input filter	Pi filter				

Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested isolation voltage	Input / output, 60 sec, $\leq 1\text{mA}$	≥ 1500		VDC
	Input / output, 60 sec, $\leq 1\text{mA}$, H30 models	≥ 3000		VDC
Resistance	Input / output, 500VDC	≥ 1000		M Ω
Capacitance	Input / output, 100KHz / 0.1V	1000		pF

Output Specification

Parameters	Conditions	Minimum	Typical	Maximum	Units
Voltage Tolerance			± 1	± 3	%
Line regulation				± 0.5	%
Load regulation	Single (F.L To 10% Load)			± 0.8	%
	Dual (F.L To 10% Load)			± 1.0	%
Transient Recovery Time	50% load step change			350	μs
Ripple & Noise*				85	mV pk-pk

* Ripple and Noise are measured at 20MHz bandwidth. Please refer to the application note for specific details.

General Specifications

Parameters	Conditions	Minimum	Typical	Maximum	Units
Switching frequency*			330		KHz
Over Current protection	Input voltage range	110	140	210	%Io
Over voltage protection	Input voltage range	110		160	%Vo
Short Circuit Protection	Continuous, Auto recovery				
Operating temperature	With derating	-40		85	$^{\circ}\text{C}$
Storage temperature		-55		125	$^{\circ}\text{C}$
Cooling	Free air convection				
Humidity	Non-condensing			95	% RH
Temperature Coefficient	100% Load			± 0.03	%/ $^{\circ}\text{C}$
Maximum soldering temperature	1.5mm from case for 10 sec			+300	$^{\circ}\text{C}$
Case material	Nickel coated copper with non-conductive base				
Weight			15.0		g
Dimensions (L x W x H)	1.00x 1.00 x 0.42 inches (25.40 x 25.40 x 10.60 mm)				
MTBF		$\geq 1\,500\,000$ hrs (MIL-HDBK -217F, $t=+25^{\circ}\text{C}$)			

*Switching frequency reduced when load < 50%.

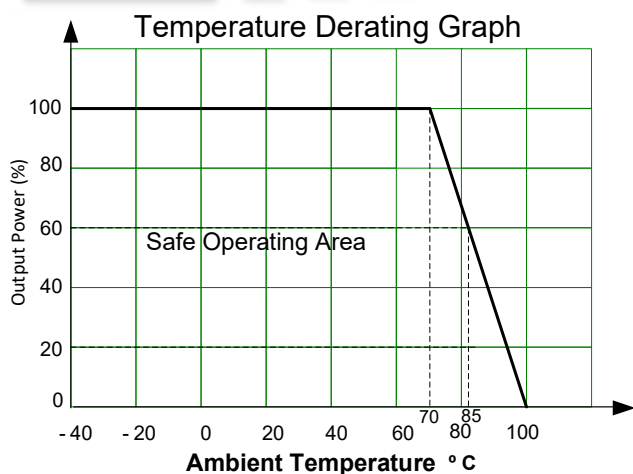
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C , humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications

Parameters

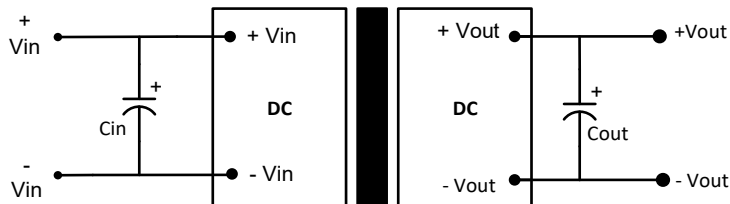
Standards	EMI - Conducted and radiated emission	CISPR32 / EN55032, CLASS B
	Electrostatic Discharge Immunity	IEC/EN61000-4-2 Air $\pm 8\text{kV}$, Contact $\pm 6\text{kV}$ perf. Criteria B
	RF, Electromagnetic Field Immunity	IEC/EN 61000-4-3 10V/m
	Electrical Fast Transient/Burst Immunity	IEC/EN 61000-4-4 $\pm 2\text{kV}$
	Surge Immunity	IEC/EN 61000-4-5 $\pm 2\text{kV}$

Derating



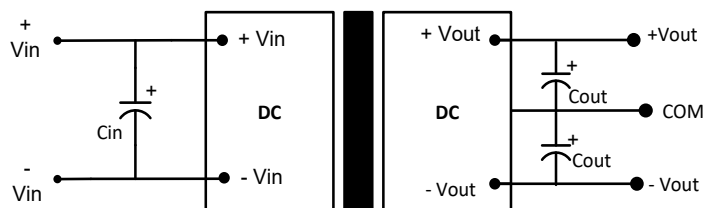
Typical application circuit

Single



Vin	Cin	Single Vout	Cout	Dual Vout	Cout
24VDC	10 μ F/100V	3.3VDC	100 μ F/50V	$\pm$ 5VDC	100 μ F/50V
48VDC	10 μ F/100V	5VDC		$\pm$ 12VDC	
		9VDC		$\pm$ 15VDC	
		12VDC		$\pm$ 24VDC	
		15VDC		--	
		24VDC		--	

Dual



Recommended EMC circuit

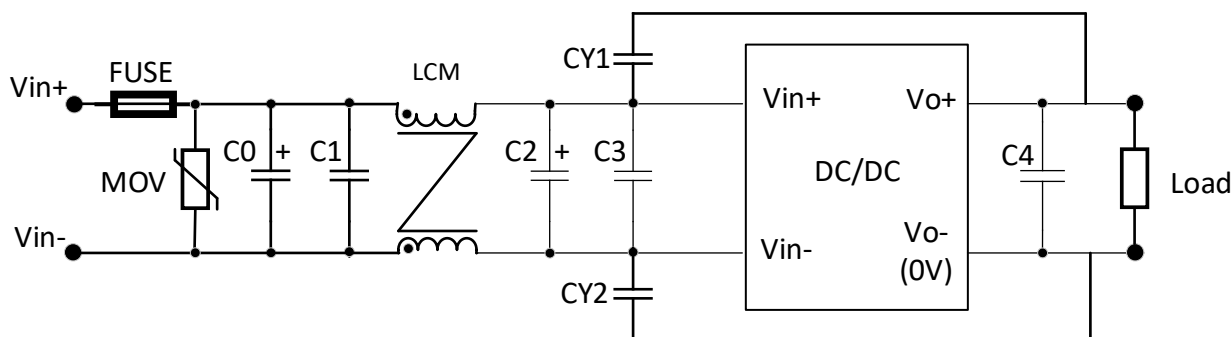
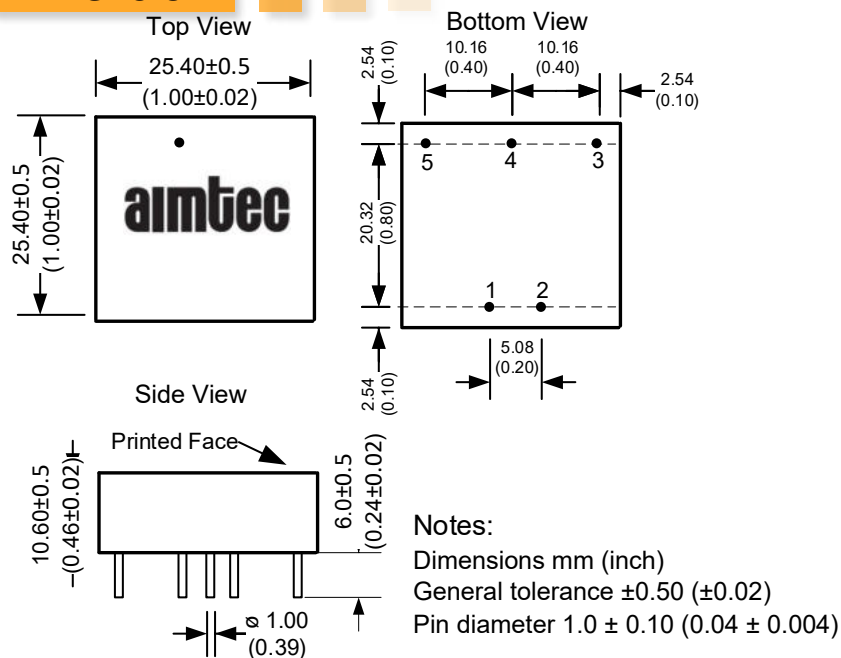


Fig.1

Parameter Description		
Model	Vin:24VDC	Vin:48VDC
FUSE	Choose according to actual input current	
MOV	S20K30	S14K60
C0	680 μ F/50V	680 μ F/100V
C1	1 μ F/50V	1 μ F/100V
C2	330 μ F/50V	330 μ F/100V
C3	4.7 μ F/50V	4.7 μ F/100V
C4	Recommended Test Circuit	
LCM	4.7mH	
CY1, CY2	1nF/3kV	

Dimension



Pin Out Specifications		
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	-Vout	-Vout
4	No Pin	COM
5	+Vout	+Vout

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.