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AM6C-LPZ



1 x 1"

The AM6C-LPZ 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 2:1 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, a high MTBF of 1,000,000h, 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.

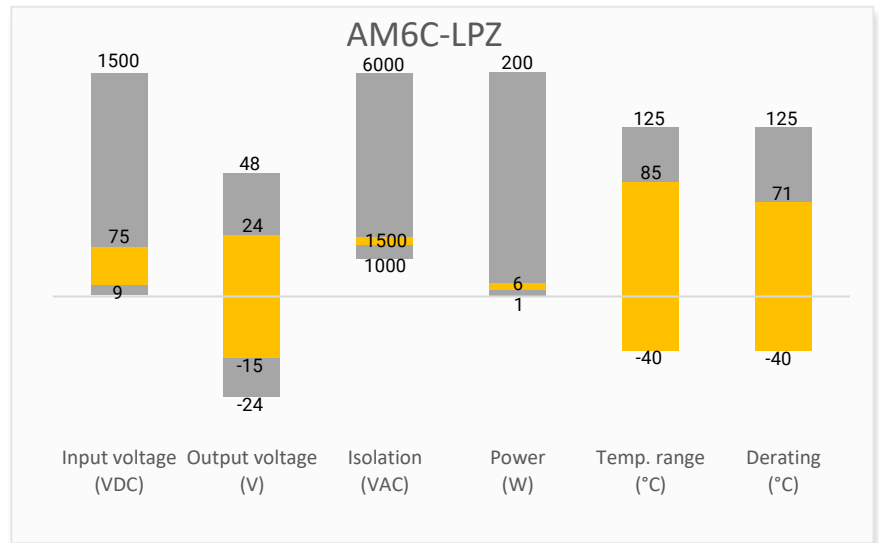
The AM6C-LPZ is suitable for grid power, instrumentation, industrial controls, communication, and civil applications.

Features

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



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 Typ (mA)		Output Current Max (mA)	Maximum Capacitive Load (μF)	Efficiency Full Load Typ (%)
			No Load	Full Load			
AM6C-1205SLPZ	12 (9-18)	5	10	603	1200	1000	81
AM6C-1212SLPZ	12 (9-18)	12	10	603	500	470	85
AM6C-1224SLPZ	12 (9-18)	24	10	603	250	100	85
AM6C-2403SLPZ	24 (18-36)	3.3	5	268	1500	1800	77
AM6C-2405SLPZ	24 (18-36)	5	5	296	1200	1000	82
AM6C-2409SLPZ	24 (18-36)	9	5	296	667	470	85
AM6C-2412SLPZ	24 (18-36)	12	5	296	500	470	85
AM6C-2415SLPZ	24 (18-36)	15	5	296	400	220	86
AM6C-2424SLPZ	24 (18-36)	24	5	296	250	100	85
AM6C-4803SLPZ	48 (36-75)	3.3	5	130	1500	1800	79
AM6C-4805SLPZ	48 (36-75)	5	5	150	1200	1000	83
AM6C-4812SLPZ	48 (36-75)	12	5	150	500	470	87
AM6C-4815SLPZ	48 (36-75)	15	5	150	400	220	88
AM6C-4824SLPZ	48 (36-75)	24	5	150	250	100	88

Dual Output

Model	Input Voltage (VDC)	Output Voltage (VDC)	Nominal Vin Input Current Typ (mA)		Output Current Max (mA)	Maximum Capacitive Load (μF)	Efficiency Full Load Typ (%)
			No Load	Full Load			
AM6C-1205DLPZ	12 (9-18)	±5	10	603	±600	470	81
AM6C-1212DLPZ	12 (9-18)	±12	10	603	±250	100	85
AM6C-1215DLPZ	12 (9-18)	±15	10	603	±200	100	83
AM6C-2405DLPZ	24 (18-36)	±5	5	296	±600	470	83
AM6C-2412DLPZ	24 (18-36)	±12	5	296	±250	100	87
AM6C-2415DLPZ	24 (18-36)	±15	5	296	±200	100	87

Input Specification

Parameters	Conditions	Minimum	Typical	Maximum	Units
Voltage Types				2:1	
Surge Voltage	12V input (1 sec. max.)	-0.7		25	V
	24V input (1 sec. max.)	-0.7		50	V
	48V input (1 sec. max.)	-0.7		100	V
Input reflected ripple current			20		mA
Start-up voltage	12V input			9	V
	24V input			18	V
	48V input			36	V
Input Under-voltage protection	12V input	5.5	6.5		V
	24V input	12	15.5		V
	48V input	26	30		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
Resistance	Input / output, 500VDC	≥ 1000		M Ω
Capacitance	Input / output, 100KHz / 0.1V	1000		pF

Output Specification

Parameters	Conditions	Typical	Maximum	Units
Voltage Tolerance	100% load @ Vin (nom.)	± 1	± 3	%
Line Regulation	LL to HL at Full Load, output 1	± 0.2	± 0.5	%
	LL to HL at Full Load, output 2	± 0.5	± 1	%
Load Regulation	5% to 100% load, output 1	± 0.5	± 1	%
	5% to 100% load, output 2	± 0.5	± 1.5	%
Cross Regulation	Dual, positive output 50% load, negative output 10% to 100% Load		± 5	%
Transient Recovery Time	25% load step change	300	500	μs
Transient recovery deviation	25% load step change	± 3	± 5	%
Ripple & Noise	20MHz Bandwidth, 100% load	50	100	mV pk-pk

General Specifications

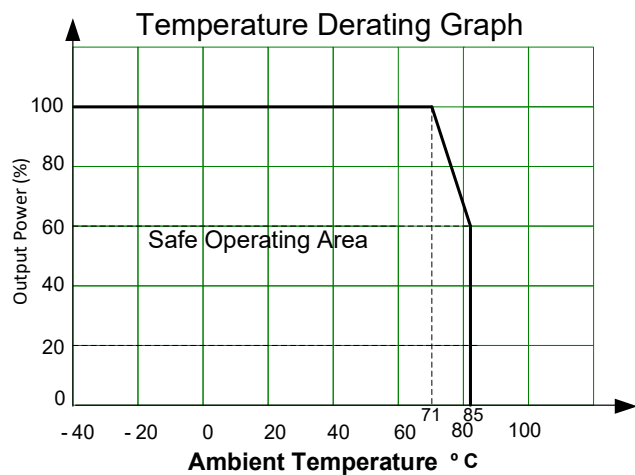
Parameters	Conditions	Minimum	Typical	Maximum	Units
Switching frequency	100% load, PWM mode		300		KHz
Over Current protection	Input voltage range	110	140	190	%Io
Over voltage protection	Input voltage range	110		160	%Vo
Short Circuit Protection	Continuous, Auto recovery				
Operating temperature	With derating	-40		85	$^{\circ}\text{C}$
Storage temperature		-55		125	$^{\circ}\text{C}$
Cooling	Free air convection				
Humidity	Non-condensing	5		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	Aluminum alloy				
Weight			12		g
Dimensions (L x W x H)	1.00x 1.00 x 0.47 inches (25.40 x 25.40 x 12.00 mm)				
Vibration	IEC/EN61373, category 1/grade B				
MTBF		$\geq 1\,000\,000$ hrs (MIL-HDBK -217F, $t=+25^{\circ}\text{C}$)			

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

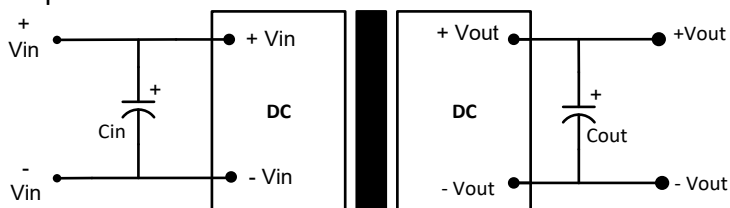
Parameters		
Standards	Information technology Equipment	Designed to meet UL/EN/IEC 62368-1
	EMI - Conducted and radiated emission	CISPR32/EN 55032, Class B, with the recommended EMC circuit
	Electrostatic Discharge Immunity	EN61000-4-2
	RF, Electromagnetic Field Immunity	EN61000-4-3
	Electrical Fast Transient/Burst Immunity	EN61000-4-4
	Surge Immunity	EN61000-4-5
	RF, Electromagnetic Field Immunity	EN61000-4-6

Derating

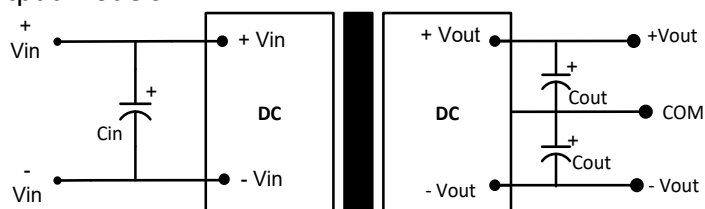


Typical application circuit

Single Output models

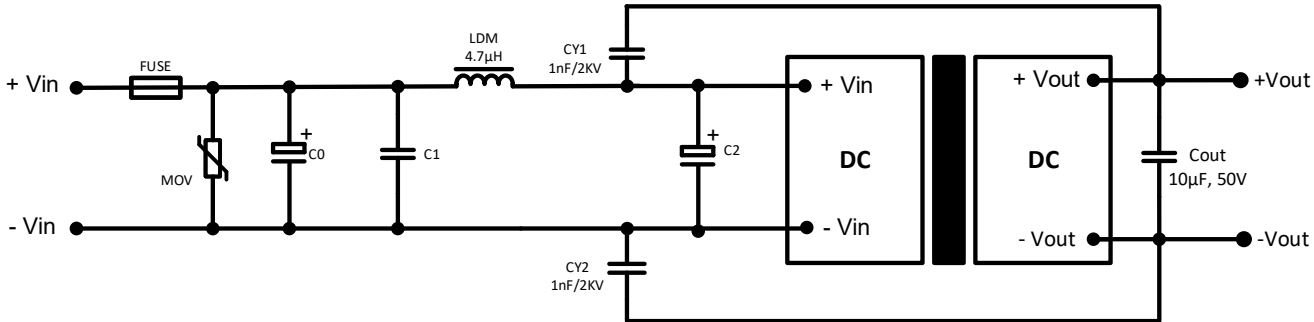


Dual Output models



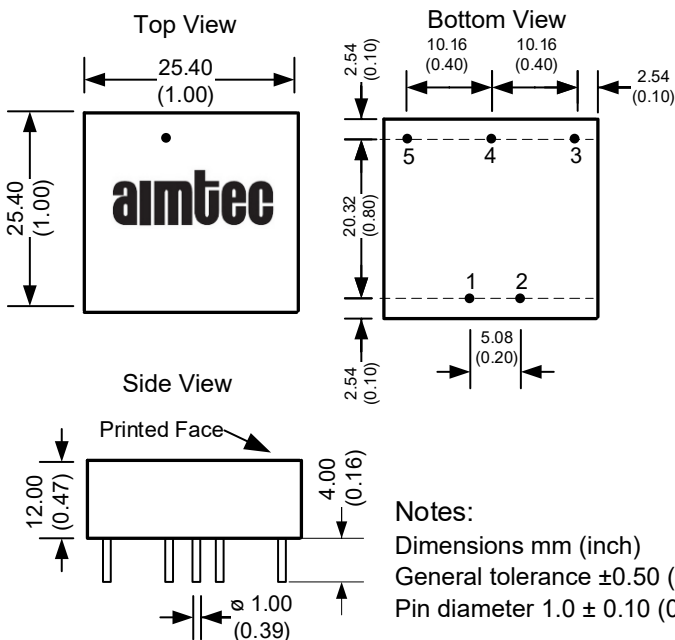
Vin	Cin	Vout	Cout
12VDC	100μF/50V	All outputs	10μF/50V
24VDC	10~47μF/50V		
48VDC	100μF/100V		

Recommended EMC circuit



Parameter Description			
Model	Vin: 12VDC	Vin: 24VDC	Vin: 48VDC
FUSE	Choose according to actual input current		
MOV	14D330K	20D470K	14D101K
C0	1000µF/35V	1000µF/50V	1000µF/100V
C1	1µF/50V	1µF/50V	4.7µF/100V
C2	330µF/35V	330µF/50V	330µF/100V

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.