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AM10C-LPZ



1 x 1

The AM10C-LPZ is a 10W 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 4.5-75VDC, 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.

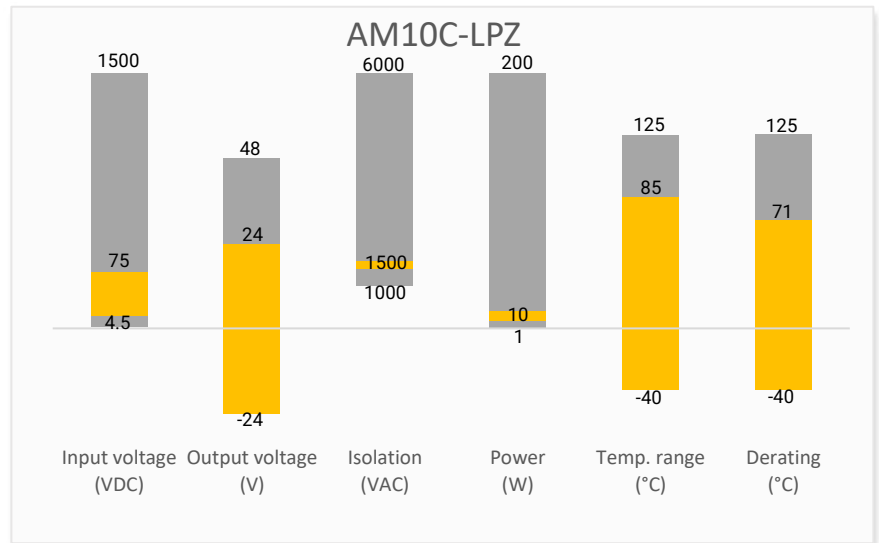
The AM10C-LPZ is suitable for grid power, instrumentation, industrial controls, communication, and civil applications.

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			
AM10C-0505SLPZ	5 (4.5-9)	5	5	2353	2000	470	85
AM10C-0512SLPZ	5 (4.5-9)	12	5	2411	834	470	83
AM10C-0515SLPZ	5 (4.5-9)	15	5	2380	667	330	84
AM10C-0524SLPZ	5 (4.5-9)	24	5	2380	417	100	83
AM10C-1205SLPZ	12 (9-18)	5	5	1004	2000	470	83
AM10C-1212SLPZ	12 (9-18)	12	5	947	834	470	87
AM10C-1215SLPZ	12 (9-18)	15	5	947	667	330	88
AM10C-1224SLPZ	12 (9-18)	24	5	947	417	100	88
AM10C-2403SLPZ	24 (18-36)	3.3	5	420	2400	2200	79
AM10C-2405SLPZ	24 (18-36)	5	5	502	2000	2200	83
AM10C-2412SLPZ	24 (18-36)	12	5	480	834	470	87
AM10C-2415SLPZ	24 (18-36)	15	5	480	667	330	88
AM10C-2424SLPZ	24 (18-36)	24	5	480	417	100	88
AM10C-4803SLPZ	48 (36-75)	3.3	5	210	2400	2200	79
AM10C-4805SLPZ	48 (36-75)	5	5	250	2000	2200	83
AM10C-4812SLPZ	48 (36-75)	12	5	240	834	470	87
AM10C-4815SLPZ	48 (36-75)	15	5	240	667	330	88
AM10C-4824SLPZ	48 (36-75)	24	5	240	417	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			
AM10C-0505DLPZ	5 (4.5-9)	±5	5	2411	±1000	1000	78
AM10C-0512DLPZ	5 (4.5-9)	±12	5	2380	±417	470	83
AM10C-0515DLPZ	5 (4.5-9)	±15	5	2380	±334	330	84
AM10C-0524DLPZ	5 (4.5-9)	±24	5	2380	±209	100	83
AM10C-1205DLPZ	12 (9-18)	±5	5	1004	±1000	1000	83
AM10C-1212DLPZ	12 (9-18)	±12	5	947	±417	470	86
AM10C-1215DLPZ	12 (9-18)	±15	5	947	±334	330	87
AM10C-1224DLPZ	12 (9-18)	±24	5	947	±209	100	87
AM10C-2405DLPZ	24 (18-36)	±5	5	502	±1000	1000	83
AM10C-2412DLPZ	24 (18-36)	±12	5	480	±417	470	87
AM10C-2415DLPZ	24 (18-36)	±15	5	480	±334	330	88
AM10C-2424DLPZ	24 (18-36)	±24	5	480	±209	100	88

Input Specification

Parameters	Conditions	Minimum	Typical	Maximum	Units
Voltage Types				2:1	
Surge Voltage	5V input (1 sec. max.)	-0.7		16	V
	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			40		mA
Start-up voltage	5V input			4.5	V
	12V input			9	V
	24V input			18	V
	48V input			36	V
Input Under-voltage protection	5V input	3	3.5		V
	12V input	5.5	6.5		V
	24V input	12	15.5		V
	48V input	26	30		V
Start-up time			10		mS
On/Off control	ON – open or 2.7-9VDC; OFF – short to –Vin or 0-1.2VDC, Idle current: 6 - 10mA				
Input filter	Pi filter				

Isolation Specification

Parameters	Conditions	Typical	Maximum	Units
Tested isolation voltage	Input / output, 60 sec, ≤ 1mA	≥1500		VDC
Resistance	Input / output, 500VDC	≥1000		MΩ
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, 3.3/5Vout models	±3	±7	%
	25% load step change, others	±3	±5	%
Ripple & Noise	20MHz Bandwidth, 100% load	40	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	150	190	%Io
Over voltage protection	Input voltage range	110		160	%Vo
Short Circuit Protection	Continuous, Auto recovery				
Operating temperature	With derating	-40		85	°C
Storage temperature		-55		125	°C
Cooling	Free air convection				
Humidity	Non-condensing	5		95	% RH
Temperature Coefficient	100% Load			±0.03	%/°C
Maximum soldering temperature	1.5mm from case for 10 sec			+300	°C
Case material	Aluminum alloy				

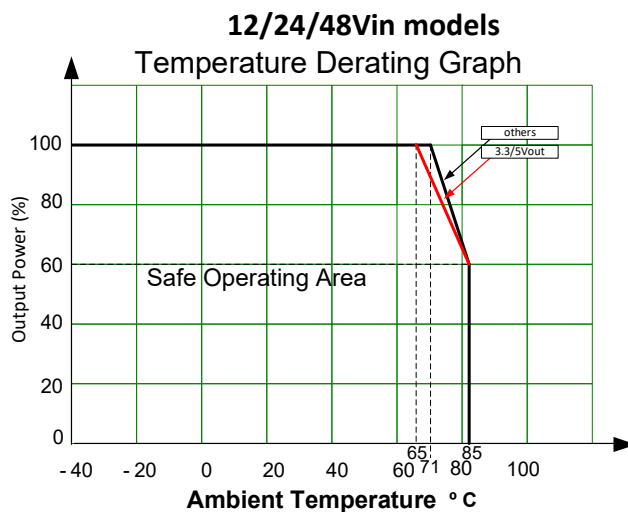
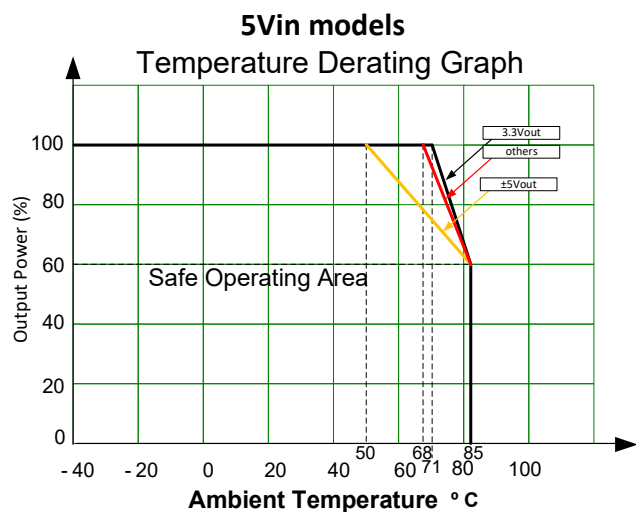
Weight			15		g
Dimensions (L x W x H)	1.00x 1.00 x 0.47 inches (25.40 x 25.40 x 12.00 mm)				
Vibration	IEC/EN61373, category 1/grade B				
MTBF		≥ 1 000 000 hrs (MIL-HDBK -217F, t=+25°C)			
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.					

Safety Specifications

Parameters

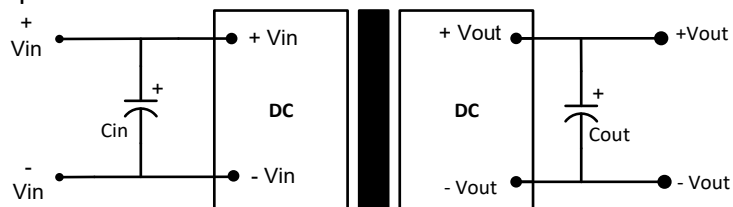
Standards	Information technology Equipment	Designed to meet UL/EN/IEC 62368-1
	EMI - Conducted and radiated emission	CISPR32/EN 55032, Class B, with the recommended EMC circuit
	Electrostatic Discharge Immunity	EN61000-4-2
	RF, Electromagnetic Field Immunity	EN61000-4-3
	Electrical Fast Transient/Burst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

Derating



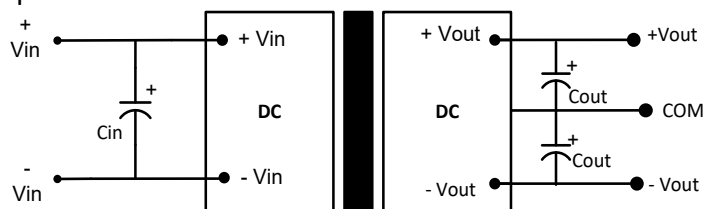
Typical application circuit

Single Output models

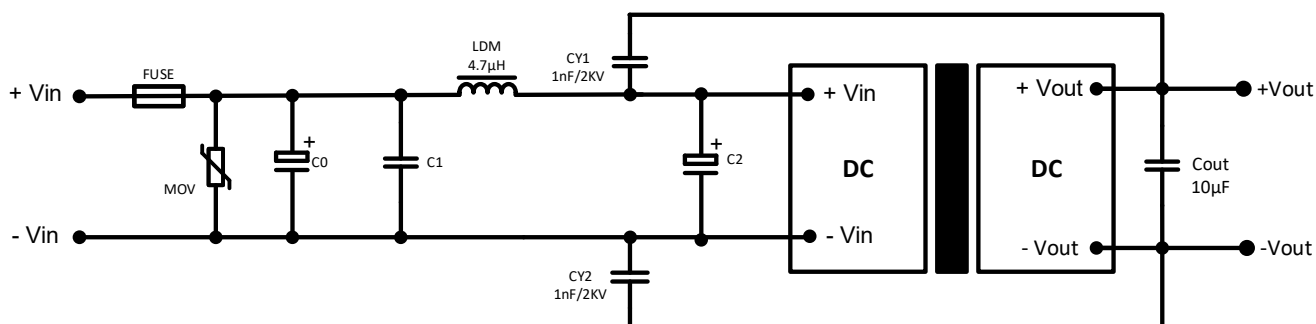


Vin	Cin	Vout	Cout
All inputs	100μF	All outputs	10μF

Dual Output models

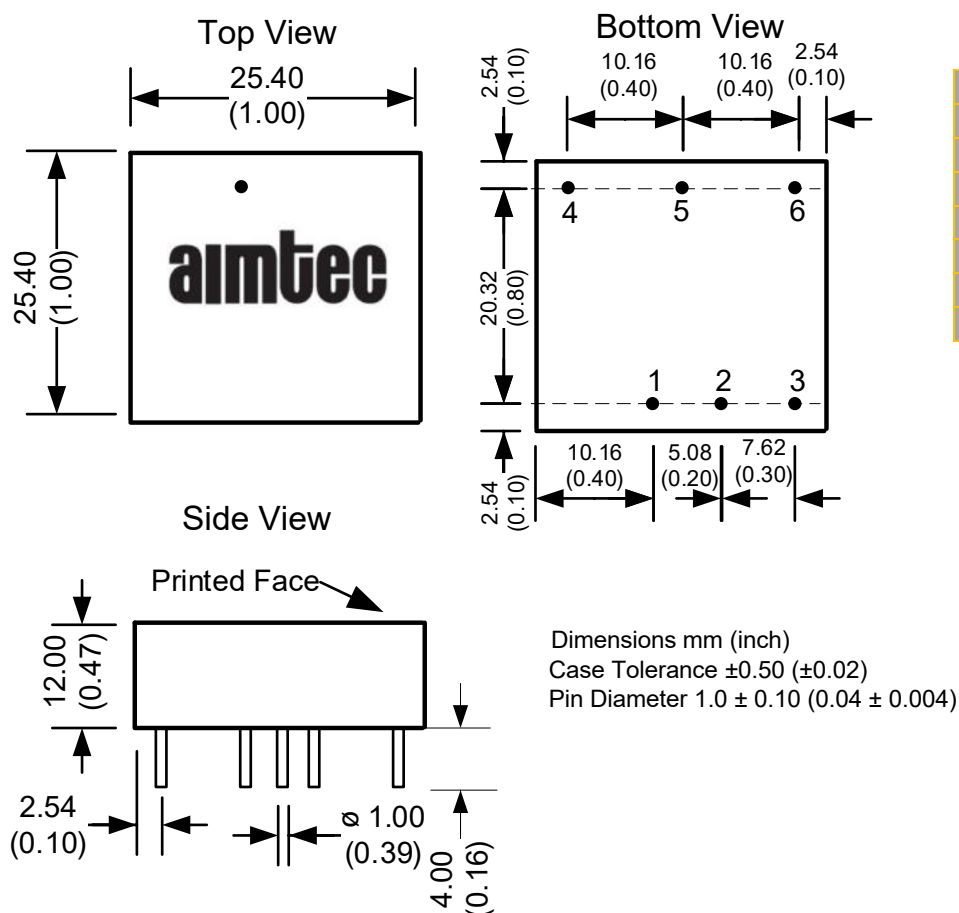


Recommended EMC circuit



Parameter Description	
Model	Vin: 5/12/24/48VDC
FUSE	Choose according to actual input current
MOV	S20K30
C0	330μF/100V
C1	1μF/100V
C2	330μF/100V

Dimension



Pin Out Specifications		
Pin	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	On/Off control	On/Off control
4	+Vout	+Vout
5	No Pin	COM
6	-Vout	-Vout

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