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AMEOFL5-480HALPZ



Open frame

AMEOFL5-480HALPZ series is one of Aimtec highly efficient green power 5W AC-DC converter series. They feature ultra-wide wide input range accepting either AC or DC voltage, high efficiency, compact size, open-frame, low power consumption and CLASS II reinforced insulation. A variety of EMC external circuits meet the needs of multiple industries.

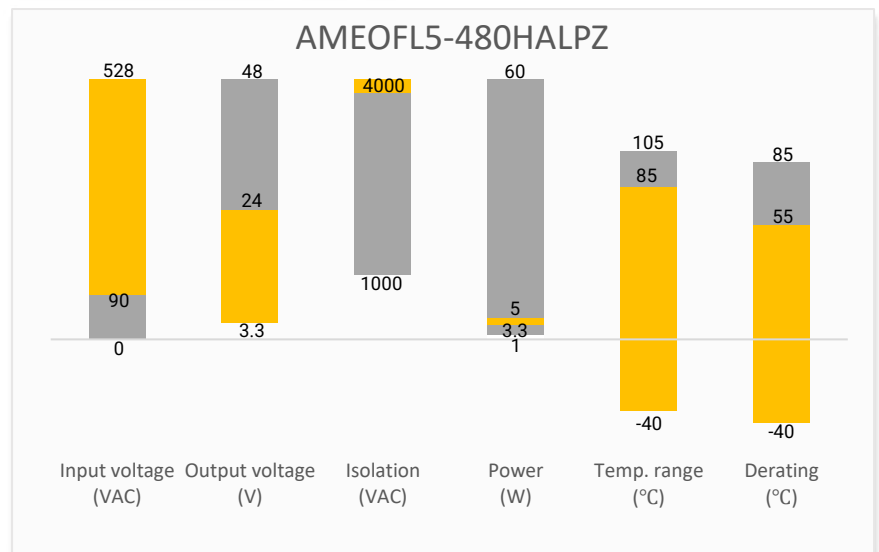
This new series offers great operating temperatures, from -40°C to 85°C and also features an isolation of 4000VAC for improved reliability and system safety. Furthermore, a high MTBF of 500,000h, output short circuit protection (OSCP) and an output over-current protection (OCP) come standard with the series.

All models are particularly suitable for industrial control, electric power, instrumentation and smart factory applications.

Features

- Universal Input: 90 - 528VAC/100 - 745VDC
- Operating Temp: -40 °C to +85 °C
- High isolation voltage: 4000VAC
- Low ripple & noise, 180mV(p-p), max.
- Output short circuit, over-current
- Open frame 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 (VAC/Hz)	Input Voltage (VDC)	Max Output wattage (W)	Output Voltage (V)	Output Current max (A)	Maximum capacitive load (μF)	Efficiency @ 230VAC (%)
AMEOFL5-3S480HALPZ	90~528/47~63	100~745	3.3	3.3	1	2200	70
AMEOFL5-5S480HALPZ	90~528/47~63	100~745	5	5	1	1500	72
AMEOFL5-9S480HALPZ	90~528/47~63	100~745	5	9	0.55	680	73
AMEOFL5-12S480HALPZ	90~528/47~63	100~745	5	12	0.42	470	79
AMEOFL5-15S480HALPZ	90~528/47~63	100~745	5	15	0.33	330	79
AMEOFL5-24S480HALPZ	90~528/47~63	100~745	5	24	0.21	100	79

Note: The output voltage is referred to the voltage applied to the load terminal with external circuits added.
The solid fixing or gluing process is necessary if the product is applied in a severe vibrating environment or application.

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input voltage	Nominal	100 ~ 480		VAC
Input current	230VAC	100		mA
	480VAC	70		mA
Inrush current	230VAC	17		A
	480VAC	28		A
Leakage current	230VAC/50Hz	0.2		mA RMS
External fuse	Slow blow type(necessary)	1		A

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	3.3V output	± 3	± 6	%
	Others	± 2.5	± 5	%
Line regulation	Full load	± 1.5		%
Load regulation	10% - 100% load	± 3		%
Ripple & Noise *	20MHz bandwidth, 10% - 100% load	100	180	mV _{p-p}
Minimum load		10		%
Hold up time	230VAC	35		ms
	380VAC	100		ms

* Ripple and noise measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 1uF ceramic capacitor and a 10uF electrolytic capacitor in parallel.

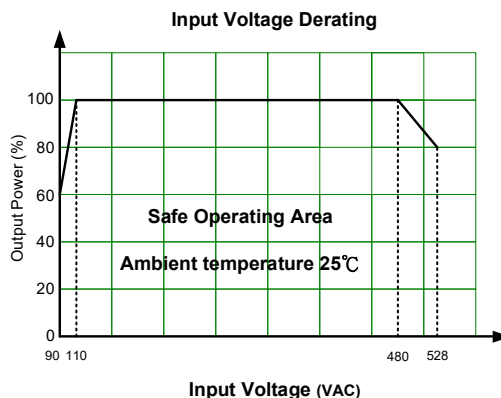
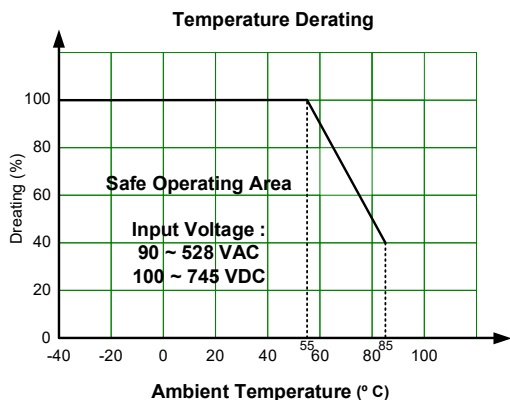
Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec, 5mA max		4000	VAC
Insulation Resistance I/O	500VDC	>100		MΩ

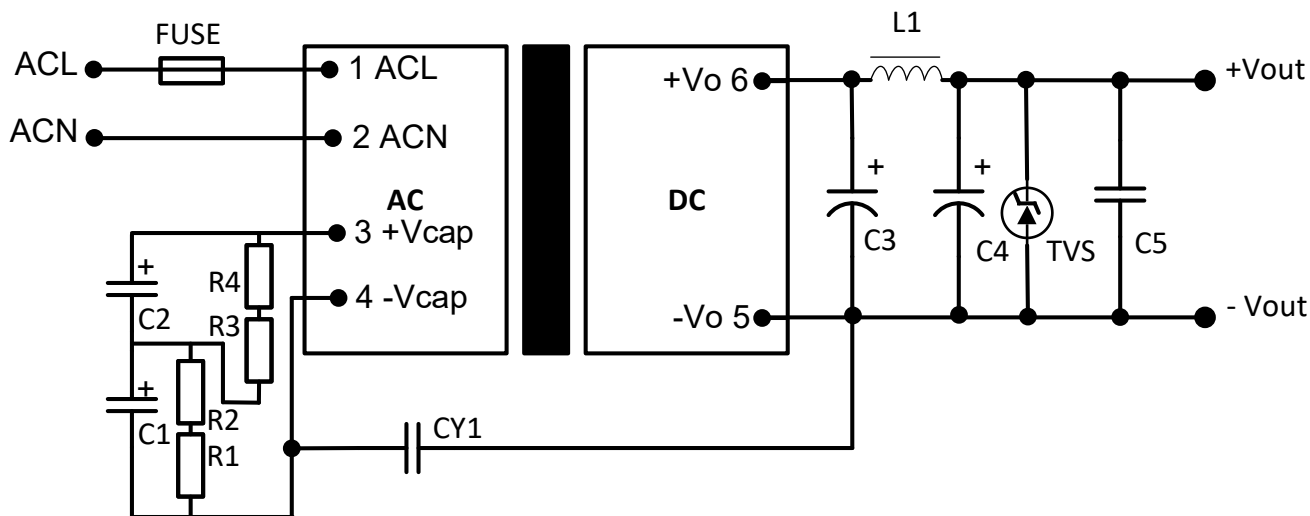
General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Safety class	Class II			
Over current protection	Auto recovery	≥ 110		% of Iout
Short circuit protection	Hiccup, Continuous, Auto recovery			
No-load power consumption	230VAC	0.1	0.3	W
Power derating	+55 °C to +85 °C	2.0		% / °C
	90VAC ~ 110VAC	2.0		% /VAC
	480VAC ~ 528VAC	0.42		% /VAC
Operating temperature	-40 to +85			°C
Storage temperature	-40 to +105			°C
Temperature coefficient	±0.2			% / °C
Reflow soldering temperature	260			°C
Manual soldering temperature	360			°C
Cooling	Free air convection			
Storage Humidity	95			% RH
Weight	6.5			g
Dimensions (L x W x H)	1.32 x 0.68 x 0.51 inches (33.50 x 17.20 x 13.00 mm)			
MTBF	> 500 000 hrs (MIL-HDBK -217F, t=+25°C)/Full Load			
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	Design to meet IEC/EN/UL 62368, EN 60335, EN 61558, UKCA	
	EMC - Conducted and radiated emission	CISPR32 / EN55032, Class B (With EMC Recommended Circuit)
	Electrostatic Discharge Immunity	IEC/EN 61000-4-2 Contact ±6KV, Air ±8KV Criteria B
	RF, Electromagnetic Field Immunity	IEC/EN 61000-4-3 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC/EN 61000-4-4 ±4KV, Class B (With EMC Recommended Circuit)
	Surge Immunity	IEC/EN 61000-4-5 L-L ±2KV, Class B (With EMC Recommended Circuit)
	RF, Conducted Disturbance Immunity	IEC/EN 61000-4-6 10Vrms, Criteria A

Derating



Typical Recommended Circuit

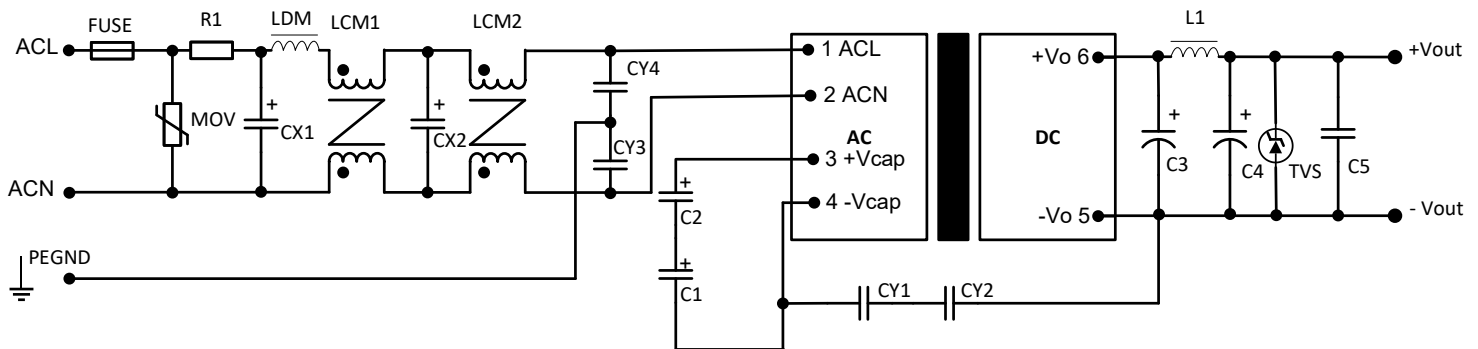


This circuit is the basic design reference, components with "" are required for the converter's operation.

FUSE to be 1A, slow blow and is also required for safety. R1* ... R4* to be 1M Ohm 1206 SMD resistors, and it is also required.

Vout	C1*, C2*	C3*	C4*	C5	CY1*	L1*	TVS
5V	47uF, 400V	470uF, 16V	150uF, 25V	0.1uF, 25V	1nF, 400VAC	2.2uH, 6A	SMBJ7.0A
9V, 12V	47uF, 400V	470uF, 16V	100uF, 25V	0.1uF, 25V	1nF, 400VAC	2.2uH, 6A	SMBJ12A
15V, 24V	47uF, 400V	220uF, 35V	47uF, 35V	0.1uF, 50V	1nF, 400VAC	2.2uH, 6A	SMBJ20A

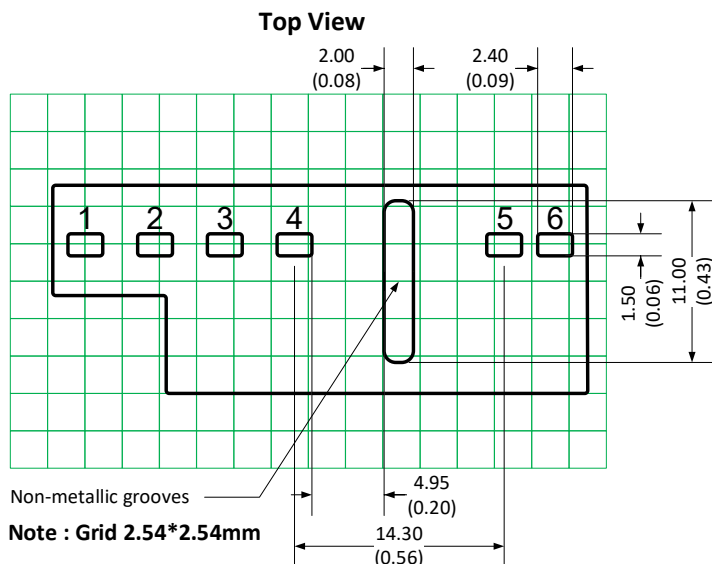
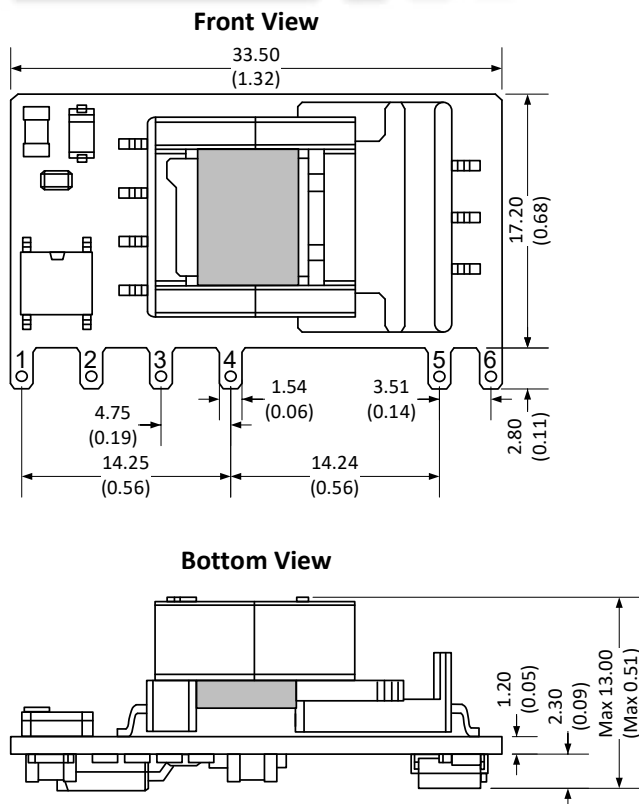
EMC Recommended Circuit



Components above with “” are required for the converter’s operation. “R1” is wire-wound resistor.

FUSE*	R1*	MOV	LDM	LCM1
2A, 500VAC	12Ω, 3W	14D561	2.2mH, 024A	200uH, 0.8A
LCM2	CX1, CX2	CY1, CY2	CY3, CY4	C1, C2
12.6mH, 0.5A	0.1uF, 480VAC	2.2nF, 400VAC	1nF, 400VAC	47uF, 400VAC
Others				
Refer to Typical Recommended Circuit				

Dimensions



Note:

Unit: mm [inch]

General tolerances: ± 1.00 [± 0.04]

The layout of the device is for reference only,
Please refer to the actual product.

Pin Output Specifications

Pin	Function
1	+V Input (L)
2	-V Input (N)
3	+Vcap
4	-Vcap
5	-V Output
6	+V Output

1. It is necessary to add Cap between pin3 to pin4
2. It is necessary to add circuit to the output as shown in recommended circuit
3. The layout of the device is for reference only, please refer to the actual product

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 the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.