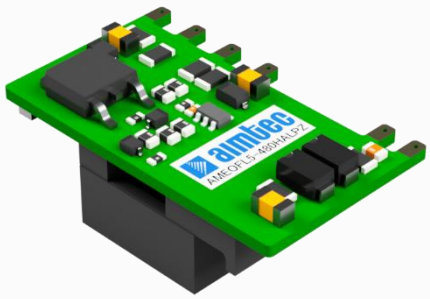
AMEOFL5-480HALPZ

Click to ORDER samples



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℃ to 85℃ 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.

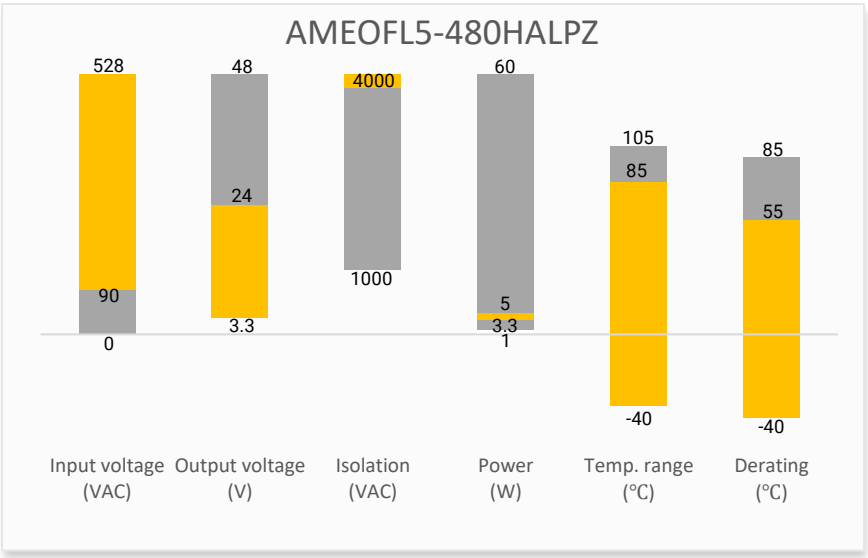
All models are particularly suitable for industrial control, electric power, instrumentation and smart factory applications.

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
- Designed to meet IEC/EN/UL 62368-1, EN 60335-1, EN 61558-1

RoHS 3yr Warranty CE UKCA

Summary



Training

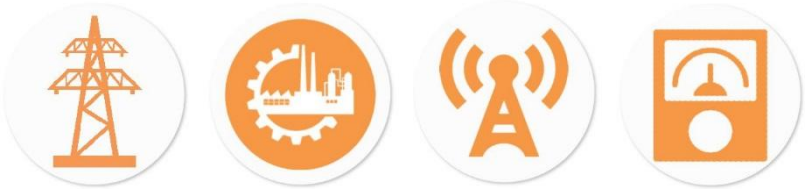
Product Training Video (click to open)

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		200	mA
	480VAC		100	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
Input filter	External EMC filter (refer to recommended EMC circuit)			

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		%

* 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

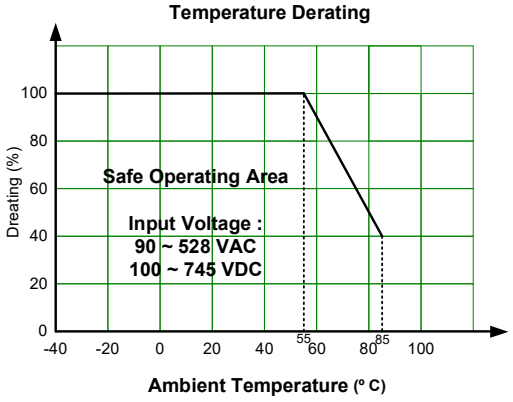
Parameters	Conditions	Typical	Maximum	Units
Safety class	Class II			
Overvoltage category	OVC II			
Over current protection	Auto recovery	≥ 110		% of Iout
Short circuit protection	Hiccup, Continuous, Auto recovery			
No-load power consumption	230VAC	0.1	0.3	W
Power derating	+55 °C to +85 °C	2.0		% / °C
	90VAC ~ 115VAC	1.6		% /VAC
	400VAC ~ 528VAC	0.32		% /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			

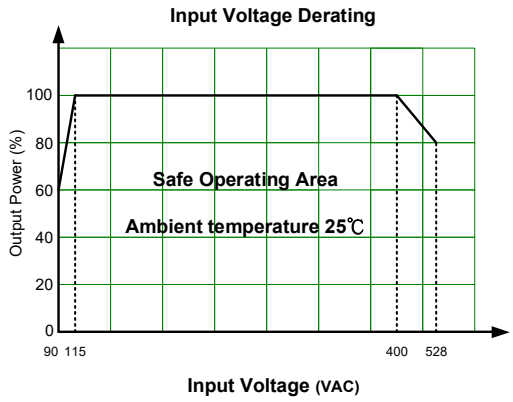
NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications

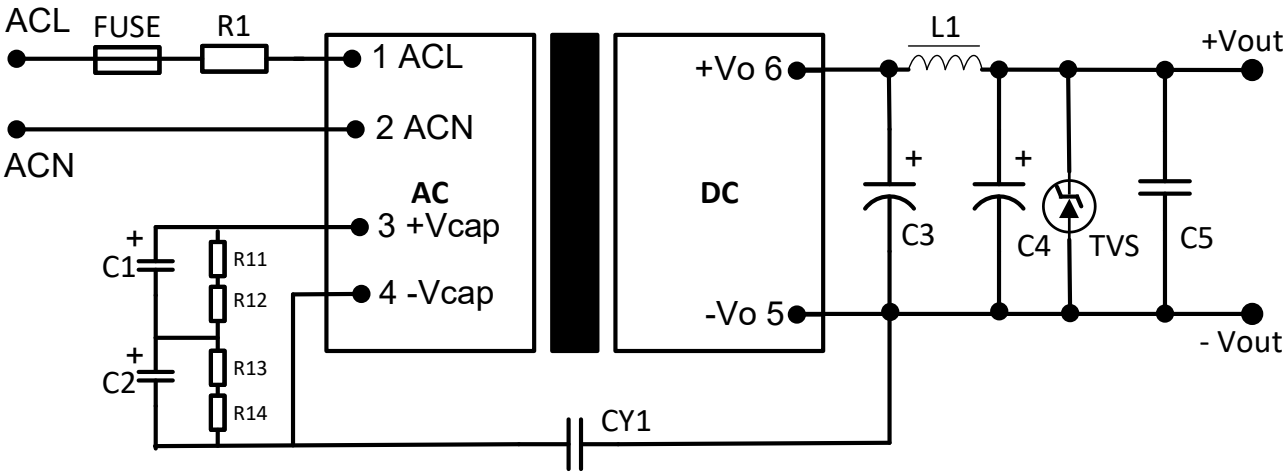
Parameters		
Standards	Designed to meet IEC/EN/UL 62368-1, EN 60335-1, EN 61558-1	
	EMC - Conducted and radiated emission	CISPR32 / EN55032, class A CISPR32 / EN55032, class B (with the recommended EMC circuit)
	Electrostatic Discharge Immunity	IEC/EN61000-4-2 Contact ±6KV, Air ±8KV, Criteria B
	RF, Electromagnetic Field Immunity	IEC/EN61000-4-3 10V/m, Criteria A
	Electrical Fast Transient/Burst Immunity	IEC/EN61000-4-4 ±2KV, Criteria B ±4KV, Criteria B (with the recommended EMC circuit)
	Surge Immunity	IEC/EN61000-4-5 L-L ±1KV, Criteria B L-L ±2KV, Criteria B (with the recommended EMC circuit)
	RF, Conducted Disturbance Immunity	IEC/EN61000-4-6 10Vr.m.s, Criteria A

Derating





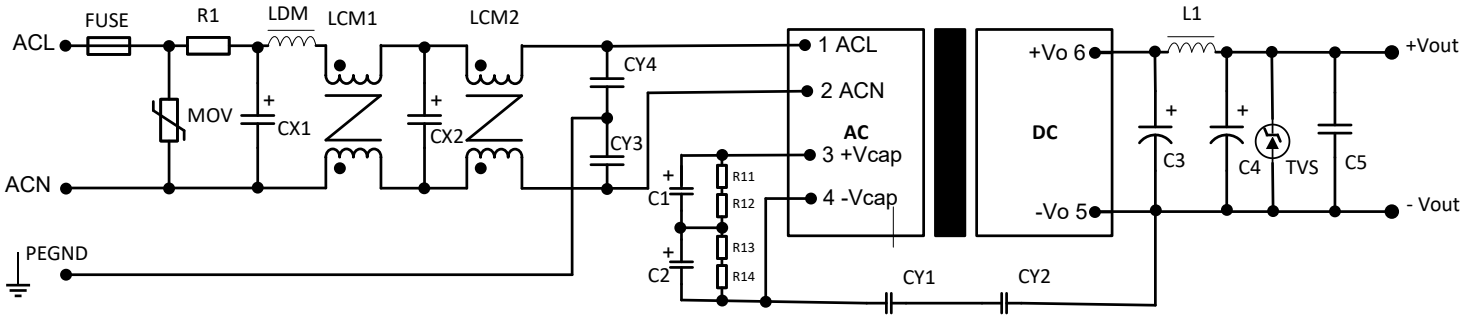
Typical Application Circuit



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 is wire-wound resistor.

Vout	R1*	R11*, R12*, R13*, R14*	C1*, C2*	C3*	C4*	C5	CY1*	L1*	TVS
3.3V	12Ω, 3W	1MΩ, 1206	47uF, 400VAC	470uF, 16V	150uF, 25V	0.1uF, 25V	1nF, 400VAC	2.2uH, 6A	SMBJ7.0A
5V	12Ω, 3W	1MΩ, 1206	47uF, 400VAC	470uF, 16V	150uF, 25V	0.1uF, 25V	1nF, 400VAC	2.2uH, 6A	SMBJ7.0A
9V	12Ω, 3W	1MΩ, 1206	47uF, 400VAC	470uF, 16V	100uF, 25V	0.1uF, 25V	1nF, 400VAC	2.2uH, 6A	SMBJ12A
12V	12Ω, 3W	1MΩ, 1206	47uF, 400VAC	470uF, 16V	100uF, 25V	0.1uF, 25V	1nF, 400VAC	2.2uH, 6A	SMBJ12A
15V	12Ω, 3W	1MΩ, 1206	47uF, 400VAC	220uF, 35V	47uF, 35V	0.1uF, 50V	1nF, 400VAC	2.2uH, 6A	SMBJ20A
24V	12Ω, 3W	1MΩ, 1206	47uF, 400VAC	220uF, 35V	47uF, 35V	0.1uF, 50V	1nF, 400VAC	2.2uH, 6A	SMBJ20A

EMC Recommended Circuit

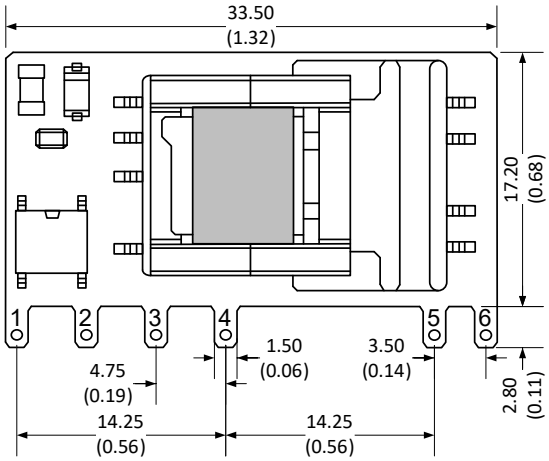


Components above with "" are required for the converter's operation.
For other components, please refer to the typical application circuit

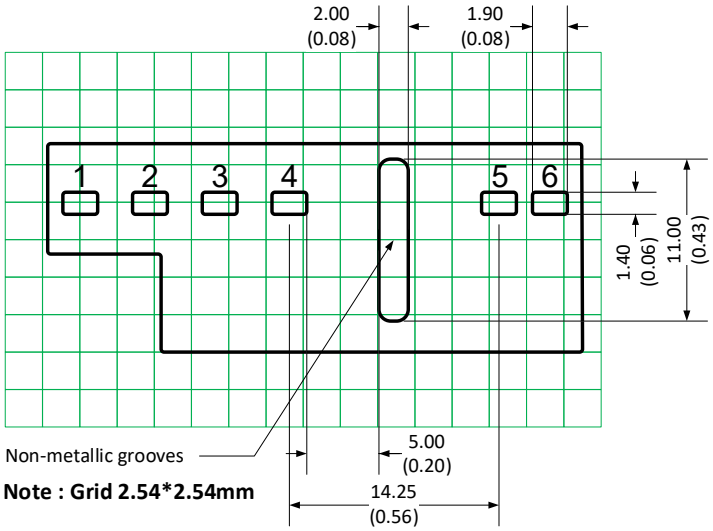
FUSE*	MOV	LDM	LCM1	LCM2	CX1, CX2	C1*, C2*	CY1, CY2	CY3, CY4
2A, 500VAC	14D911K	2.2mH, 0.24A	200uH, 0.8A	12.6mH, 0.5A	0.1uF, 480VAC	47uF, 400VAC	2.2nF, 400VAC	1nF, 400VAC

Dimensions

Front View

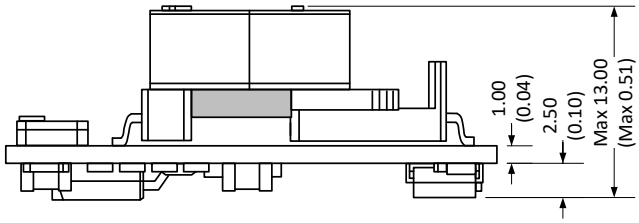


Top View



Note : Grid 2.54*2.54mm

Bottom View



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