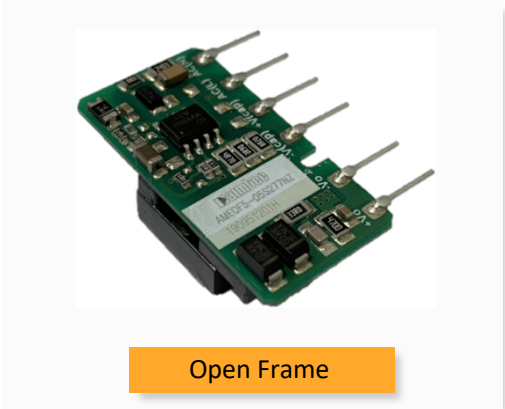


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**AMEOF5-277NZ**



Open Frame

The AMEOF5-277NZ series is one of Aimtec highly efficient green 5W AC-DC converters. They feature an ultra-wide wide input range accepting either AC or DC voltage, high efficiency, low power consumption and CLASS II reinforced insulation.

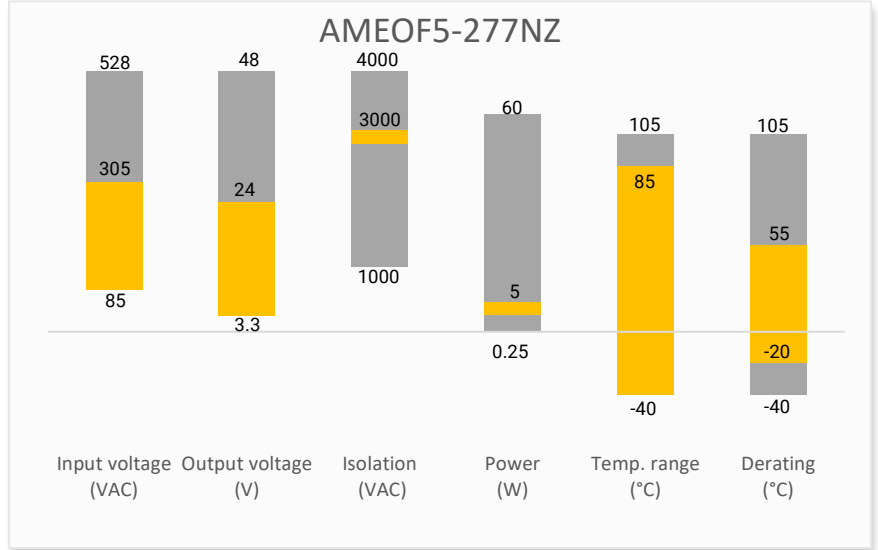
This new series offers great operating temperatures, from -40°C to 85°C and an isolation of 3000VAC for improved reliability and system safety. Furthermore, a high MTBF of 300,000h, output short circuit protection (OSCP), output over-current protection (OCP) come standard with the series.

The converter can be configured to meet class A or class B of the CISPR32/EN55032 standard. This series is suitable for industrial control, electric power, instrumentation and smart home applications with dimensional constraints.

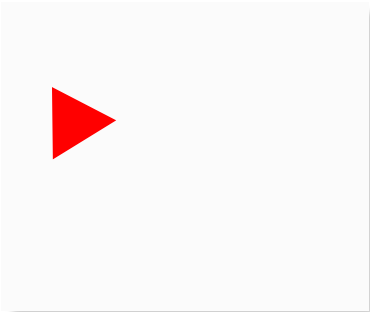
**Features**

- Universal Input: 85 - 305VAC/70 - 430VDC
- Operating Temp: -40 °C to +85 °C
- High isolation voltage: 3000VAC
- Low ripple & noise, 150mV(p-p), max.
- Output short circuit, over-current protection

**Summary**



**Training**



Product Training Video  
(click to open)



Application Notes

**Applications**



Power Grid



Industrial



Instrumentation



IoT

## 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 ( $\mu$ F)	Efficiency @ 230VAC (%)
AMEOF5-03S277NZ	85~305/47~63	70~430	3.3	3.3	1	2200	67
AMEOF5-05S277NZ	85~305/47~63	70~430	5	5	1	1500	74
AMEOF5-09S277NZ	85~305/47~63	70~430	5	9	0.56	680	75
AMEOF5-12S277NZ	85~305/47~63	70~430	5	12	0.42	470	77
AMEOF5-15S277NZ	85~305/47~63	70~430	5	15	0.34	330	77
AMEOF5-24S277NZ	85~305/47~63	70~430	5	24	0.21	100	79
AMEOF5-03SL277NZ	85~305/47~63	70~430	3.3	3.3	1	2200	67
AMEOF5-05SL277NZ	85~305/47~63	70~430	5	5	1	1500	74
AMEOF5-09SL277NZ	85~305/47~63	70~430	5	9	0.56	680	75
AMEOF5-12SL277NZ	85~305/47~63	70~430	5	12	0.42	470	77
AMEOF5-15SL277NZ	85~305/47~63	70~430	5	15	0.34	330	77
AMEOF5-24SL277NZ	85~305/47~63	70~430	5	24	0.21	100	79

### Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Input Current	115VAC		200	mA
	277VAC		100	
Inrush current	115VAC	20		A
	277VAC	40		
Input fuse	1A Slow-blow type required			

### Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Voltage accuracy	10-100% load	$\pm 5$		%
Line regulation	Full load	$\pm 1.5$		%
Load regulation	10-100% load	$\pm 3$		%
Ripple & Noise	20MHz bandwidth	80	150	mV p-p

### Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	60 sec, 5mA max		3000	VAC

### General Specifications

Parameters	Conditions	Typical	Maximum	Units
Over Current protection	Auto recovery	$\geq 110$		% of Iout
Short circuit protection	Hiccup, Continuous, Auto recovery			
Operating temperature		-40 to +85		$^{\circ}$ C
Storage temperature		-40 to +105		$^{\circ}$ C

Power consumption	230VAC	0.25	0.5	W
Temperature coefficient		±0.15		% / °C
Power derating	-40 °C to -20°C, 85VAC to 110VAC	2.50		% / °C
	+55 °C to +85°C	1.67		
	85VAC to 110VAC	1.60		% / VAC
	277VAC to 305VAC	0.43		
Safety class	Class II			
Cooling	Free air convection			
Storage Humidity			95	% RH
Weight		6		g
Dimensions (L x W x H)	1.38 x 0.71 x 0.43 inches (35.00 x 18.00 x 11.00mm)			
MTBF	> 300 000 hrs (MIL-HDBK -217F, t <sub>a</sub> =+25°C)/Full Load			
<b>NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity&lt;75%, nominal input voltage and at rated output load unless otherwise specified.</b>				

## Safety Specifications

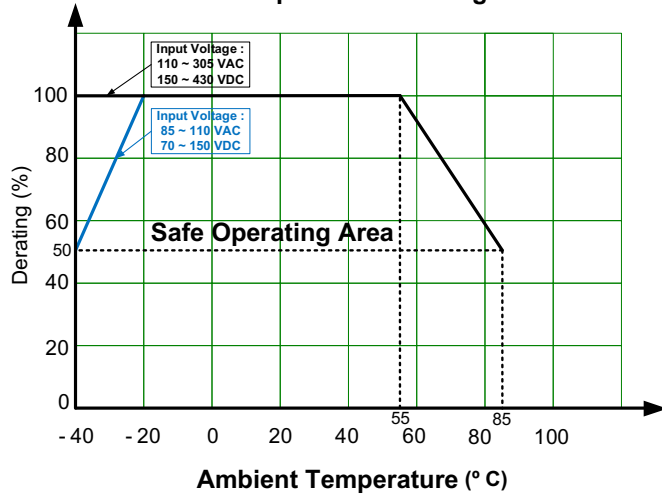
### Parameters

Agency approvals	UL 62368-1			
Standards	Design to meet ICE/EN62368-1, EN60335			
	EMC - Conducted and radiated emission	CISPR32 / EN55032 Class A, (With typical application circuit, EMI Class A circuit) CISPR32 / EN55032 Class B, (With EMI Class B circuit)		
	Electrostatic Discharge Immunity	IEC 61000-4-2 Contact ±4KV, Criteria B		
	RF, Electromagnetic Field Immunity	IEC 61000-4-3 10V/m, Criteria A		
	Electrical Fast Transient/Burst Immunity	IEC 61000-4-4 ±2KV, Criteria B (With typical application circuit, EMS Class III circuit) IEC 61000-4-4 ±4KV, Criteria B (With EMS Class IV circuit)		
	Surge Immunity	IEC 61000-4-5 L-L ±1KV, Criteria B (with typical application circuit, EMS Class III and EMI Class A circuit) IEC 61000-4-5 L-L ±2KV, Criteria B (with EMS Class IV and EMI Class A circuit) IEC 61000-4-5 L-L ±1KV, L-G ±2KV, Criteria B (with EMS Class III and EMI Class B circuit)		
		IEC 61000-4-5 L-L ±2KV, L-G ±4KV, Criteria B (with EMS Class IV and EMI Class B circuit)		
		IEC 61000-4-6 10Vr.m.s with EMC recommended circuit, Criteria A		
	RF, Conducted Disturbance Immunity	IEC 61000-4-6 10Vr.m.s with EMC recommended circuit, Criteria A		
Voltage dips, Short Interruptions Immunity	IEC 61000-4-11 0%, 70%, with EMC recommended circuit, Criteria B			

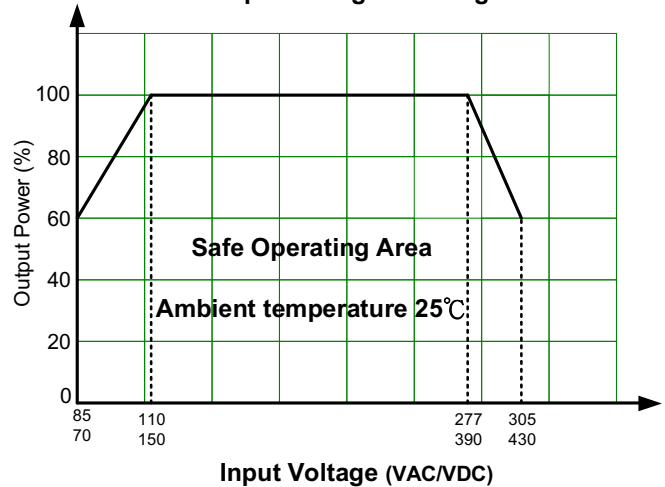
## Derating



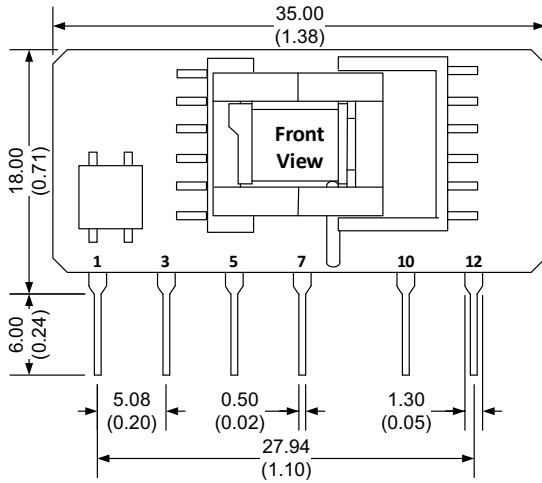
**Temperature Derating**



**Input Voltage Derating**

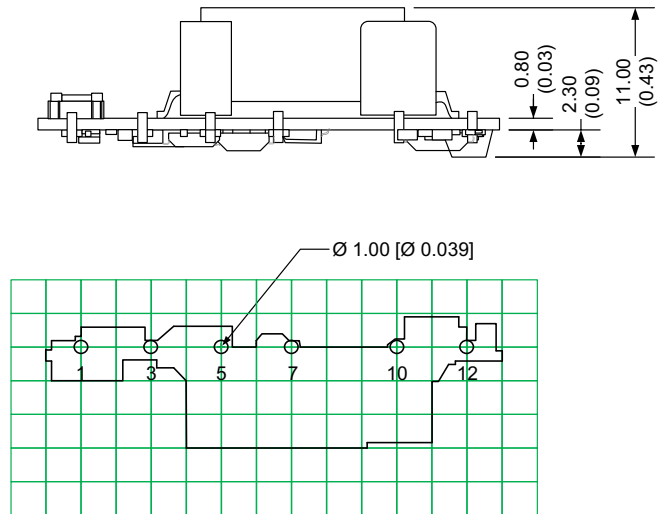


## Dimensions

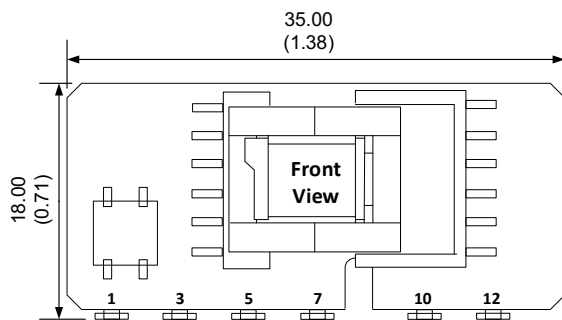


Note:  
Unit: mm [inch]  
Pin section tolerances:  $\pm 0.10$  [ $\pm 0.004$ ]  
General tolerances:  $\pm 0.50$  [ $\pm 0.020$ ]

Bottom View



Note : Grid 2.54\*2.54 mm

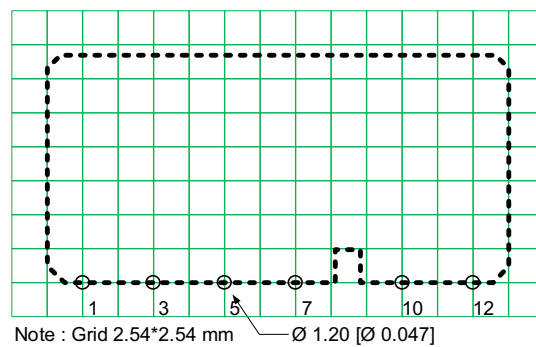
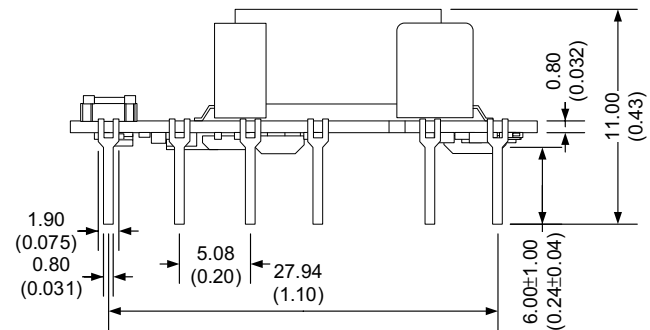


Note:  
Unit: mm [inch]  
Pin section tolerances:  $\pm 0.10$  [ $\pm 0.004$ ]  
General tolerances:  $\pm 0.50$  [ $\pm 0.020$ ]

Pin Output Specifications	
Pin	Function
1	AC Input (N)
3	AC Input (L)
5	+V_Cap
7	-V_Cap
10	-V Output
12	+V Output

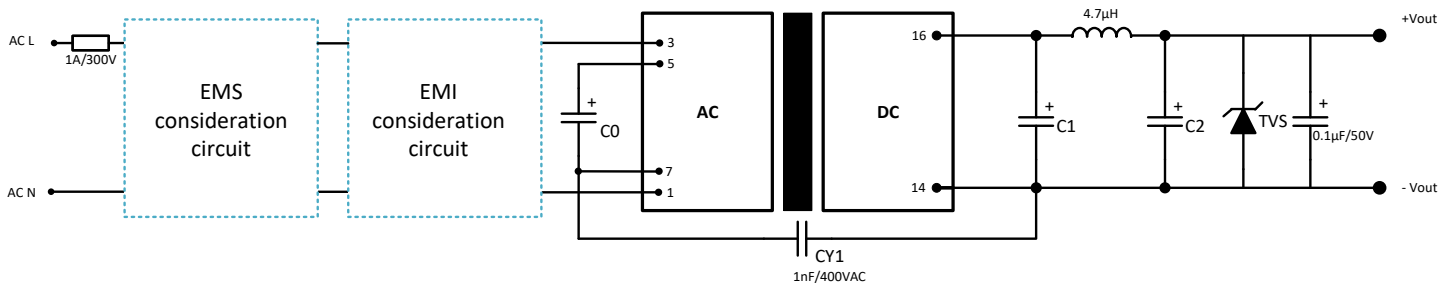
Note:

1. Capacitor between pin5 and pin7 is necessary.
2. External circuit on the output side is necessary. Please refer to the recommended circuit.
3. It is needed to have distance  $\geq 6.4$ mm for safety between external components in primary circuit and secondary circuit.
4. The layout of the device is for reference only, please refer to the actual product.



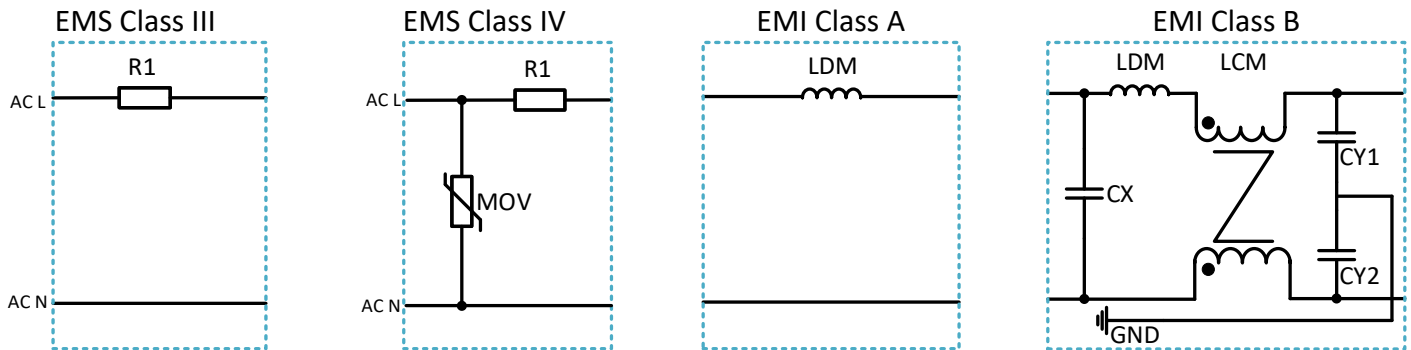
Note : Grid 2.54\*2.54 mm

## Recommended EMC external circuit



A suppressor diode (TVS) with 1.2 times of the output voltage rating is recommended.

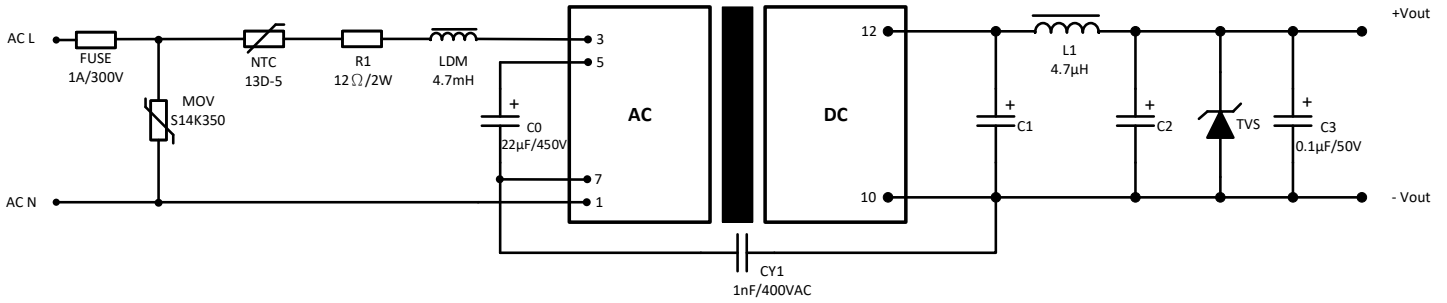
## EMI & EMS Recommended Circuit



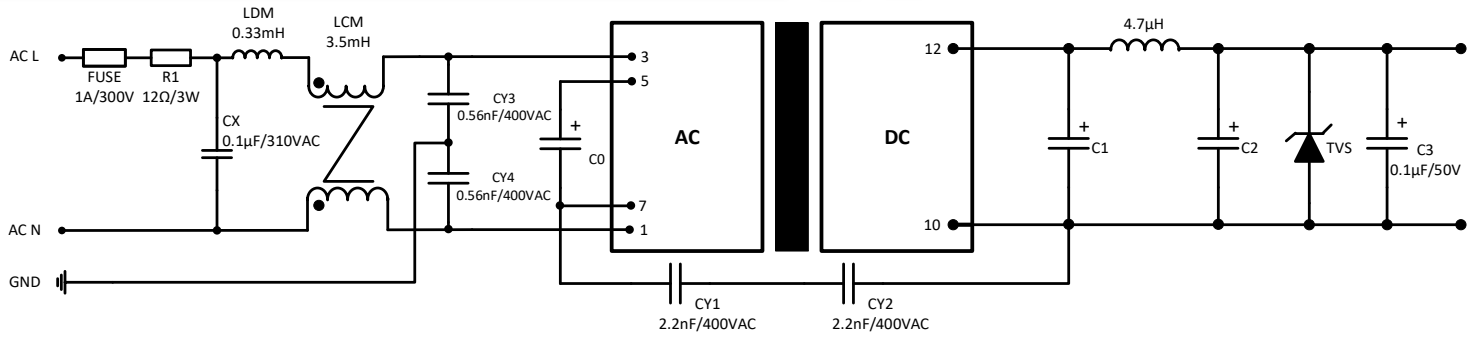
Component	EMS		EMI	
	Class III	Class IV	CLASS A	CLASS B
MOV	-	S14K350	-	-
R1	12Ω/3W	12Ω/3W	-	-
CX	-	-	-	0.1µF/310VAC
CY1	-	-	-	0.56nF/400VAC
CY2	-	-	-	0.56nF/400VAC
LCM	-	-	-	3.5mH
LDM	-	-	4.7mH	0.33mH
FUSE	1A/300V	2A/300V	1A/300V	1A/300V

Model	C0	C1	C2
3.3 VDC output	10µF/450V (-20°C to +85°C) 22µF/450V (-40°C to +85°C)	470µF/16V (Solid capacitor)	150µF/35V
5 VDC output		470µF/16V (Solid capacitor)	150µF/35V
9 VDC output		270µF/16V (Solid capacitor)	100µF/35V
12 VDC output		270µF/16V (Solid capacitor)	100µF/35V
15 VDC output		470µF/35V	47µF/35V
24 VDC output		220µF/35V	47µF/35V

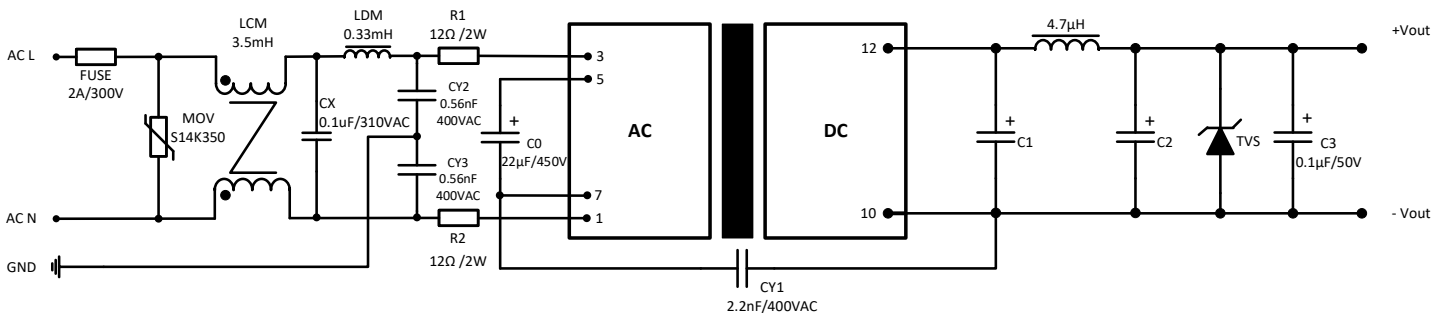
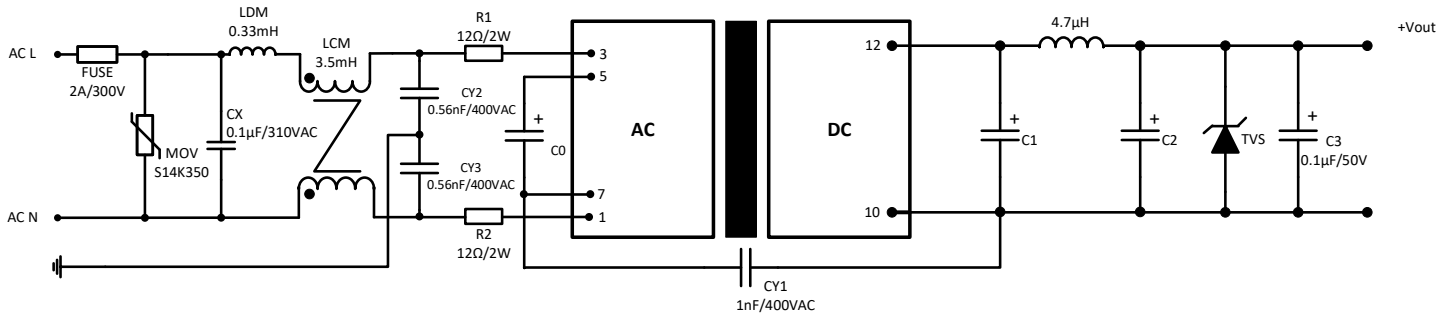
Typical application circuit



Recommended EMC circuit for EN60335



Recommended EMC circuit for EMI Class B, EMS Class IV



**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](http://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](http://www.aimtec.com).