



# PDM-40-xx-y Series



CE EN62368-1

RoHS Reach



## Features

- Ultra-wide 85 - 305VAC and 100 - 430VDC input voltage range
- Operating ambient temperature range: -40°C to +85°C
- High I/O isolation test voltage up to 4200VAC
- EMI performance meets CISPR32/EN55032 CLASS B
- 5000m altitude application
- Panel mounting and DIN Rail mounting option

## Selection Guide

TYPE	Output			Efficiency (%) Typ. at 230Vac	Capacitive Load (µF) Max.
	POWER (W)	Voltage (VDC)	Current (mA) Typ.		
PDM-40-05-y	35	5	7000	86	6600
PDM-40-12-y	40	12	3330	89	4400
PDM-40-15-y		15	2666	90	3000
PDM-40-24-y		24	1670	89	1500
PDM-40-48-y		48	833	90	470

Note: y = P – panel mounting option, y = D – din rail mounting option.



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## Specifications

Characteristic	Item	Operating Conditions	Min.	Typ.	Max.	Unit	
Input Specifications	Input Voltage Range	AC input	85	--	305	VAC	
		DC input	100	--	430	VDC	
	Input Frequency		47	--	63	HZ	
	Input Current (Inrush Current)	115VAC	--	(30)	1.0	A	
		230VAC	--	(60)	0.6		
	Leakage Current	277VAC/50Hz	0.1mA RMS max				
	External Input Fuse	Recommended 3.15A/300V, slow-blow, required (The actual use needs to be selected according to the application environment)					
Hot Plug	unavailable						
Output Specifications	Voltage Accuracy		--	±2.0	--	%	
	Line Regulation	100% load	--	±0.5	--		
	Load Regulation	0-100% load	5V	--	±2.0		--
			12V/15V/24V/48V	--	±1.0	--	
	Ripple & Noise (*)	20MHz bandwidth (peak to peak)	--	100	150	mV	
	Standby Power Consumption		--	0.3	0.55	W	
	Temperature Coefficient		--	±0.02	--	%/°C	
	Hold Up Time	115/230VAC	--	8/50	--	ms	
	Short-circuit Protection		Hiccup, continuous, self-recover				
	Over-current Protection		≥ 130%Io, self-recover				
Over-voltage Protection (Hiccup or clamp)	5/12/15/24/48V	≤ 6.3/16/25/35/60Vdc					
General Specifications	Operating Temperature		-40	--	+85	°C	
	Storage Temperature		-40	--	+85		
	Isolation (Input-Output)	Electric Strength Test for 1min., leakage current <5mA	4200	--	--	VAC	
	Insulation Resistance (Input-Output)	At 500VDC	100	--	--	MΩ	
	Storage Humidity	Non-condensing	--	--	95	%RH	
	Soldering Temperature	Wave-soldering	260 ± 5°C; time: 5 - 10s				
		Manual-welding	360 ± 10°C; time: 3 - 5s				
	Power Derating		-40°C to -25°C (85-200VAC Input)	4	--	--	% / °C
			+50°C to +70°C	2.5	--	--	
			+70°C to +85°C	1.67	--	--	
			85Vac - 100VAC	1.33	--	--	
			277Vac - 305VAC	0.71	--	--	
			2000m - 5000m	6.67	--	--	
	Altitude		--	--	5000	m	
Safety Class		CLASS II					
MTBF	MIL-HDBK-217F/25°C	≥ 500kHrs					
Cooling Method	Free air convection						
Mechanical Specification	Case Material	Black plastic, flame-retardant and heat-resistant (UL94V-0)					
	Dimensions/Weight	PCB	69.50 x 39.00 x 24.00 mm/100.0g (typ.)				
		Panel Mounting version	96.10 x 54.00 x 32.50 mm/147.0g (typ.)				
		Din Mounting version	96.10 x 54.00 x 37.10 mm/190.0g (typ.)				

Note: \*The "parallel cable" method is used for ripple and noise test, output parallel 10uF electrolytic capacitor and 1uF ceramic capacitor.



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## Electromagnetic Compatibility (EMC)

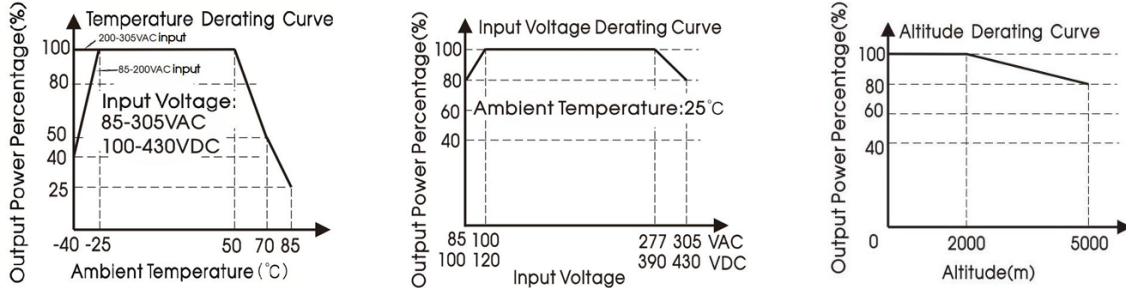
<b>Emissions (EMI)</b>	CE	CISPR32/EN55032	CLASS B	
	RE	CISPR32/EN55032	CLASS B	
<b>Immunity (EMS)</b>	ESD	IEC/EN 61000-4-2	Contact ±6KV/Air ±8KV	perf. Criteria A
	RS	IEC/EN 61000-4-3	10V/m	perf. Criteria A
	EFT	IEC/EN 61000-4-4	±2KV	perf. Criteria A
			±4KV (See Fig. 2 for recommended circuit)	perf. Criteria A
	Surge	IEC/EN 61000-4-5	line to line ±2KV	perf. Criteria A
			line to line ±2KV/line to PE ±4KV (See Fig. 2 for recommended circuit)	perf. Criteria A
	CS	IEC/EN 61000-4-6	10V r.m.s	perf. Criteria A
Voltage dip, short interruption and voltage variation	IEC/EN 61000-4-11		0%, 70%	perf. Criteria B

1. If the product is not operated within the required load range, the product performance cannot be guaranteed to comply with all parameters in the datasheet;
2. Unless otherwise specified, parameters in this datasheet were measured under the conditions of  $T_a=25^{\circ}\text{C}$ , humidity<75% with nominal input voltage and rated output load;
3. All index testing methods in this datasheet are based on our company corporate standards;
4. We can provide product customization service, please contact our technicians directly for specific information;
5. Products are related to laws and regulations: see "Features" and "EMC";
6. Our products shall be classified according to ISO14001 and related environmental laws and regulations, and shall be handled by qualified units.

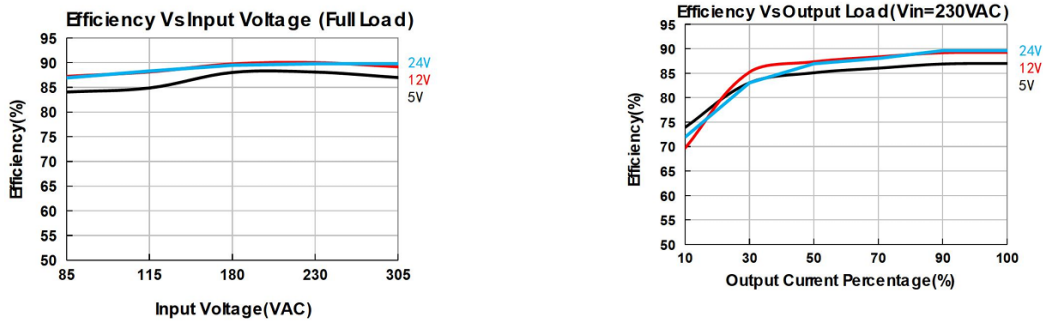


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## Characteristic Curve



Note: ① With an AC input between 85-100VAC/277-305VAC and a DC input between 100-120VDC/390-430VDC, the output power must be derated as per temperature derating curves;  
 ② This product is suitable for applications using natural air cooling.



## Design Reference PDM-40-xx-y

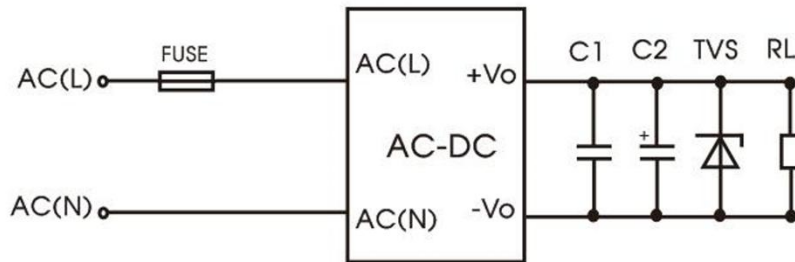


Fig. 1: Typical circuit diagram

Part No.	C1	C2	Fuse	TVS
PDM-40-05-y	1μF / 50V	330μF / 16V	3.15A / 300V, slow-blow, required	SMBJ7.0A
PDM-40-12-y		330μF / 16V		SMBJ20A
PDM-40-15-y		220μF / 25V		SMBJ20A
PDM-40-24-y		100μF / 35V		SMBJ30A
PDM-40-48-y		47μF / 63V		SMBJ64A

Output Filter Components: We recommend using an electrolytic capacitor with high frequency and low ESR rating for C2. Choose a capacitor voltage with at least 20% margin. C1 is a ceramic capacitor used for filtering high-frequency noise and TVS is recommended suppressor diode to protect the application in case of a converter failure.

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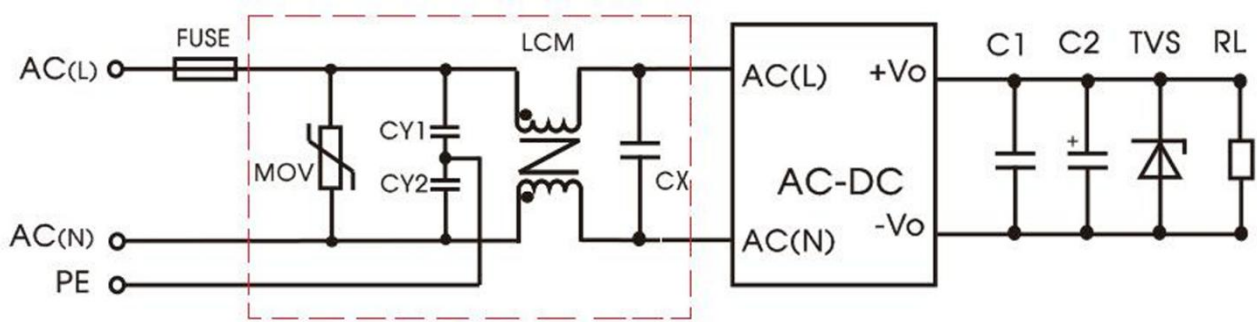
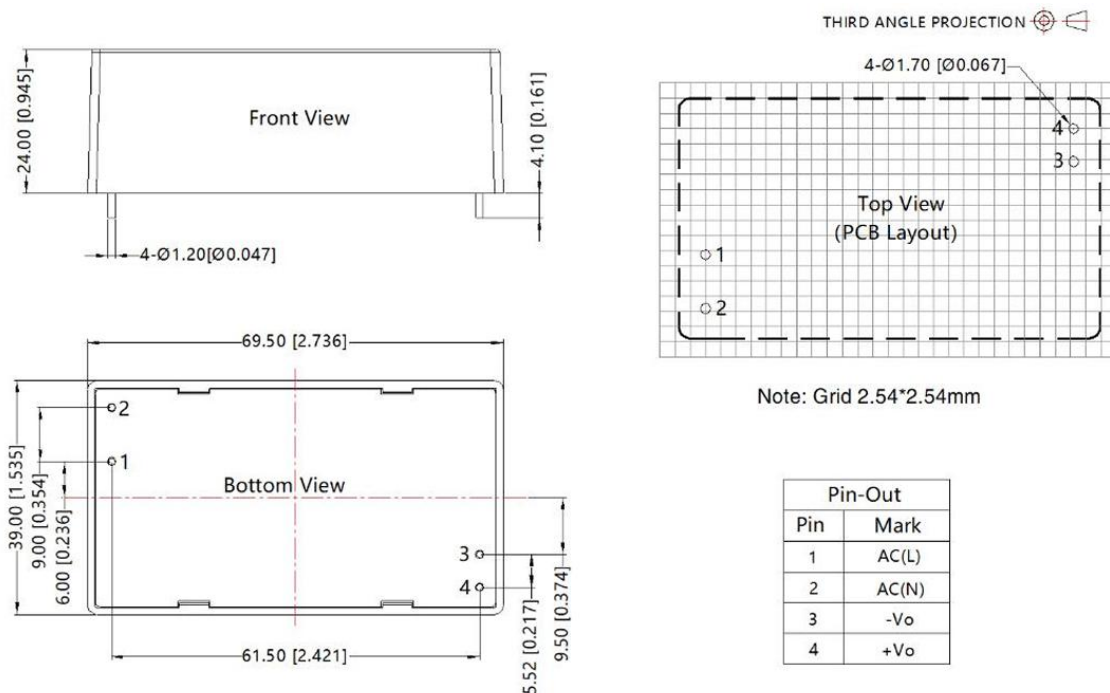


Fig. 2: EMC application circuit with higher requirements

Component	Recommended value
FUSE	3.15A/300V, slow-blow, required
MOV	S14K350
CY1/CY2	1nF / 400VAC
CX	684K / 310V
LCM	10mH

## Dimensions and Recommended Layout PDM-40-xx-y



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