

PMR05H Series



5W, Encapsulated DIP Package AC/DC Power Converters

Features

- ▶ Rated power: 5W Max
- ▶ Universal input: 85~305Vac 47~63Hz
- ▶ Regulated single output
- ▶ Isolation voltage 4000VAC
- ▶ Typical efficiency 74 ... 81%
- ▶ Energy saving, standby power only about 0.1W
- ▶ Operating temperature range: -40~+85°C
- ▶ RoHS compliance
- ▶ No external components required for operating
- ▶ Over voltage, over current and short circuit protection
- ▶ Certified to UL62368-1, IEC/EN62368-1, CISPR32, EN55032 Class B
- ▶ 3 year warranty



Overview

PMR05H series are compact size AC/DC power converters, featuring universal input voltage range, low stand by power consumption, high efficiency. Designed for high reliability industrial applications, these converters are encapsulated to protect from dust and moisture. They are certified to UL62368-1, IEC/EN62368-1, and EMC performance meets CISPR32, EN55032 Class B without support from any external components, ideally suitable for industrial, and critical commercial applications.

Model Numbers

Model Number	Input Voltage [VAC]	Output Voltage [VDC]	Output Current [mA] Max.	Ripple & Noise [mVp-p] Max.	Efficiency [%] Typ.	Capacitive Load [uF] Max.
PMR05H-033	85~305VAC 100~430VDC	3.3	1250	200	74	4000
PMR05H-050		5	1000	200	78	3000
PMR05H-090		9	555	200	79	1200
PMR05H-120		12	416	200	80	1200
PMR05H-150		15	333	200	80	680
PMR05H-240		24	208	200	81	220

* Only typical models are listed, other models may be available, upon request.

Electrical Specifications

Unless otherwise indicated, specifications are measured at $T_A=25^{\circ}\text{C}$, humidity<75%, nominal input voltage and rated output load.

Parameters	Condition	Min.	Typ.	Max.	Unit	Note
Input voltage range	AC in	85	-	305	VAC	
	DC in	100	-	430	VDC	
Input frequency		47	-	63	Hz	
Nominal input voltage		100	-	277	VAC	
Input current	115VAC 230VAC	-	-	0.13 0.07	A	
Inrush current Cold start	115VAC 230VAC	-	35 70	-	A	
Leakage current	230VAC, 50Hz	-	0.25	0.6	mA RMS	
Output voltage accuracy		-	± 3	-	%	
Line regulation Full load		-	± 0.5	-	%	
Load regulation $I_{OUT}=0\%\sim 100\%$ of $I_{OUT, rated}$		-	± 1.0	-	%	
Ripple and noise 20MHz bandwidth, peak to peak		-	150	200	mV	
Temperature coefficient		-	± 0.03	-	%/ $^{\circ}\text{C}$	
Standby power consumption		-	0.10	-	W	
Hold up time Full load	115VAC 230VAC	-	10 50	-	mS	
Over load protection		115	-	190	% $I_{OUT, rated}$	
Over voltage protection	$V_{OUT}=3.3, 5\text{V}$ $V_{OUT}=9, 12\text{V}$ $V_{OUT}=15\text{V}$ $V_{OUT}=24\text{V}$	-	-	8.5 20.0 24.0 34.0	VDC	
Short circuit protection		Hiccup mode, automatic recovery				
Internal fuse		2A, 300V, slow blow				
Minimum load		No minimum load is required				

* Ripple and noise measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.

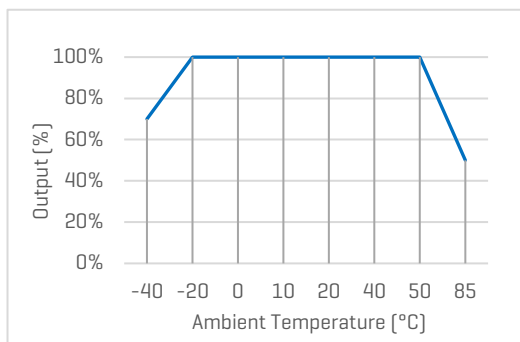
General Specifications

Parameters	Condition	Min.	Typ.	Max.	Unit	Note
Isolation voltage Tested for 1 minute	I/P to O/P	4000	-	-	VAC	
Isolation resistance 500VDC, 25°C, 70%RH	I/P to O/P	100	-	-	M Ohm	
Switching frequency		-	65	-	KHz	
Operating temperature range	See "Derating Curve"	-40	-	85	°C	
Storage temperature		-40	-	105	°C	
Storage humidity		10	-	95	%RH	
Maximum case temperature		-	-	95	°C	
Case material		Black plastic UL94-V0				
Cooling method		Free air convection				
Soldering temperature	Wave soldering	260°C, 5~10 seconds				
Vibration		10Hz to 55Hz, 5G, 30 minutes along X, Y and Z axis				
Class II power		Yes, no FG				
MTBF	MIL-HDBK-217F	> 300,000 Hours, 25°C				
Design based on standards		RoHS5 compliant, all materials meet UL94V-0, product designed to meet UL62368-1, IEC/EN62368-1, EN55032				
Safety certifications		IEC/EN62368-1, UL62368-1				
EMC		CISPR32, EN55032 Class B with NO external circuit IEC/EN61000-4-2, 3, 4, 5, 6, 8, 11				
Size, and Weight		45.7x25.4x21.5mm, 37g				
Packing		350pcs/carton, size: 460x350x285mm, 14Kg G.W.				

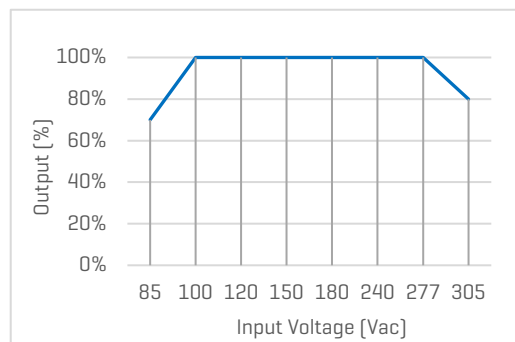
Characteristic Curves

Derating Curves

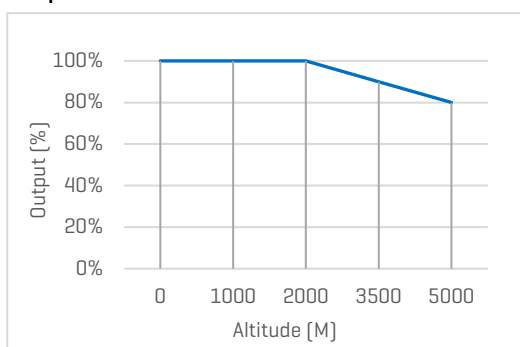
Output vs Ambient Temperature



Output vs Input Voltage



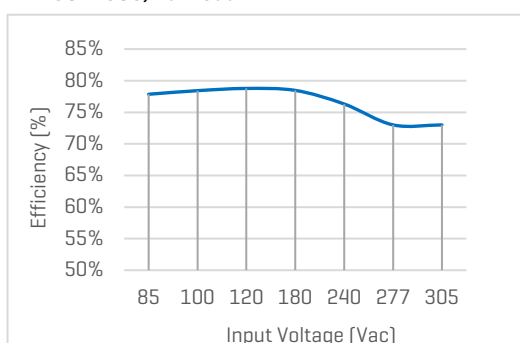
Output vs Altitude



Efficiency Curves

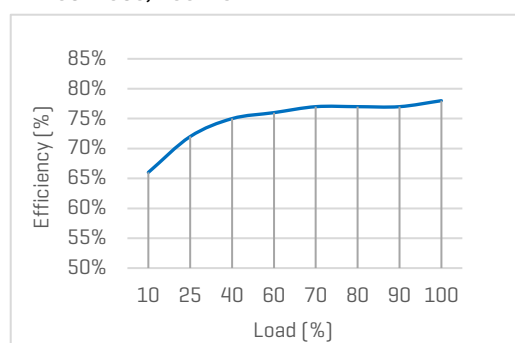
Efficiency vs Input Voltage

PMR05H-050, Full load

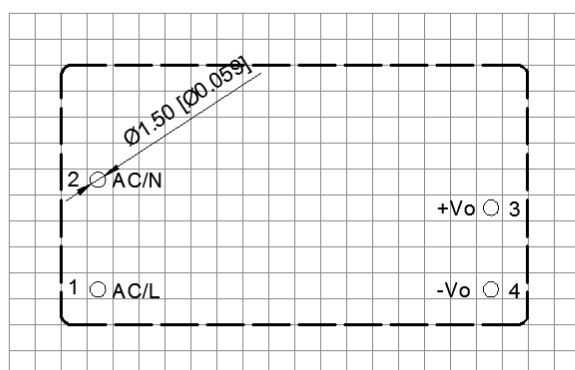
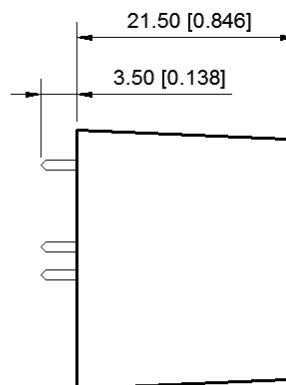
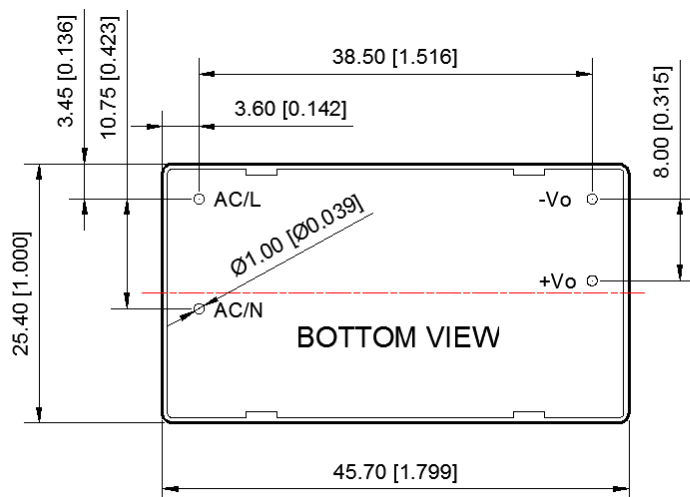


Efficiency vs Load

PMR05H-050, 230VAC



Mechanical Specifications



Recommended Footprint

Pin Definition

Pin #	Single Out
1	AC [L]
2	AC [N]
3	+V _{OUT}
4	-V _{OUT}

* Unless otherwise specified unit: mm [inch]

* General tolerance: ± 1.00 [± 0.040]

* Pin thickness: ± 0.15 [± 0.006]

* Pin distance: ± 0.50 [± 0.020]

* Footprint grid 2.54 x 2.54 mm

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