

PMR20H Series

20W, Encapsulated DIP Package AC/DC Power Converters



Features

- Rated power: 20W Max
- Universal input: 85~305VAC, 47~63Hz
- Regulated single output
- Isolation voltage 4000VAC
- Typical efficiency 81 ... 87%
- Energy saving, standby power only less than 0.1W
- Operating temperature range: -40~+85°C
- RoHS compliance
- No external components required for operating
- Over voltage, over current and short circuit protection
- Meet IEC/EN/UL62368-1, OVC III, EN60335-1, EN61558-1, FCC, UKCA, CISPR32, EN55032 Class B with NO externals
- 3 year warranty



Overview

PMR20H 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 meet IEC/EN/UL62368-1, OVC III, EN60335-1, EN61558-1, UKCA and EMC performance meet 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.	Efficiency [%] Typ.	Capacitive Load [uF] Max.
PMR20H-033	85~305VAC 100~430VDC	3.3	4500	81	8000
PMR20H-050		5	4000	85	8000
PMR20H-090		9	2200	85	5400
PMR20H-120		12	1670	86	4000
PMR20H-150		15	1330	87	3000
PMR20H-240		24	830	87	1000

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

PMR20H Series

20W, Encapsulated DIP Package AC/DC Power Converters



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	-	-	0.5 0.3	A	
Inrush current Cold start	115VAC 230VAC	-	20 45	-	A	
Leakage current	277VAC, 50Hz	-	-	0.1	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		-	100	150	mV	
Temperature coefficient		-	± 0.03	-	%/ $^{\circ}\text{C}$	
Standby power consumption		-	0.1	-	W	
Hold up time Full load	115VAC 230VAC	-	10 50	-	mS	
Over voltage protection Hiccup or clamping by zener diode	$V_{OUT}=3.3, 5\text{V}$ $V_{OUT}=9\text{V}$ $V_{OUT}=12, 15\text{V}$ $V_{OUT}=24\text{V}$	-	-	7.5 15 20 30	VDC	
Over current protection	Automatic recovery	110	-	-	% I_{OUT}	
Short circuit protection		Continuous, hiccup mode, automatic recovery				
Minimum load		No minimum load is required				
Built in fuse		3.15A, 300V slow blow				

* 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.

PMR20H Series

20W, Encapsulated DIP Package AC/DC Power Converters



General Specifications

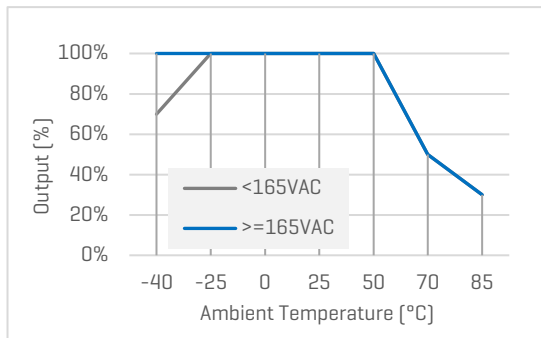
Parameters	Condition	Min.	Typ.	Max.	Unit	Note
Isolation voltage Tested for 1 minute	I/P to O/P	4000	-	-	VAC	
Isolation resistance 500VDC, 25°C, 70%RH	I/P to O/P	100	-	-	M Ohm	
Switching frequency		-	65	-	KHz	
Operating temperature range	See "Derating Curve"	-40	-	85	°C	
Storage temperature		-40	-	105	°C	
Storage humidity		10	-	95	%RH	
Maximum case temperature		-	-	95	°C	
Soldering temperature	5 seconds	-	260	-	°C	
Case material		Black plastic UL94-V0				
Cooling method		Free air convection				
Class II power		Yes, no FG				
Vibration		10Hz to 55Hz, 5G, 30 minutes along X, Y and Z axis				
MTBF	MIL-HDBK-217F	> 1,000,000 Hours, 25°C				
Design based on standards		RoHS & REACH directives, IEC/EN/UL 62368-1, OVC III, EN 60335-1, EN 61558-1, UKCA				
Safety certifications		IEC/EN/UL 62368-1, EN 60335-1, EN 61558-1, FCC, UKCA				
EMC	CE ESD RS EFT Surge CS DIP	CISPR32, EN55032 Class B with "NO External Circuit" IEC/EN61000-4-2, Contact ±6kV, Air ±8kV, Criteria B IEC/EN61000-4-3, 10V/m, Criteria A IEC/EN61000-4-4, ±2kV, Criteria B IEC/EN61000-4-5, Line to Line ±2kV, Criteria B IEC/EN61000-4-6, 10Vrms, Criteria A IEC/EN61000-4-11, 0%, 70%, Criteria B				
Size, and Weight		52.4x27.2x24mm, 55g				
Packing		200pcs/Carton, size: 335x345x210mm, 12.5Kg G.W.				

Characteristic Curves

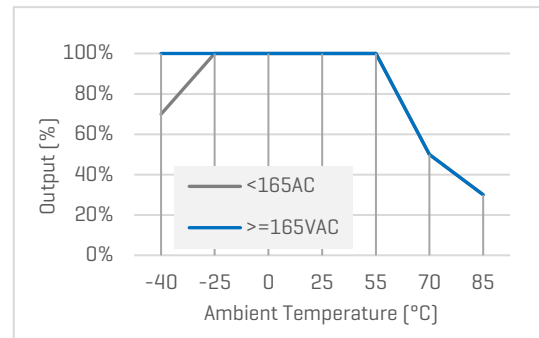
Derating Curves

Output vs Ambient Temperature

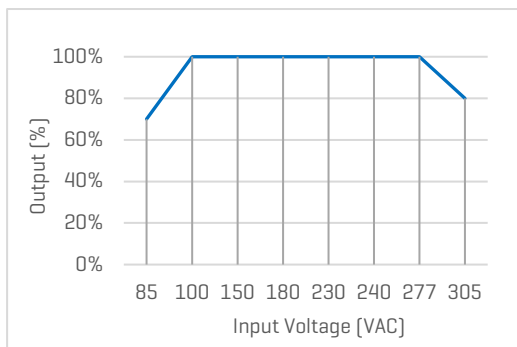
$V_{OUT}=3.3 \dots 9V$



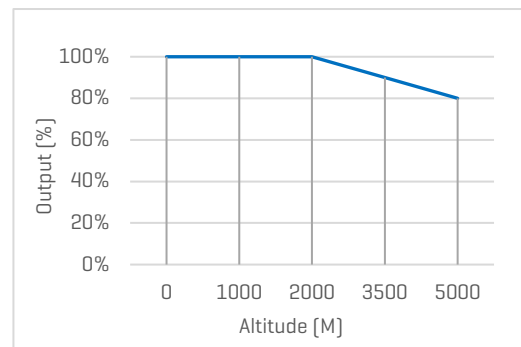
$V_{OUT}=12 \dots 24V$



Output vs Input Voltage

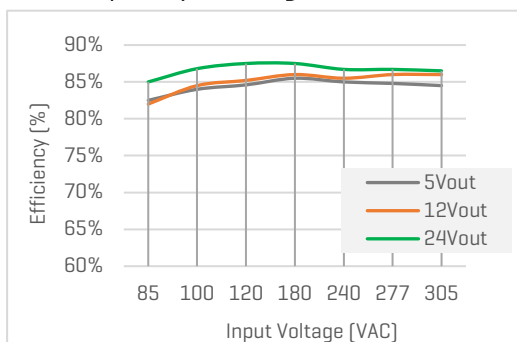


Output vs Altitude

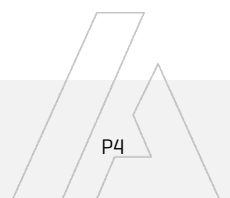
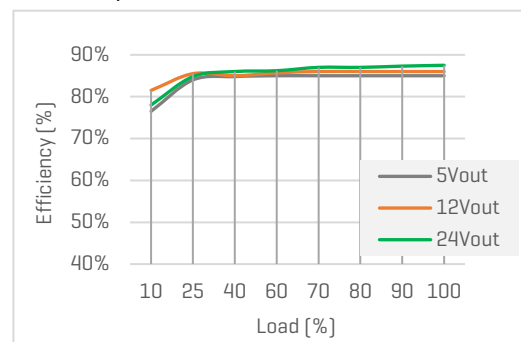


Efficiency Curves

Efficiency vs Input Voltage



Efficiency vs Load

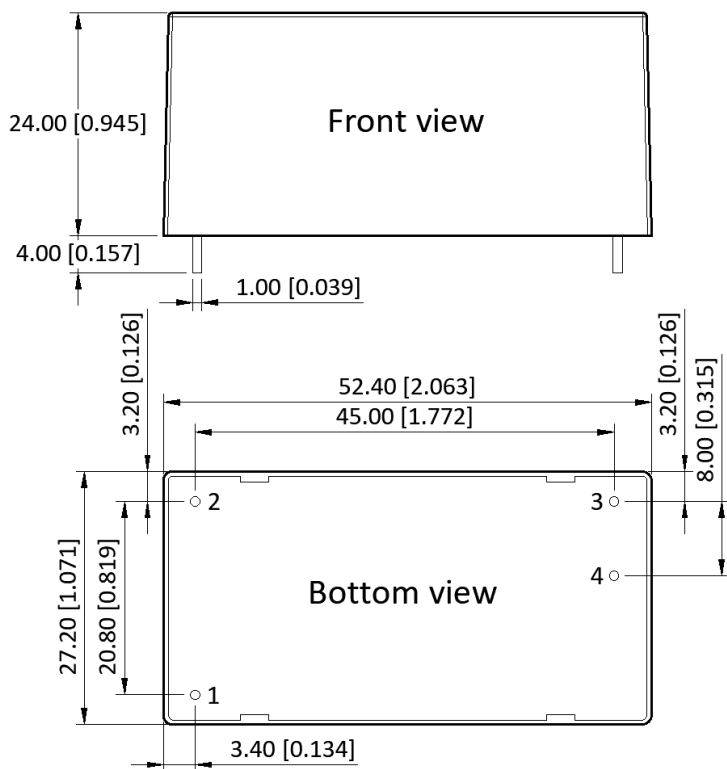


PMR20H Series

20W, Encapsulated DIP Package AC/DC Power Converters



Mechanical Specifications



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