

PMR03D Series

3W, Encapsulated DIP Package AC/DC Power Converters

Features

- ▶ Rated power: 3W
- ▶ Universal input: 85~305VAC 47~63Hz
- ▶ Regulated single output
- ▶ Isolation voltage 4000VAC
- ▶ Typical efficiency 72 ... 80%
- ▶ Energy saving, standby power only less than 0.1W
- ▶ Operating temperature range: -40~+70°C
- ▶ RoHS compliance
- ▶ Compact 1"x1" package
- ▶ Low profile 15mm height
- ▶ Over voltage, over current and short circuit protection
- ▶ *Meet IEC/EN/UL 62368-1, EN60335, EN61558, UKCA
- ▶ Meet CISPR32, EN55032 Class B
- ▶ 3 year warranty



* Certification is pending

Model Numbers

Model Number	Input Voltage [VAC]	Output Voltage [VDC]	Output Current [mA] Max.	Efficiency [%] Typ.	Capacitive Load [uF] Max.
PMR03D-033	85~305VAC 100~430VDC	3.3	900	72	4000
PMR03D-050		5	600	78	3000
PMR03D-090		9	333	79	1200
PMR03D-120		12	250	80	1200
PMR03D-150		15	200	80	680
PMR03D-240		24	125	80	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	-	-	0.08	A	
	230VAC	-	-	0.06	A	
Inrush current Cold start	115VAC	-	15	-	A	
	230VAC	-	25	-	A	
Leakage current	277VAC, 50Hz	-	-	0.25	mA RMS	
Output voltage accuracy	$V_{OUT}=3.3\text{V}$	-	± 3	-	%	
	Others	-	± 2	-	%	
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		-	50	100	mV	
Temperature coefficient		-	± 0.02	-	%/ $^{\circ}\text{C}$	
Standby power consumption	230VAC	-	0.1	-	W	
Hold up time Full load	115VAC	-	5	-	mS	
	230VAC	-	50	-	mS	
Over voltage protection Hiccup or clamping by Zener diode	$V_{OUT}=3.3 \dots 12\text{V}$	-	-	16	VDC	
	$V_{OUT}=15\text{V}$	-	-	20	VDC	
	$V_{OUT}=24\text{V}$	-	-	30	VDC	
Over current protection	Automatic recovery	130	-	-	% I_{OUT}	
Short circuit protection		Continuous, hiccup mode, automatic recovery				
Recommended external fuse		1A, 300V, slow blow, *required*				
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 1uF ceramic capacitor and a 10uF electrolytic capacitor in parallel.

General Specifications

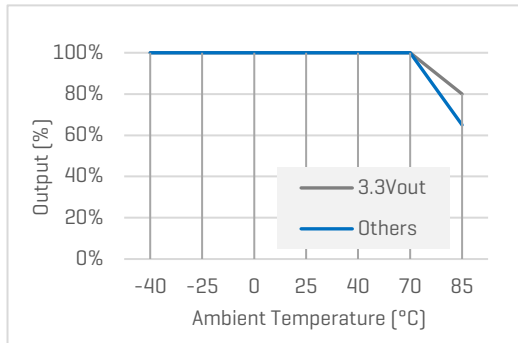
Parameters	Condition	Min.	Typ.	Max.	Unit	Note
Isolation voltage 1 minute, leakage current 5mA max	I/P to O/P	4000	-	-	VAC	
Isolation resistance 500VDC, 25°C, 70%RH	I/P to O/P	100	-	-	M Ohm	
Switching frequency		-		-	KHz	
Operating temperature range	See "Derating Curve"	-40	-	70	°C	
Storage temperature		-40	-	105	°C	
Storage humidity		10	-	95	%RH	
Operating altitude		-	-	5000	m	
Soldering temperature	Wave Manual	-	260 360	-	°C	
Case material		Black plastic UL94-V0				
Cooling method		Free air convection				
Vibration		10Hz to 55Hz, 10G, 30 minutes along X, Y and Z axis				
Class II power		Yes, no FG				
MTBF	MIL-HDBK-217F	> 2,602,000 Hours, 25°C				
Design based on standards		RoHS5 compliant, IEC/EN/UL62368-1, EN60335, EN61558, UKCA				
Safety certifications*		UL/EN/IEC 62368, EN60335, EN61558				
EMC		CISPR32, EN55032 Class B with NO external component				
Size, and Weight		25.4 x 25.4 x 15 mm, 16g				

* Certification is pending

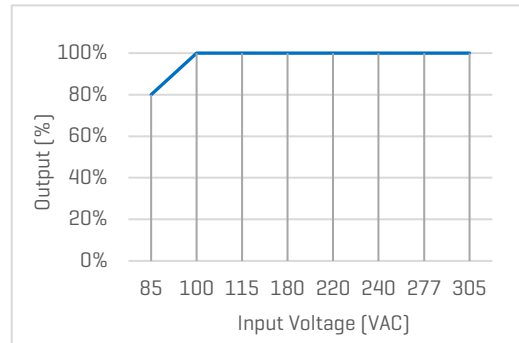
Characteristic Curves

Derating Curves

Output vs Ambient Temperature



Output vs Input Voltage



Recommended External Circuits

Typical External Circuit

Components with "" are required. The other components are highly recommended.

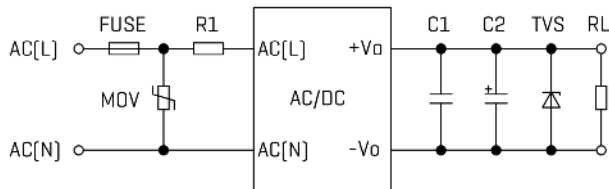


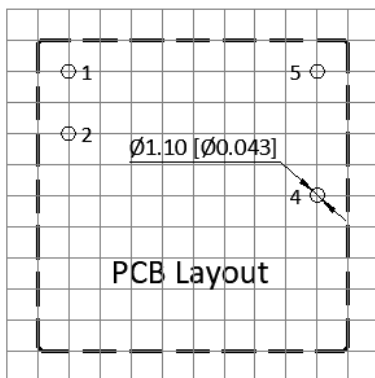
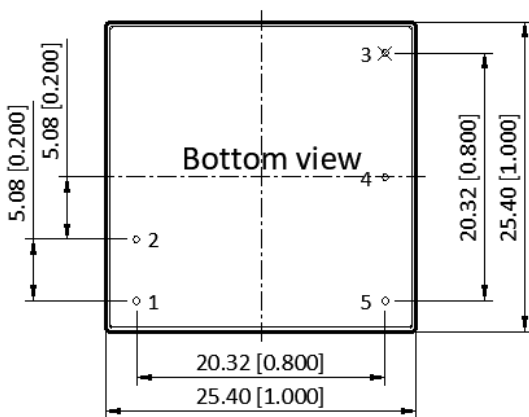
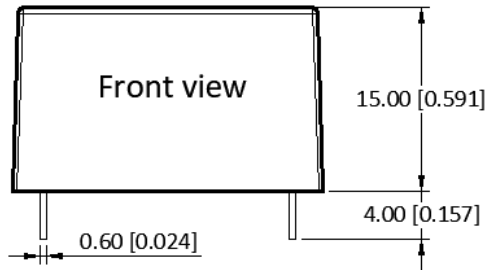
Figure 1. Typical external circuit

Recommended Components [Table 1]

SPEC	FUSE*	MOV	R1*	C1	C2	TVS
$V_{out}=3.3, 5V$	2A, 300V	S14K350	33 Ohm, 3W	1uF, 50V	150uF	SMBJ7.0A
$V_{out}=9V$	2A, 300V	S14K350	33 Ohm, 3W	1uF, 50V	120uF	SMBJ12A
$V_{out}=12, 15V$	2A, 300V	S14K350	33 Ohm, 3W	1uF, 50V	120uF	SMBJ20A
$V_{out}=24V$	2A, 300V	S14K350	33 Ohm, 3W	1uF, 50V	68uF	SMBJ30A

* For further questions contact one of our sales representatives.

Mechanical Specifications



Pin Definition

Pin #	Single Out
1	AC [N]
2	AC [L]
3	No Pin
4	-V _{OUT}
5	+V _{OUT}

* Unless otherwise specified unit: mm [inch]

* General tolerance: ± 0.50 [± 0.020]

* Pin thickness: ± 0.15 [± 0.006]

* Pin distance: ± 0.50 [± 0.020]

* Footprint grid 2.54 x 2.54 mm

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