

MPE-15SV Series

Single Output, 15W Wide-Input, Enclosed AC/DC Power Supplies



Key Features:

- 15W Output Power
- Universal 85-305 VAC In.
- UL 62368 Approval
- -30°C to 70°C Operation
- Reinforced Insulation
- Meets EN 55032 B
- Meets EN 60335
- Meets EN 61558
- >700 kHour MTBF
- Low Cost



RoHS



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Electrical Specifications

Specifications typical @ +25°C, nominal input voltage & rated output current, unless otherwise noted. Specifications subject to change without notice.

Input		Min.	Typ.	Max.	Units
Parameter	Conditions				
Input Voltage Range		85		305	VAC
		100		430	VDC
Input Frequency		47		63	Hz
Input Current	See Model Selection Guide				
Input Voltage Surge	5s			3,335	VAC
Leakage Current	277 VAC			0.50	mA
Inrush Current, Cold Start	115 VAC		30		A Pk
	230 VAC		50		
Output		Min.	Typ.	Max.	Units
Parameter	Conditions				
Output Voltage Accuracy	3.3V Output		±3.0		%
	5V Output		±2.0		
	All Other Outputs		±1.0		
Line Regulation, At Rated Load	3.3 & 5V Outputs		±1.0		%
	All Other Outputs		±0.5		
Load Regulation, 0 - 100% Load	3.3 & 5V Outputs		±1.0		%
	All Other Outputs		±0.5		
Ripple & Noise (20 MHz), See Note 1	3.3 & 5V Output			80	mV
	12 & 15V Outputs			120	
	24 & 48V Outputs			150	
Hold-Up Time	115 VAC		7		mSec
	230 VAC		48		
Temperature Coefficient			±0.03		%/°C
Standby Power Consumption			0.30	0.50	W
Over Current Protection	Autorecovery	110		200	%IOUT
Short Circuit Protection, See Note 2	Continuous (Autorecovery)				
General		Min.	Typ.	Max.	Units
Parameter	Conditions				
Isolation Voltage, See Note 3	Input to Output	4,000			VAC
	Input to Ground	2,000			
	Output to Ground	1,250			
Insulation Resistance	See Note 4	100			MΩ
Switching Frequency			65		kHz
EMI See Page 2					
Environmental		Min.	Typ.	Max.	Units
Parameter	Conditions				
Operating Temperature Range	Ambient	-30	+25	+70	°C
Storage Temperature Range		-40		+85	°C
Cooling	Free Air Convection (See Derating Curves)				
Humidity, Operating	RH, Non-condensing	20		90	%
Physical		Min.	Typ.	Max.	Units
Parameter	Conditions				
Size	See Mechanical Drawing (Page 4)				
Case Material	Metal (AL5052, SGCC)				
Conformal Coating, See Note 7	Option Available For Use In Harsh Environments				
Weight	3.17 Oz (90g)				
Reliability Specifications		Min.	Typ.	Max.	Units
Parameter	Conditions				
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	700			kHours
Safety Standards	UL/cUL 62368-1 recognition (UL certificate)				
Safety Class	Class I				
Overvoltage Class	Class III (EN 61558)				

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Model Number	Input		Output					Over Voltage Protection (VDC) See Note 5	Max Output Capacitance (μF)	Efficiency (% Typ)
	Current (A Max)		Voltage (VDC)	Adjust Range (VDC)	Current (A)		Power (W)			
	115 VAC	230 VAC			Rated	% Min.				
MPE-15SV-03	0.35	0.25	3.3	2.85 - 3.60	3.00	0.00	9.9	6.75	3,000	73
MPE-15SV-05	0.35	0.25	5.0	4.50 - 5.50	3.00	0.00	15	6.75	2,400	78
MPE-15SV-12	0.35	0.25	12.0	10.8 - 13.2	1.30	0.00	15.6	16.20	1,800	82
MPE-15SV-15	0.35	0.25	15.0	13.5 - 18.0	1.00	0.00	15	21.80	1,200	82
MPE-15SV-24	0.35	0.25	24.0	21.6 - 28.8	0.625	0.00	15	33.60	600	83
MPE-15SV-48	0.35	0.25	48.0	42.0 - 54.0	0.32	0.00	15.36	60.00	300	83

EMI/RFI

Parameter	Standard	Criteria	Level
Radiated Emissions	CISPR 32/EN 55032		Class B
Conducted Emissions	CISPR 32/EN 55032		Class B
ESD	EN 61000-4-2	A	±6 kV Contact ±8 kV Air
RS	EN 61000-4-3	A	10V/m
EFT	EN 61000-4-4	A	±2 kV
Surge	EN 61000-4-5	A	±1 kV L-L ±2 kV L-G
CS	EN 61000-4-6	A	10 Vrms
Voltage Dips	EN 61000-4-11	B	0% - 70%

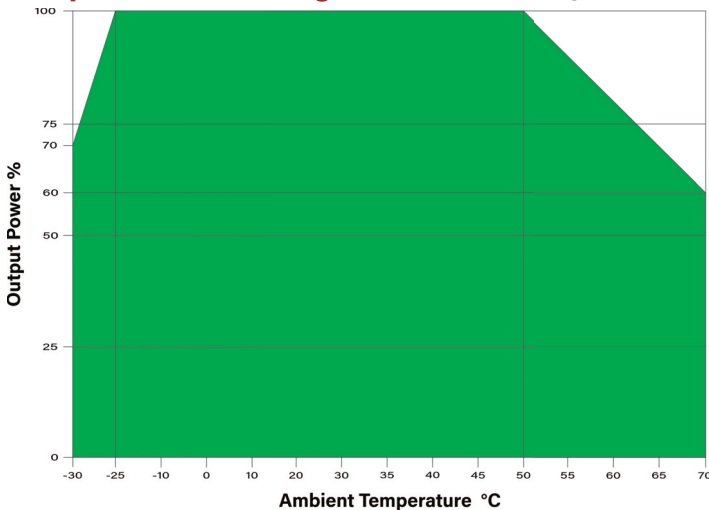
Notes:

1. Output ripple is measured at 20 MHz bandwidth using 0.1 μF and 10 μF capacitors connected in parallel as close to the power supply terminals as possible.
2. Output short circuit protection is provided by a "hiccup mode" circuit. The unit recovers <5 seconds after the fault condition is removed.
3. Input-output, input-ground and output-ground isolation are tested for 60 seconds with a leakage current of <10 mA.
4. Insulation resistance is given for input - output, input - ground and output - ground. It is tested at 500 VDC.
5. After an overvoltage fault the unit will recover automatically.
6. All units include an on-board slow blow fuse.
7. For use in harsh environments such as exposure to a salt or chemical spray or high humidity the unit is available conformally coated.

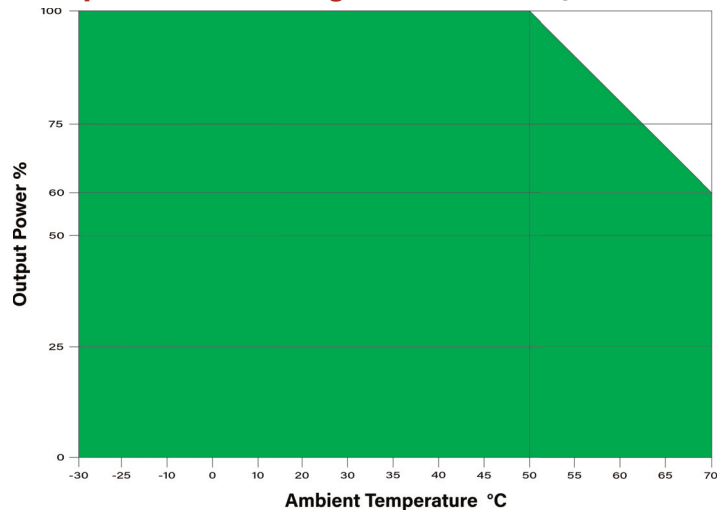
For a Terminal Strip Cover, add the suffix "TC" to the part number:
(i.e. MPE-15SV-12TC)

For Conformal Coating, add the suffix "CC" to the part number:
(i.e. MPE-15SV-15CC)

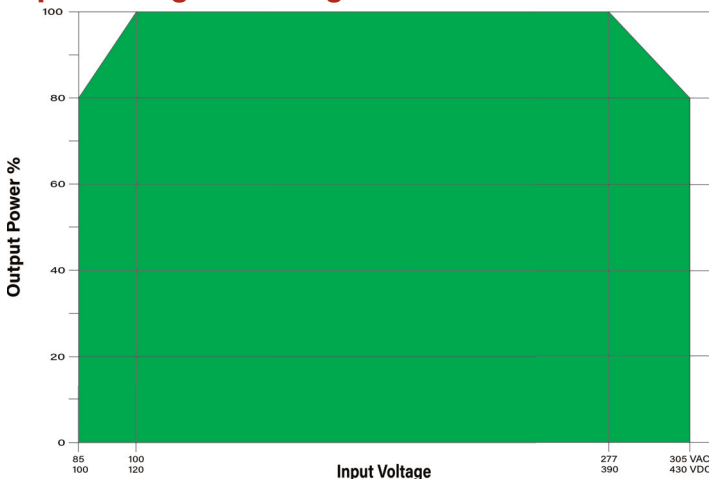
Temperature Derating: Under 100 VAC Input



Temperature Derating: Over 100 VAC Input

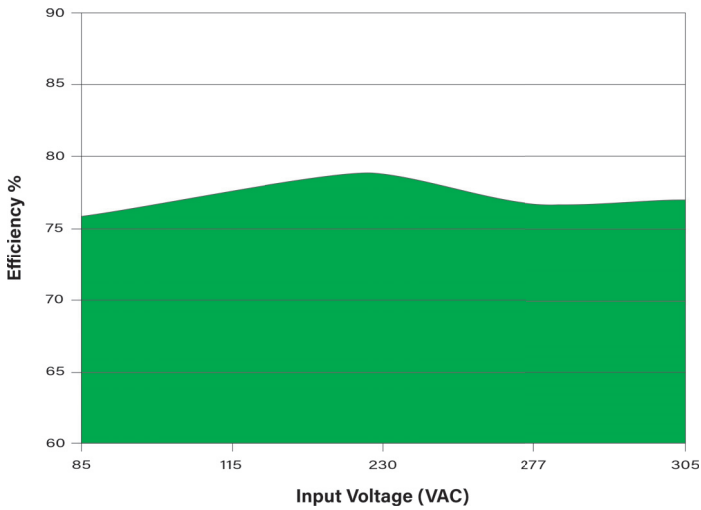


Input Voltage Derating

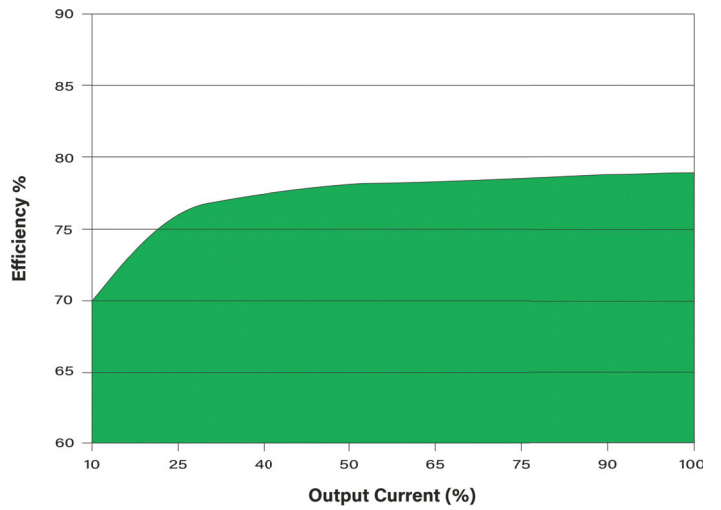


MPD offers a very wide variety of AC/DC power supplies. Our product line now includes a full range of enclosed units that combine industrial packaging, high performance features, application flexibility, and low cost. Models are available now over a power range of 15W to 320W.

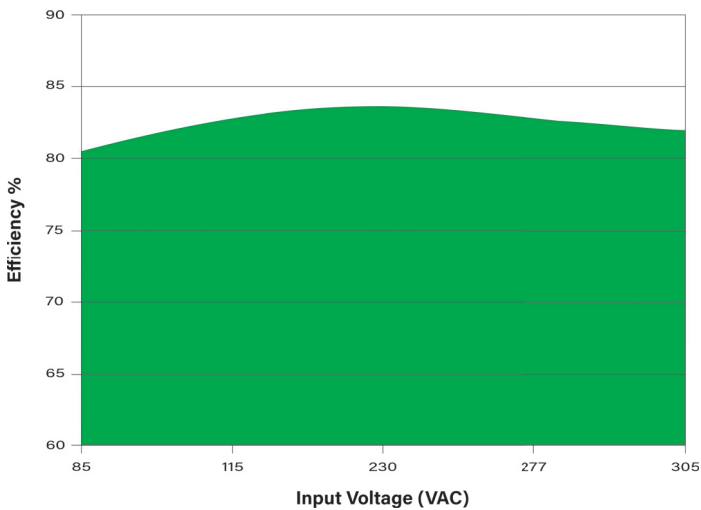
Efficiency vs Input Voltage: 5 V_{OUT}



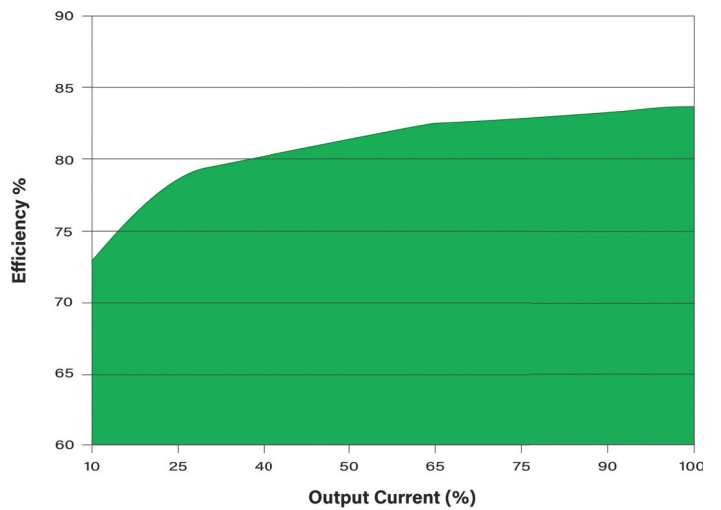
Efficiency vs Output Load: 5 V_{OUT}



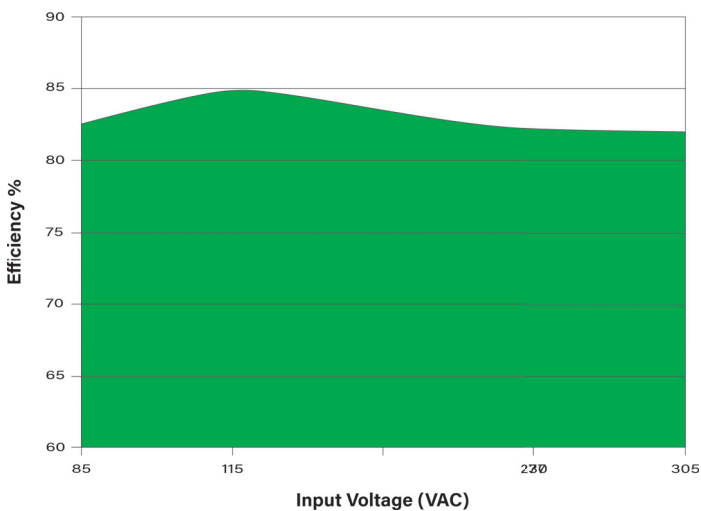
Efficiency vs Input Voltage: 12 V_{OUT}



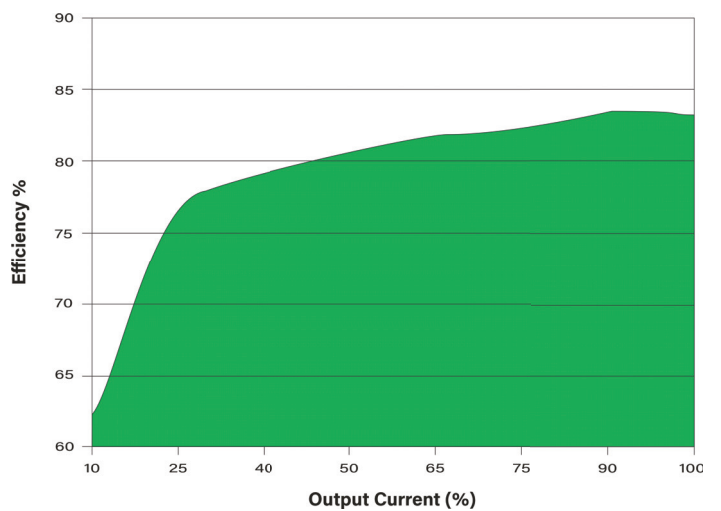
Efficiency vs Output Load: 12 V_{OUT}



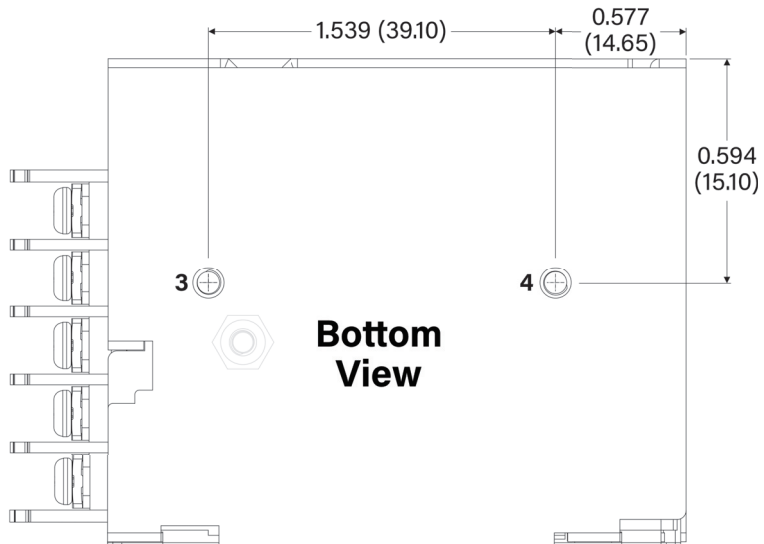
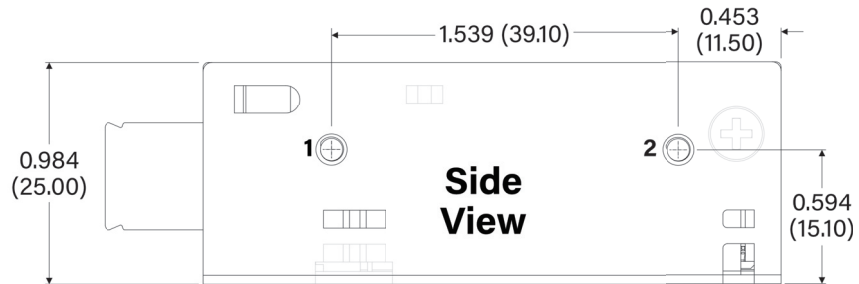
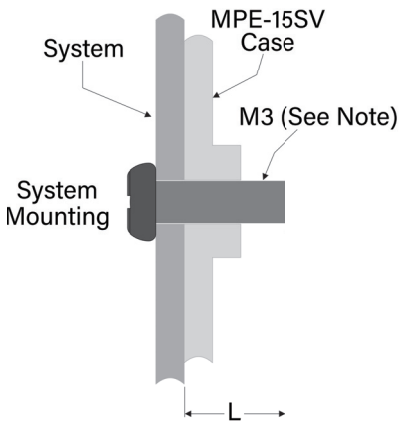
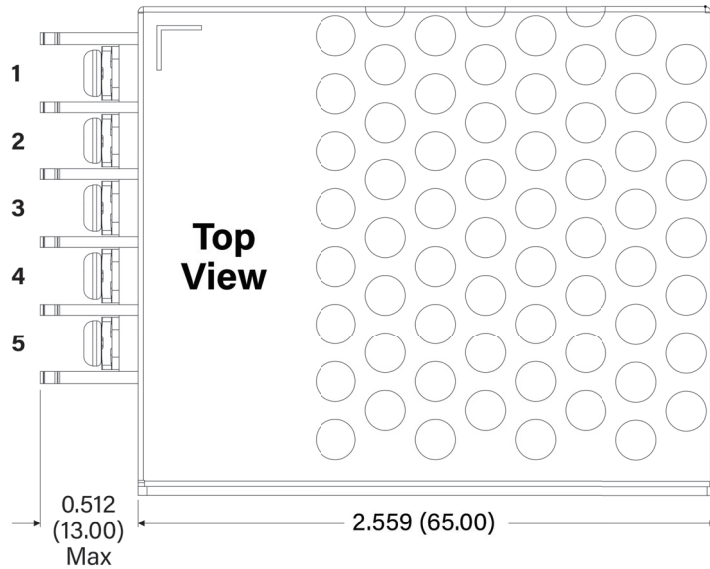
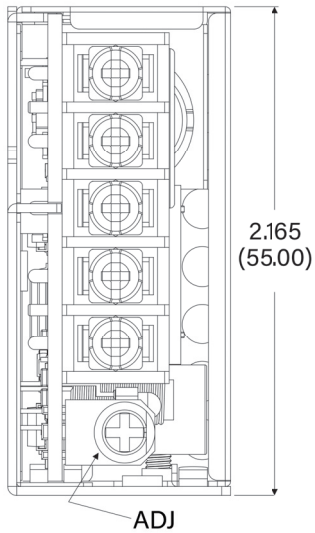
Efficiency vs Input Voltage: 24 V_{OUT}



Efficiency vs Output Load: 24 V_{OUT}



End View



Connections

- Wire range - 22 -14 AWG
- Tightening Torque: M3, 0.4 N·m

Pin	Function
1	AC-Line
2	AC-Neutral
3	Ground
4	-VOUT
5	+VOUT

The unit should be connected to PE before operating. This connection can be made at any position (1 to 4) as shown on the mechanical diagram. See the mechanical and system mounting diagrams at left and above.

Position	Screw	Max L	Max Torque
1, 2	M3	4 mm	0.4N·m
3, 4	M3	3 mm	0.4N·m

Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ± 0.039 (± 1.00)



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