MPE-350C

350W, High Isolation AC/DC Power Supplies

Key Features:

- 350W Output Power
- Selectable AC Input Range
- Up To 5000m Altitude
- 3,000 VAC Isolation
- Efficiency to 88.5%
- -30°C to +70°C Temp
- Meets EN 55032 A
- >300 kHour MBTF
- UL62368 Approval

Electrical Specifications

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

Input

Parameter	Conditions		Min.	Typ.	Max.	Units
Input Voltage Range	AC Input	Low Voltage (switch position 115)	90		132	VAC
		High Voltage (switch position 230)	180		264	
	DC Input	Switch position 230	240		370	VDC
Input Frequency			47		63	Hz
Input Current		115 VAC		6.8	8.0	A
		230 VAC		3.4	4.0	
Inrush Current (Cold Start)		115 VAC		60		A
		230 VAC		60		
Leakage Current		240 VAC			0.75	mA

Output

Parameter	Conditions		Min.	Typ.	Max.	Units
Output Voltage Accuracy	Full Load Range	5V Output		±3		%
		12V Output		±1.5		
		15, 24, 36, 48V Outputs		±1.0		
Line Regulation	Rated Load			±0.5		%
Load Regulation	0-100% Load	5V Output		±2		%
		12V Output		±1		
		15, 24, 36, 48V Outputs		±0.5		
Ripple & Noise, See Note 1	20 MHz	5, 12, 15, 24V Outputs			150	mV P - P
		36, 48V Outputs			200	
Hold-Up Time		115 VAC		12		ms
		230 VAC		16		
Standby Power Consumption	230 VAC, 25°C				1	W
Temperature Derating	+50°C to +70°C		2			%/°C
Input Voltage Derating	90 - 100 VAC		2			%/VAC
Temperature Coefficient				±0.02		%/°C
Short Circuit Protection	Recovery time <8s after short circuit removed		Hiccup, Continuous, Self-Recovery			
Over Current Protection			110		180	%Io
Over Temperature Protection			Hiccup, Self-Recover			

General

Parameter	Conditions		Min.	Typ.	Max.	Units
Isolation Voltage	Input - Ground	Leakage <3 mA	2,000			VAC
	Input - Output	Leakage <5 mA	3,000			
	Output - Ground	Leakage <3 mA	500			
Isolation Resistance		See Note 6	100			MΩ
Switching Frequency				65		kHz

EMI Characteristics

Parameter	Standard	Criteria	Level
Radiated Emissions, See Page 3	CISPR32/EN 55032		Class A
Conducted Emissions	CISPR32/EN 55032		Class A

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-30		+70	°C
Storage Temperature Range		-40		+85	°C
Cooling	Forced Air Cooling				
Operating Humidity	Non-condensing	20		90	%RH
Storage Humidity		10		95	

Physical

Case Size	8.46 x 4.53 x 1.18 in (See Mechanical Drawing on Page 4)
Case Material	Metal (AL1100, SGCC)
Weight	24.69 oz (700g) (See Mechanical Drawing on Page 4)

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	0.3			MHours
Safety Standards	UL/cUL 62368-1 Recognition (UL Certificate)				
Safety Class	Class I				

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MICROPOWER DIRECT

Model Selection Guide

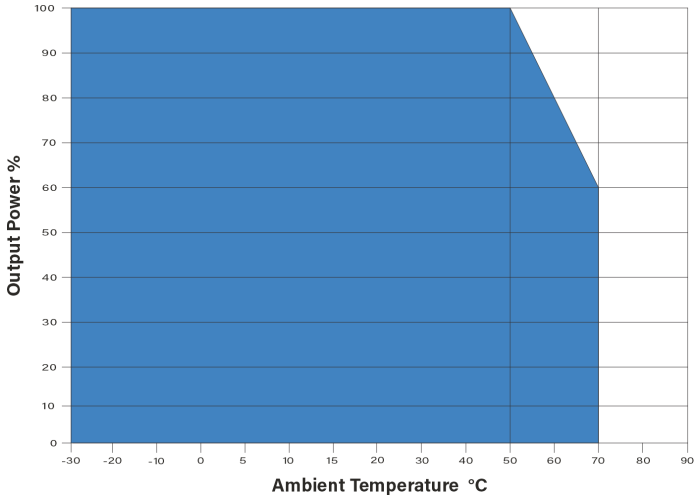
Model Number	Input		Output						
	Current (mA) (Max)		Voltage (VDC)	Voltage Adjustable Range (VDC)	Current (A, Max)	Power (W)	Over Voltage Protection (VDC)	Output Capacitive Load (μF Max)	Efficiency (%, Typ)
	115 VAC	230 VAC							
MPE-350C-05	8000	4000	5	4.5 - 5.5	60	300	5.75 - 6.75	10000	83.5
MPE-350C-12	8000	4000	12	10.2 - 13.8	29	348	13.8 - 16.2	4000	85
MPE-350C-15	8000	4000	15	13.5 - 18	23.2	348	18 - 21	3300	86
MPE-350C-24	8000	4000	24	21.6 - 28.8	14.6	350.4	28.8 - 33.6	1500	87
MPE-350C-36	8000	4000	36	32.4 - 39.6	9.7	349.2	41.4 - 46.8	1500	88
MPE-350C-48	8000	4000	48	43.2 - 52.8	7.3	350.4	55.2 - 62.4	470	88.5

Notes:

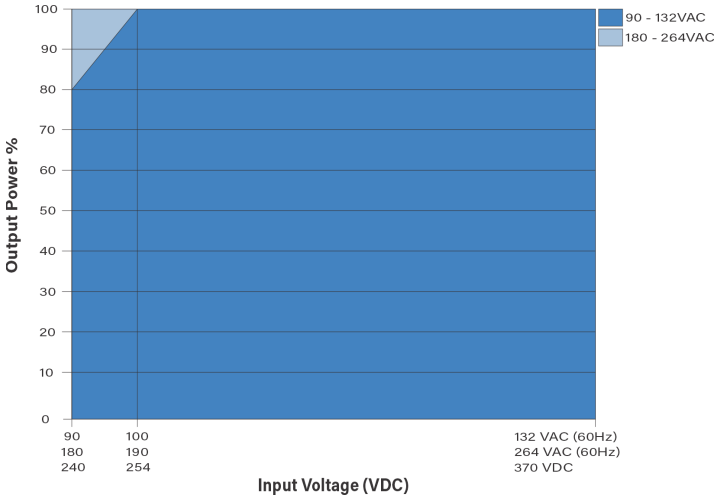
1. The "tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor.
2. Output short circuit protection is provided by a "hiccup mode" circuit. The unit recovers automatically when the fault condition is removed.
3. Input-output isolation is tested for 60 seconds.
4. A temperature derating of 5°C/1000m is required for operating altitude greater than 2000m.
5. The output voltage can be adjusted by the ADJ knob. Turn clockwise to increase and counterclockwise to decrease.
6. Isolation resistance is given for input - output, input - ground and output - ground. It is tested at 500VDC with an ambient temperature of 25±5°C and relative humidity <95%RH, no condensation.
7. One magnetic beed should be coupled with the output load during CE/RE testing.

For conformal coating option, add the suffix "**-CC**" to the model number (e.g. **MPE-350C-05-CC**).

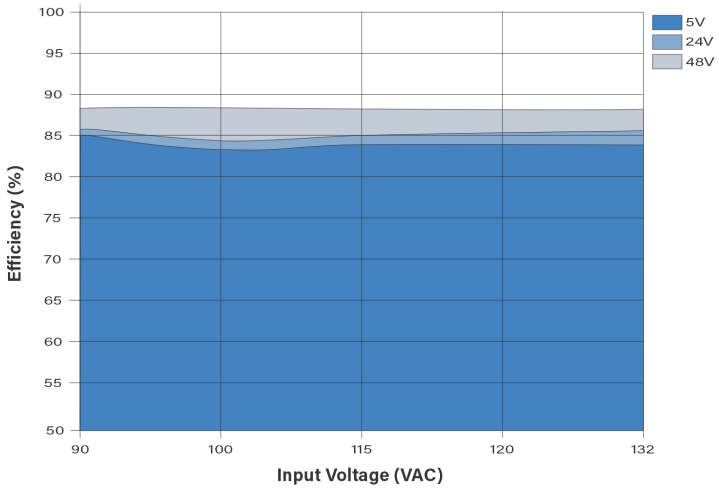
Temperature Derating (90-132VAC, 180-264VAC, 240-270VDC)



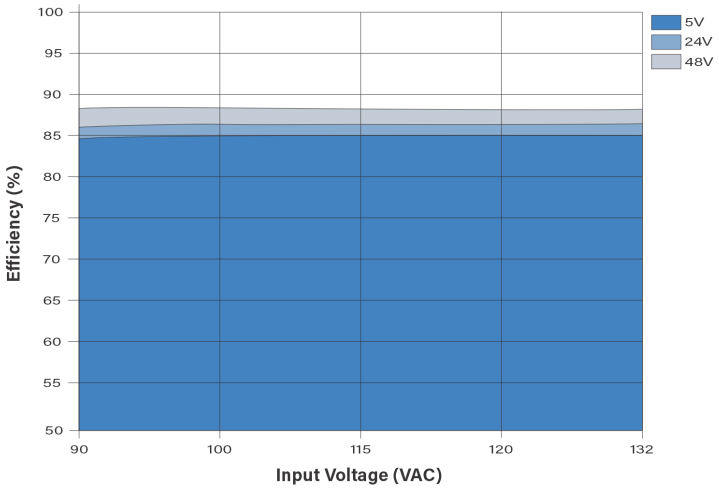
Input Voltage Derating



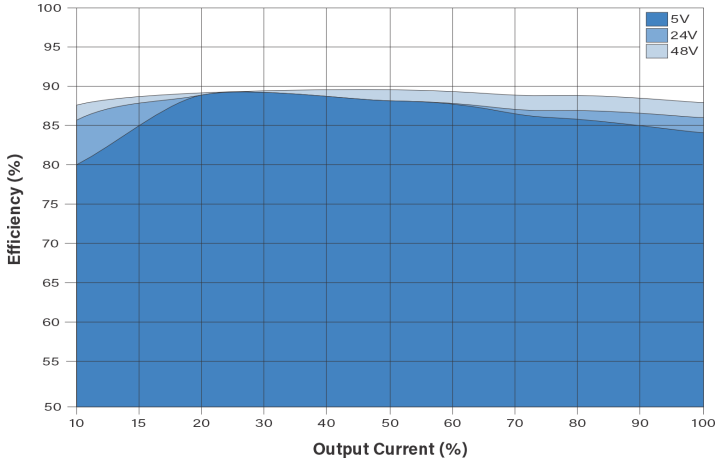
Efficiency vs Input Voltage (Full Load) (90-132VAC)



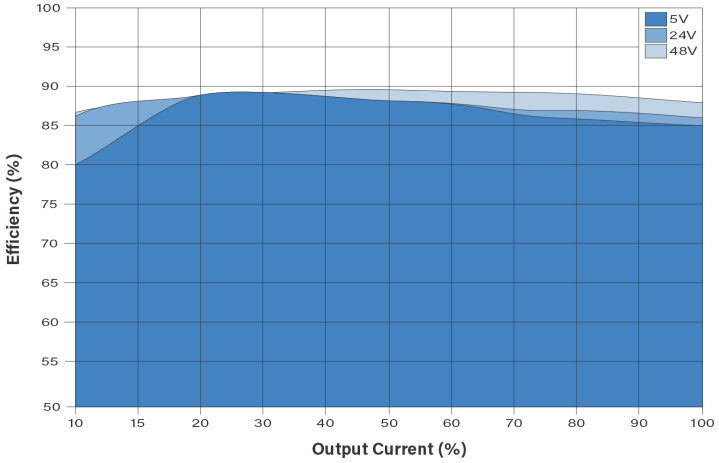
Efficiency vs Input Voltage (Full Load) (180-264VAC)



Efficiency vs Output Load (115VAC)



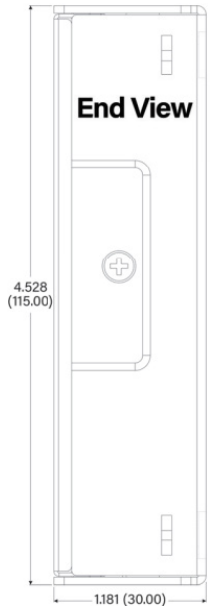
Efficiency vs Output Load (230VAC)

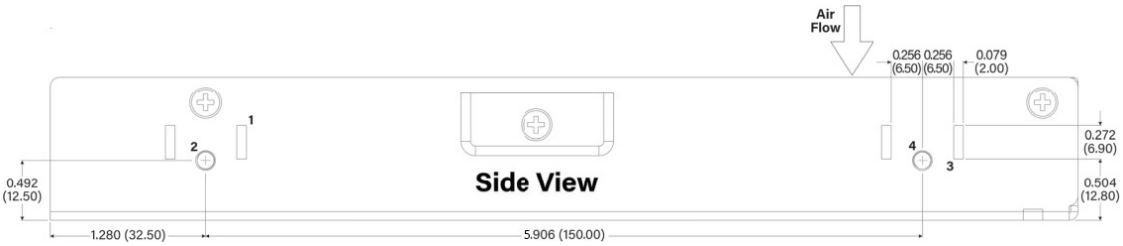


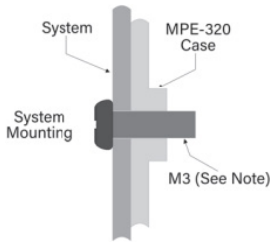
EMI Characteristics

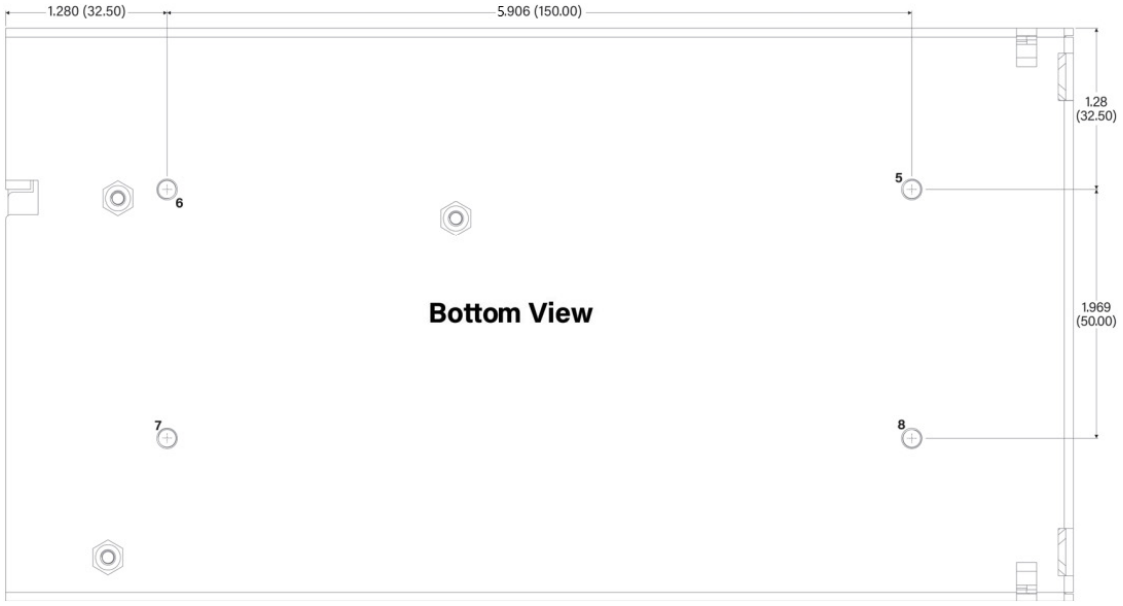
Parameter	Standard	Criteria	Level
Radiated Emissions (RE)	CISPR32/EN55032		A
Conducted Emissions (CE)	CISPR32/EN55032		A
ESD	IEC/EN61000-4-2	A	Contact ±6kV/Air ±8KV
RS	IEC/EN61000-4-3	A	10V/m
EFT	IEC/EN61000-4-4	A	±2KV
Surge	IEC/EN61000-4-5	A	line to line ±2KV/line to ground ±4KV
CS	IEC/EN61000-4-6	A	10 Vr.m.s
Voltage Dips, Short, Interruption	IEC/EN61000-4-11	B	0%, 70%

Mechanical Diagrams









Pin-Out	
Pin	**Function**
1	+Vo
2	+Vo
3	+Vo
4	-Vo
5	-Vo
6	-Vo
7	GRND
8	AC(N)
9	AC(L)

Notes:

- All dimensions are typical in inches (mm)
- ADJ: Output voltage adjustable
- Wire range: 22-12AWG
- Connector tightening torque: M3.5, Max 0.8N · m Max
- General tolerances: ±0.039 (±1.00)
- 1 - 8 any position must be connected to PE

Weight:

- 24.69 oz (700g)

Switch	AC Input	DC Input
115V	90 - 132 VAC	-
230V	180 - 264 VAC	240 - 370 VDC

Position	Screw	Length L (max)	Torque (max)
1 - 4	M4	5mm	0.9N · m
5 - 8	M4	3mm	0.9N · m