MPE-150C

150W, High Isolation AC/DC Power Supplies

Key Features:

- 150W Output Power
- 85-264 VAC Input
- 4,000 VAC Isolation
- Efficiency to 89%
- -30°C to +70°C Temp
- Meets EN 55032 B
- >300 kHour MBTF
- OVC Class III
- 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	85		264	VAC
		DC Input	120		370	VDC
Input Frequency			47		63	Hz
Input Current		115 VAC			3.0	A
		230 VAC			1.5	
Inrush Current (Cold Start)		115 VAC		30		A
		230 VAC		60		
Leakage Current		240 VAC			0.75	mA

Output

Parameter	Conditions		Min.	Typ.	Max.	Units
Output Voltage Accuracy	Full Load	Normal Temperature		±1		%
		Low/High Temperature		±3		
Line Regulation	Rated Load			±0.5		%
Load Regulation	0-100% Load			±0.5		%
Ripple & Noise (20 MHz)		12, 15V Output			150	mV P - P
		24, 36, 48V Outputs			200	
Hold-Up Time		115 VAC	8			ms
		230 VAC	16			
Standby Power Consumption					0.5	W
Power Derating	85 - 100 VAC	-30°C to -25°C	5			%/°C
	12V	+45°C to +70°C	2			
	15, 24, 36, 48V	+50°C to +70°C	2.5			
	Input Voltage Derating	85 - 100 VAC	1.33			%/VAC
Temperature Coefficient	0 to 50°C, 230 VAC			±0.03		%/°C
Short Circuit Protection	Recovery time <5s after short circuit removed		Hiccup, Continuous, Self-Recovery			
Over Current Protection	For more than 5 seconds, turn off output, restart		110			%Io

General

Parameter	Conditions		Min.	Typ.	Max.	Units
Isolation Voltage	Input - Ground	Leakage <10 mA	2,000			VAC
	Input - Output		4,000			
	Output - Ground		1,250			
Isolation Resistance	See Note 6		100			MΩ
Switching Frequency				65		kHz

EMI Characteristics

Parameter	Standard	Criteria	Level
Radiated Emissions, See Page 4	CISPR32/EN 55032		Class B
Conducted Emissions	CISPR32/EN 55032		Class B

Environmental

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

Physical

Case Size	6.26 x 3.82 x 1.18 in (See Mechanical Drawing on Page 4)
Case Material	Metal (AL1100, SGCC)
Weight	14.46 oz (410g) (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				

MicroPower Direct
46 Eastman Street
Unit 1
Easton, MA 02375
USA

T: (781) 344-8226
F: (781) 344-8481
E: sales@micropowerdirect.com
W: www.micropowerdirect.com

MICROPOWER DIRECT

www.micropowerdirect.com

Model Selection Guide

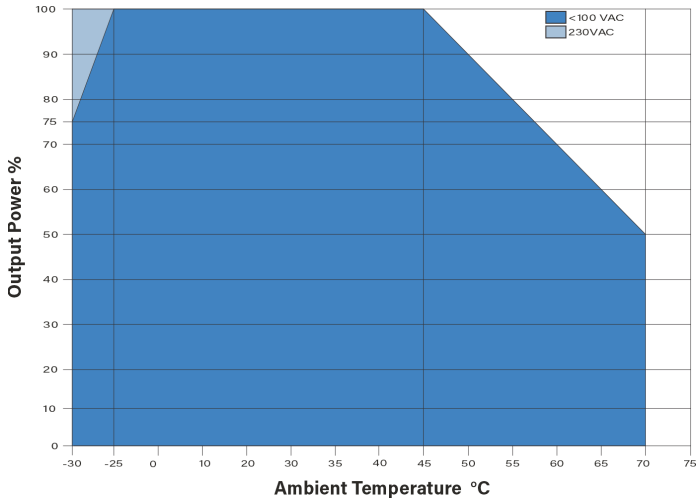
Model Number	Input		Output				Over Voltage Protection (Max) (VDC)	Output Capacitive Load (μF Max)	Efficiency (%, Typ)
	Current (mA)		Voltage (VDC)	Voltage Adjustable Range (VDC)	Current (A, Max)	Power (W)			
	115 VAC	230 VAC							
MPE-150C-12	4000	2000	12	10.2 - 13.8	12.5	150	18	10000	86
MPE-150C-15	4000	2000	15	13.5 - 18	10	150	21.75	6000	87
MPE-150C-24	4000	2000	24	21.6 - 28.8	6.5	156	33.6	2400	88
MPE-150C-36	4000	2000	36	32.4 - 39.6	4.3	154.8	48.6	1200	88
MPE-150C-48	4000	2000	48	43.2 - 52.8	3.3	158.4	60	600	89

Notes:

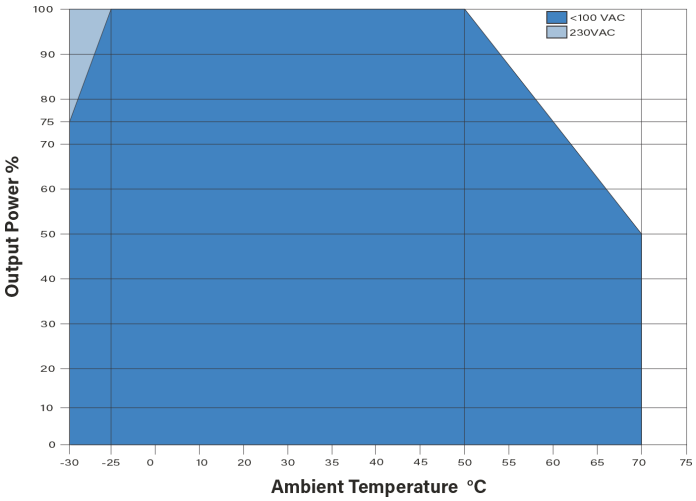
1. The "tip and barrel method" is used for ripple and noise test, output parallel 47uF electrolytic capacitor and 0.1uF ceramic capacitor.
2. Output short circuit protection is provided by a "hiccup mode" circuit. The unit recovers automatically when the fault condition is removed.
3. Input-output isolation 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.

For conformal coating option, add the suffix "**-CC**" to the model number (e.g. **MPE-150C-12-CC**).

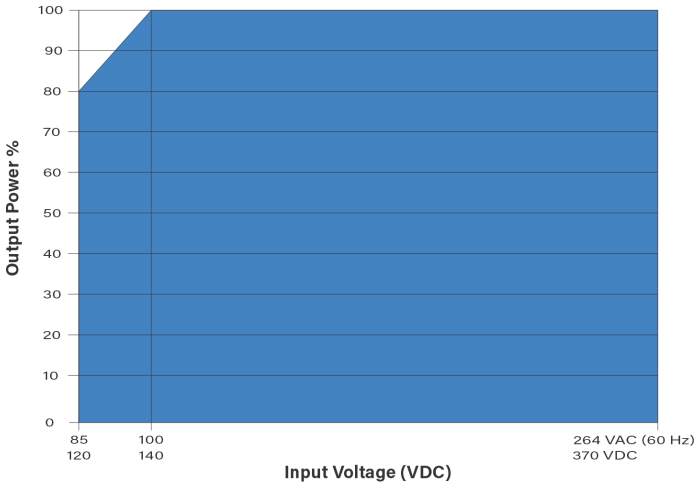
Temperature Derating: 12V



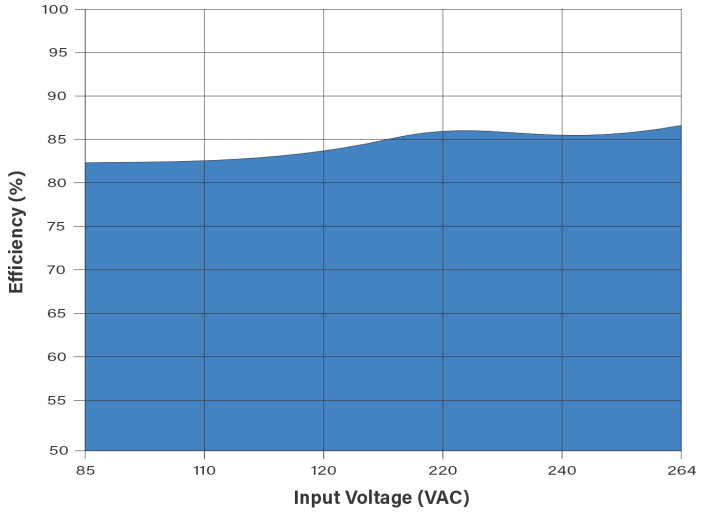
Temperature Derating: 15, 24, 36, 48V



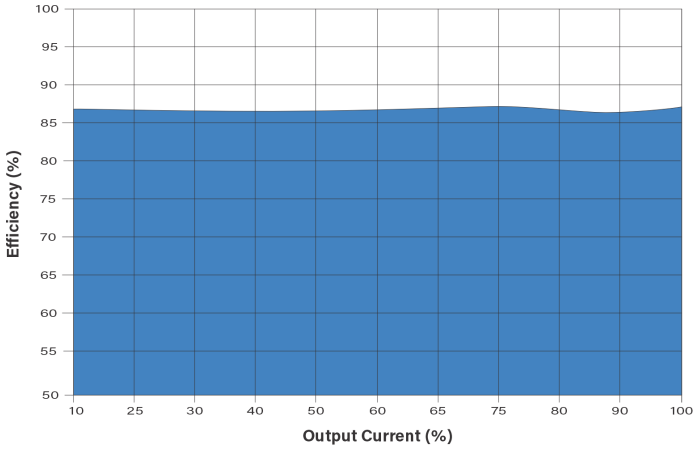
Input Voltage Derating



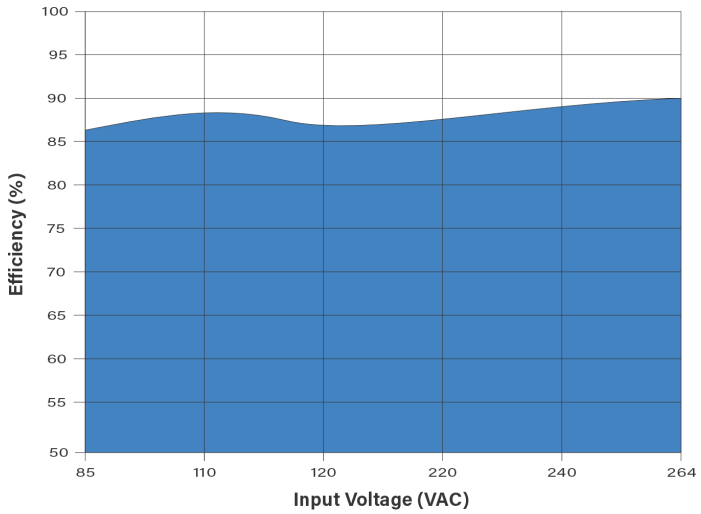
Efficiency vs Input Voltage: 12V (Full Load)



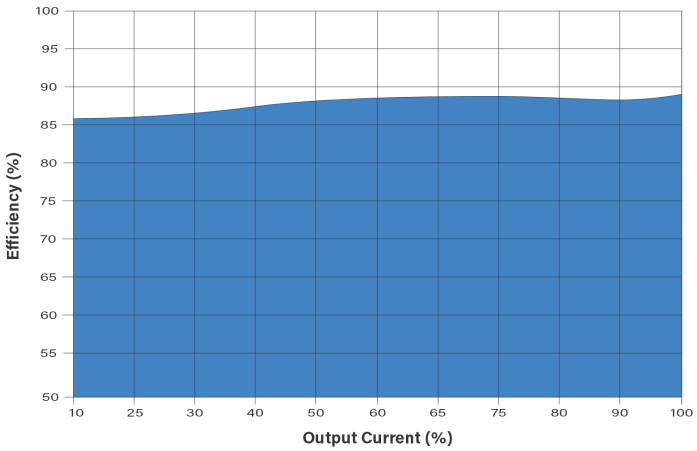
Efficiency vs Output Load: 12V



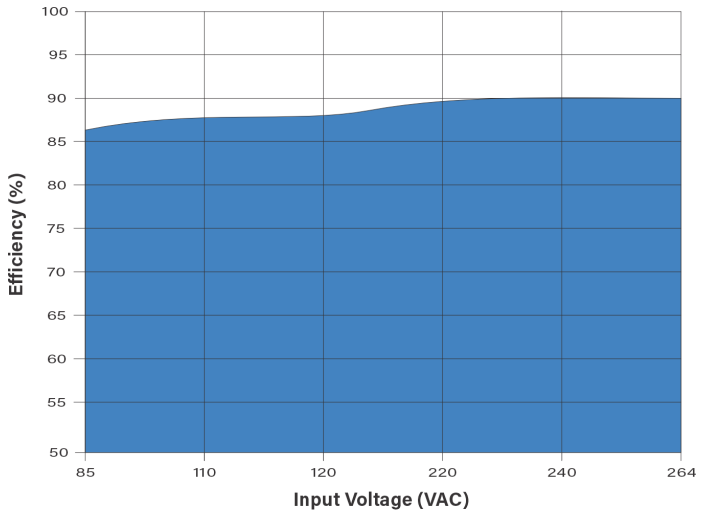
Efficiency vs Input Voltage: 24V (Full Load)



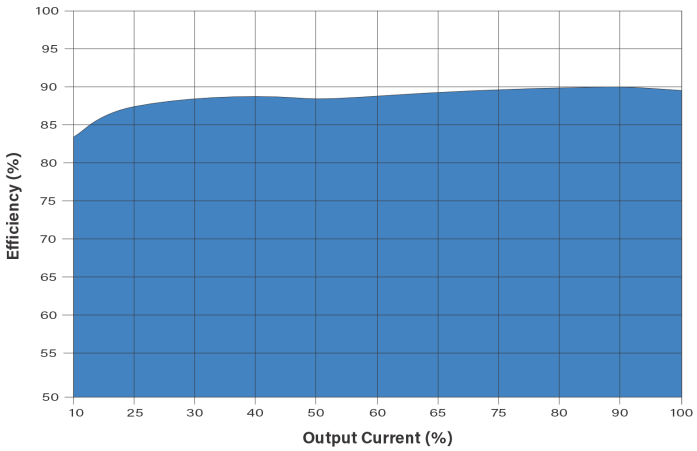
Efficiency vs Output Load: 24V



Efficiency vs Input Voltage: 48V (Full Load)



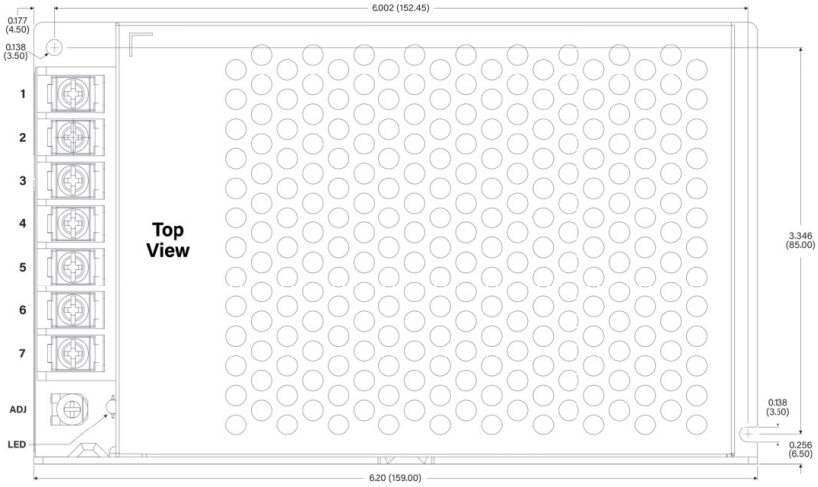
Efficiency vs Output Load: 48V

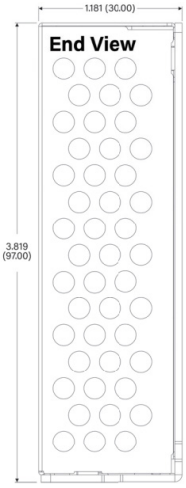


EMI Characteristics

Parameter	Standard	Criteria	Level
Radiated Emissions (RE)	CISPR32/EN55032		B
Conducted Emissions (CE)	CISPR32/EN55032		B
Harmonic Current	IEC/EN61000-3-2		A (≤80% load)
ESD	IEC/EN61000-4-2	A	Contact ±6kV/Air ±8KV
RS	IEC/EN61000-4-3	A	10V/m
EFT	IEC/EN61000-4-4	A	±4KV
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	100% dip 1 period, 30% dip 25 periods, 100% interruption 250 periods

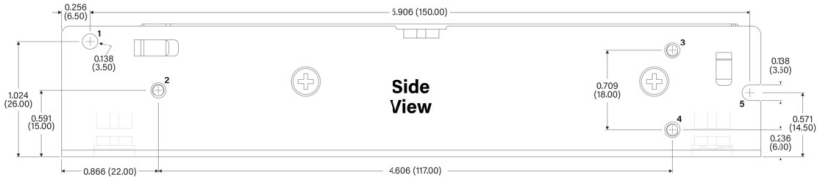
Mechanical Diagrams



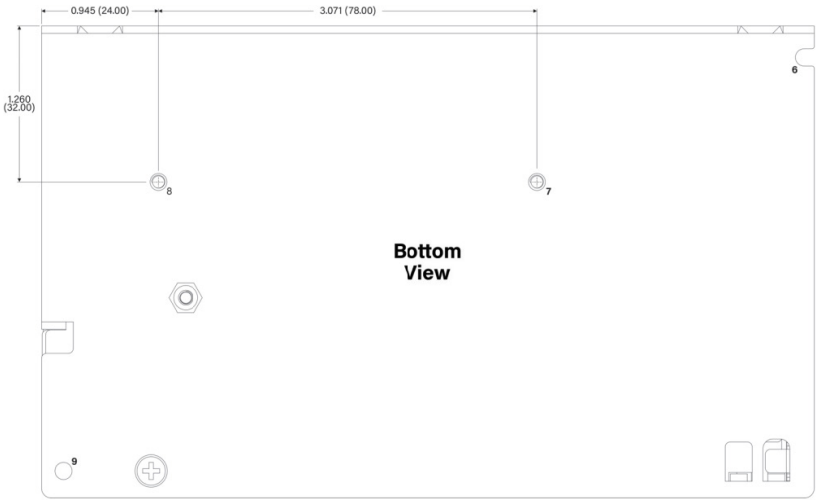


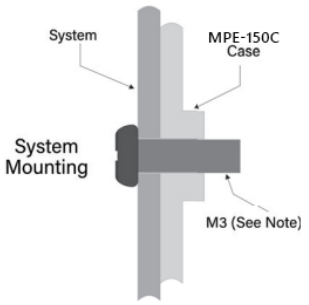
THIRD ANGLE PROJECTION

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



Position	Screw Spec	Length of Locking Screw L (max)	Torque (max)
2 - 4	M3	5mm	0.4N · m
7 - 8	M3	3mm	0.4N · m





Notes:

- All dimensions are typical in inches (mm)
- ADJ: Output voltage adjustable
- Wire range: Input: 22-10AWG (16-10AWG for pin 3)
  Output: 12V, 15V: 14-10AWG
  24V, 36V: 18-10AWG
  48V: 20-10AWG
- Connector tightening torque: M3.5, Max 0.8N · m Max
- General tolerances: ±0.039 (±1.00)
- 1 - 9 any position must be connected to PE

Weight:

- 14.46 oz (410g)