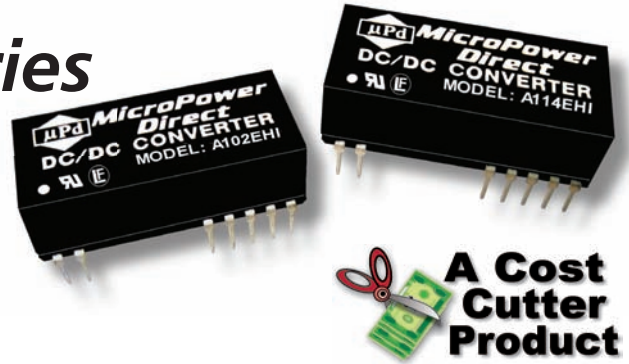


# A100EHI Series

## Low Cost, Miniature DIP 1W, Very High Isolation DC/DC Converters



### Key Features:

- 1W Output Power
- 6,000 VDC Isolation
- UL Approved (File E245422)
- -40°C to 85°C Operation
- 24 Pin DIP Case
- 5V and 12V Inputs
- Single & Dual Outputs
- 16 Standard Models
- 3.5 MH MTBF
- **LOWEST COST!!**



RoHS Compliant



### MicroPower Direct

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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

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Range	5 VDC Input	4.5	5.0	5.5	VDC
	12 VDC Input	10.8	12.0	13.2	
Input Filter	Internal Capacitor				
Short Circuit Input Power				1,500	mW

#### Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±2.0	±4.0	%
Output Voltage Balance	Dual Output , Balanced Loads		±1.0	±3.0	%
Line Regulation	For Vin Change of 1%			±1.2	%/%
Load Regulation, 5V Input	I <sub>out</sub> = 10% to 100%			±15	%
Load Regulation, 12V Input	I <sub>out</sub> = 10% to 100%			±10	%
Ripple & Noise (20 MHz) (Note 1)			75	150	mV P - P
Output Power Protection		120			%
Temperature Coefficient			±0.01	±0.03	%/°C
Output Short Circuit	Momentary (1.0 Seconds)				

#### General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	60 Seconds	6,000			VDC
Isolation Resistance	500 VDC	1,000			MΩ
Isolation Capacitance	100 kHz, 1V		2		pF
Switching Frequency			250		kHz

#### Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-40		+85	°C
Storage Temperature Range		-55		+125	°C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing			95	%

#### Physical

Case Size	1.27 x 0.62 x 0.40 Inches (32.3 x 15.7 x 10.2 mm)
Case Material	Non-Conductive Black Plastic (UL94-V0)
Weight	0.42 Oz (12g)

#### Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	3.5			MHours
Safety Standards	UL 1950, EN 60950, IEC 60950				
Safety Approvals	UL, cUL; File No. E245422				

#### Absolute Maximum Ratings

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Surge (1 Sec)	5 VDC Input	-0.7		7.5	VDC
	12 VDC Input	-0.7		15.0	
Lead Temperature	1.5 mm From Case For 10 Sec.			300	°C
Internal Power Dissipation	All Models			1,500	mW

Caution: Exceeding Absolute Maximum Ratings may damage the module. These are not continuous operating ratings.

## Model Selection Guide

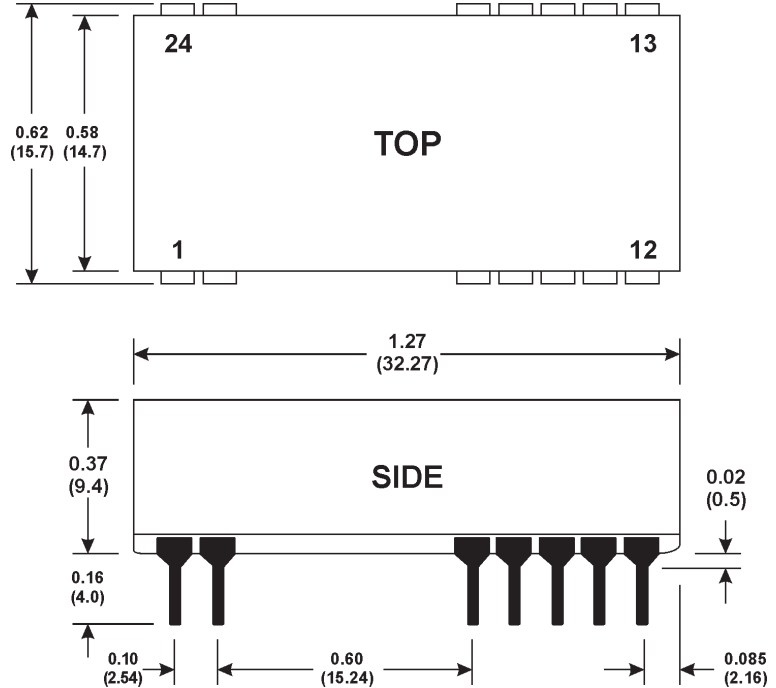
Model Number	Input				Output			Efficiency (% Typ)	Fuse Rating Slow-Blow (mA)
	Voltage (VDC)		Current (mA)		Voltage (VDC)	Current (mA, Max)	Current (mA, Min)		
	Nominal	Range	Full-Load	No-Load					
A101EHI	5	4.5 - 5.5	277	60	5.0	200	20.0	72	1,000
A102EHI	5	4.5 - 5.5	256	60	9.0	111	12.0	78	1,000
A103EHI	5	4.5 - 5.5	247	60	12.0	84	9.0	81	1,000
A104EHI	5	4.5 - 5.5	250	60	15.0	67	7.0	80	1,000
A105EHI	5	4.5 - 5.5	277	60	±5.0	±100	±10.0	72	1,000
A106EHI	5	4.5 - 5.5	267	60	±9.0	±56	±6.0	75	1,000
A107EHI	5	4.5 - 5.5	256	60	±12.0	±42	±5.0	78	1,000
A108EHI	5	4.5 - 5.5	256	60	±15.0	±33	±4.0	78	1,000
A111EHI	12	10.8 - 13.2	111	40	5.0	200	20.0	75	250
A112EHI	12	10.8 - 13.2	104	40	9.0	111	12.0	80	250
A113EHI	12	10.8 - 13.2	103	40	12.0	84	9.0	81	250
A114EHI	12	10.8 - 13.2	105	40	15.0	67	7.0	79	250
A115EHI	12	10.8 - 13.2	114	40	±5.0	±100	±10.0	73	250
A116EHI	12	10.8 - 13.2	111	40	±9.0	±56	±6.0	75	250
A117EHI	12	10.8 - 13.2	105	40	±12.0	±42	±5.0	79	250
A118EHI	12	10.8 - 13.2	105	40	±15.0	±33	±4.0	79	250

### Notes:

- Output load regulation is specified for a load change of 10% to 100%.
- These units should not be operated with a load under 10% of full load. Operation at no-load may cause damage to the unit.
- These converters will operate without external components. However, when measuring output ripple, it is recommended that an external ceramic capacitor be placed from the +Vout pin to the -Vout pin for single output units and from each output to common for dual output units. An input capacitor will enhance stability over temperature and input line variations. Recommended capacitor values are given in the table above. For applications requiring very low output noise levels, a simple LC filter should be effective.
- Dual output units may be connected to provide a 10V, 18V, 24V or 30 VDC output. To do this, connect the load across the positive (+Vout) and negative (-Vout) outputs and float the output common.
- It is recommended that a fuse be used on the input of a power supply for protection. See the Model Selection table above for the correct rating.

Vin	Input Capacitor	Vout	Output Capacitor
5 VDC	4.7 $\mu$ F	5 VDC	4.7 $\mu$ F
12 VDC	2.2 $\mu$ F	9 VDC	2.2 $\mu$ F
		12 VDC	1.0 $\mu$ F
		15 VDC	0.47 $\mu$ F

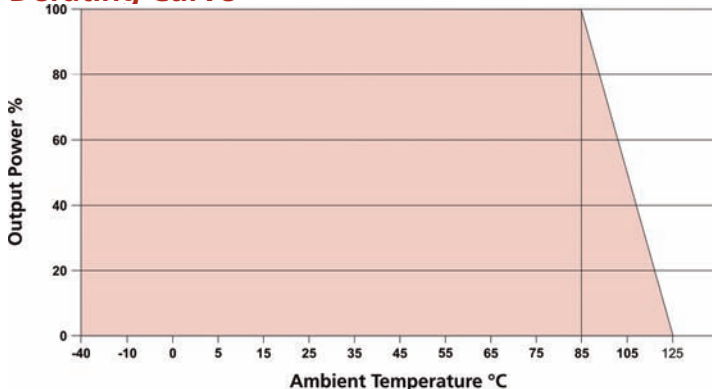
## Mechanical Dimensions



### Mechanical Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ±0.01 (±0.25)
- All pins are on a 0.1 (2.54) pitch
- All pins diameters are 0.02 (0.5)

## Derating Curve



## Pin Connections

Pin	Single	Dual	Pin	Single	Dual
1	+Vin	+Vin	10, 15	-Vout	Common
2	-Vin	-Vin	12, 13	+Vout	+Vout
8, 17	NC	-Vout			



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