

LCP100E Series

Low Cost, 1W Miniature SMT DC/DC Converters



Key Features:

- 1W Output Power
- Miniature SMT Case
- DCP01 Series Replacement
- 1,500 VDC Isolation
- Short Circuit Protected
- >3.5 MHour MTBF
- DIP Ver Available (ACP100E)
- **LOW, LOW COST!!**



Tape/Reel Available



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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	4.50	5.0	5.50	VDC
	12 VDC Input	10.80	12.0	13.20	
Input Filter	Internal Capacitor				

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±3.0		%
Line Regulation	For Vin Change of 1%			±1.2	%
Load Regulation, See Note 1	See Model Selection Guide				
Ripple & Noise (20 MHz), See Note 3	50% Iout		20		mV P - P
	100% Iout		50	75	
Temperature Coefficient				±0.03	%/°C
Output Short Circuit, See Note 4	Continuous (Autorecovery)				

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	60 Seconds	1,500			VDC
Isolation Resistance	500 VDC	1,000			MΩ
Isolation Capacitance	100 kHz, 1V		25		pF
Switching Frequency			100		kHz

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-40	+25	+85	°C
Operating Temperature Range	Case			+100	°C
Storage Temperature Range		-55		+125	°C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing			95	%

Physical

Case Size	0.77 x 0.42 x 0.18 Inches (19.5 x 10.53 x 4.5 mm)				
Case Material	Non-Conductive Black Plastic (UL-94V0)				
Weight	0.05 Oz (1.4g)				

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	3.5			MHours
Shock & Vibration, See Note 5	Meets MIL-STD-202F, IEC68-2-6				

Absolute Maximum Ratings

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Surge (1 Sec)	5 VDC Input	-0.7		9.0	VDC
	12 VDC Input	-0.7		18.0	
Lead Temperature	1.5 mm From Case For 10 Sec			260	°C

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

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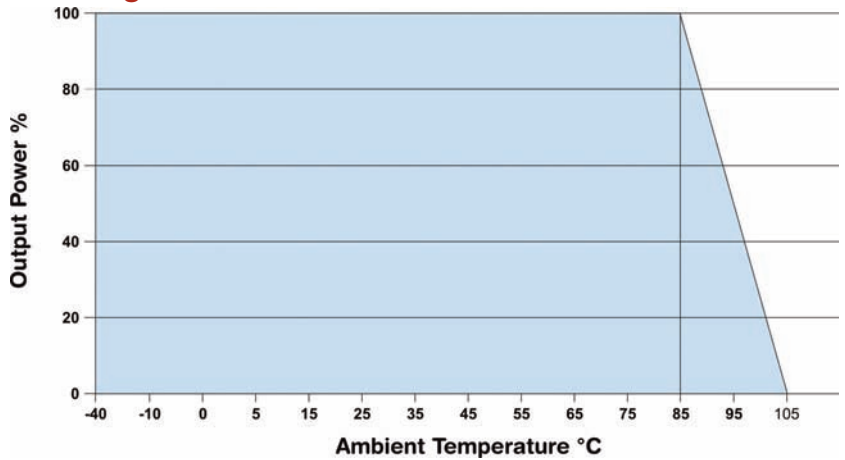
Model Number	Input				Output			Load Regulation		Efficiency (% Typ)	Fuse Rating Slow-Blow (mA)
	Voltage (VDC)		Current (mA)		Voltage (VDC)	Current (mA, Max)	Current (mA, Min)	(% Typ)	(% Max)		
	Nominal	Range	Full-Load	No-Load							
LCP101E	5	4.5 - 5.5	270	50	5.0	200.0	20.0	12.8	15.0	74	500
LCP102E	5	4.5 - 5.5	256	50	9.0	111.0	12.0	8.3	15.0	78	500
LCP103E	5	4.5 - 5.5	260	50	12.0	83.0	9.0	6.8	15.0	77	500
LCP104E	5	4.5 - 5.5	263	50	15.0	67.0	7.0	6.3	15.0	76	500
LCP111E	12	10.8 - 13.2	114	20	5.0	200.0	20.0	12.8	15.0	73	200
LCP112E	12	10.8 - 13.2	127	20	9.0	111.0	12.0	8.3	15.0	74	200
LCP113E	12	10.8 - 13.2	110	20	12.0	83.0	9.0	6.8	15.0	76	200
LCP114E	12	10.8 - 13.2	111	20	15.0	67.0	7.0	6.3	15.0	75	200

Notes:

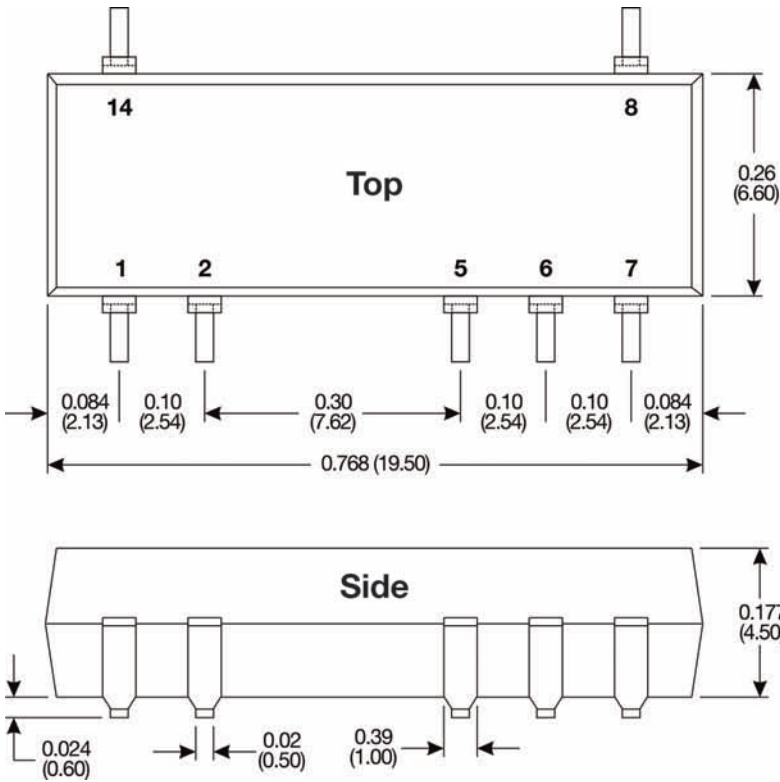
- Output load regulation is specified for a load change of 10% to 100%.
- These units should not be operated with a load under 10% of full load. Operation at no-load may cause damage to the unit.
- These converters will operate without external components. However, when measuring output ripple, it is recommended that an external ceramic capacitor be placed from the +Vout pin to the -Vout pin. An input capacitor will enhance stability over temperature and input line variations. Recommended capacitor values are given in the table at right. For applications requiring very low output noise levels, a simple LC filter should be effective.
- Given for frequency range of 5 to 500 Hz and PSD of 0.0248 g²/Hz. Tested on X, Y & Z axis for 60 minutes.
- 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 μF	5 VDC	10.0 μF
12 VDC	2.2 μF	9 VDC	4.7 μF
		12 VDC	2.2 μF
		15 VDC	1.0 μF

Derating Curve



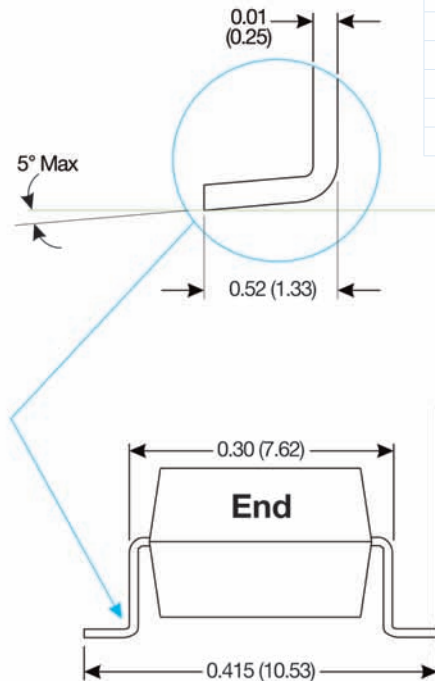
Mechanical Dimensions



Pin Connections

Pin	Function
1	+Vin
2	-Vin
5	-Vout
6	+Vout
7	NC
8	NC
14	NC

NC = No Connection



Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ±0.01 (±0.25)
- Pin 1 is marked by a "dot" or indentation on the top of the unit



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