

# LSC200EHI Series

## Very High Isolation, 2W Short Circuit Protected DC/DC Converters



### Key Features:

- 2W Output Power
- 6,000 VDC Isolation
- Short Circuit Protected
- -40°C to 85°C Operation
- Miniature SMT Case
- 5V, 12 and 24V Inputs
- Nine Standard Models
- 3.5 MH MTBF
- **LOW COST!!**



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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	
	24 VDC Input	21.6	24.0	26.4	
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, 5V Output	I <sub>out</sub> = 10% to 100%		±12.8	±15	%
Load Regulation, 12V Output	I <sub>out</sub> = 10% to 100%		±6.8	±15	%
Load Regulation, 15V Output	I <sub>out</sub> = 10% to 100%		±6.3	±15	%
Ripple & Noise (20 MHz)	See Note 1		150	200	mV P - P
Temperature Coefficient				±0.03	%/°C
Output Short Circuit	Continuous (Autorecover)				

#### 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		10		pF
Switching Frequency			35		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	0.94 x 0.60 x 0.295 Inches (23.86 x 15.24 x 7.5 mm)				
Case Material	Non-Conductive Black Plastic (UL94-V0)				
Weight	0.134 Oz (3.8g)				

#### Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	3.5			MHours

#### 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	
	24 VDC Input	-0.7		28.0	
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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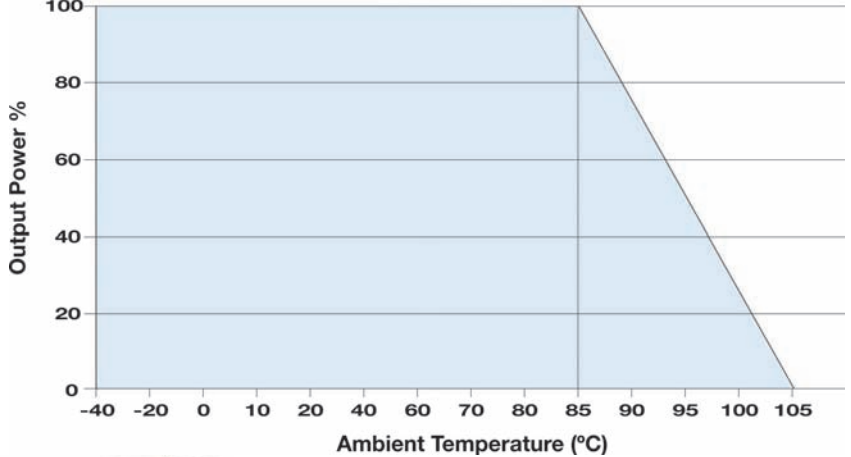
Model Number	Input				Output			Efficiency (% Typ)	Fuse Rating Slow-Blow (mA)
	Voltage (VDC)		Current (mA)		Voltage (VDC)	Current (mA, Max)	Current (mA, Min)		
	Nominal	Range	Full-Load	No-Load					
LSC201EHI	5	4.5 - 5.5	526	100	5.0	400	40.0	76	1,500
LSC202EHI	5	4.5 - 5.5	506	100	12.0	167	17.0	79	1,500
LSC203EHI	5	4.5 - 5.5	512	100	15.0	133	13.0	78	1,500
LSC211EHI	12	10.8 - 13.2	219	100	5.0	400	40.0	76	1,500
LSC212EHI	12	10.8 - 13.2	208	100	12.0	167	17.0	80	1,500
LSC213EHI	12	10.8 - 13.2	211	100	15.0	133	13.0	79	1,500
LSC221EHI	24	21.6 - 26.4	108	50	5.0	400	40.0	77	500
LSC222EHI	24	21.6 - 26.4	104	50	12.0	167	17.0	80	500
LSC223EHI	24	21.6 - 26.4	107	50	15.0	133	13.0	78	500

Notes:

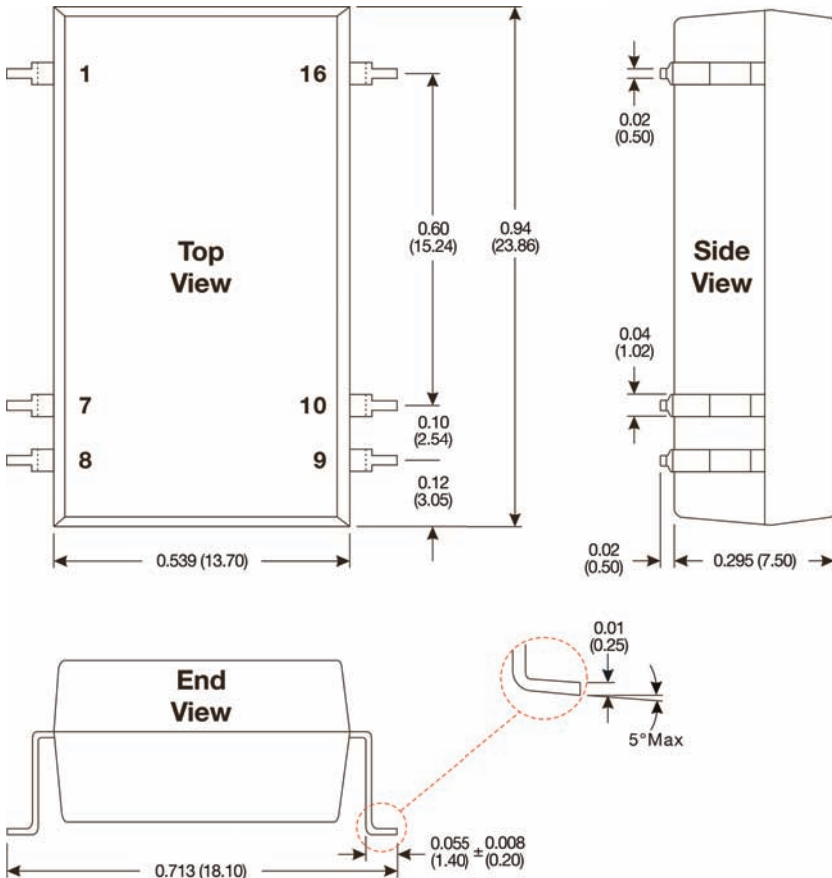
- Output load regulation is specified for a load change of 10% to 100%.
- These units should not be operated with a load under 10% of full load. Operation at no-load will not damage the unit, but they may not meet all specifications.
- These converters will operate without external components. However, 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.
- 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	10.0 $\mu$ F
12 VDC	2.2 $\mu$ F	12 VDC	2.2 $\mu$ F
24 VDC	1.0 $\mu$ F	15 VDC	1.0 $\mu$ F

Derating Curve



Mechanical Dimensions

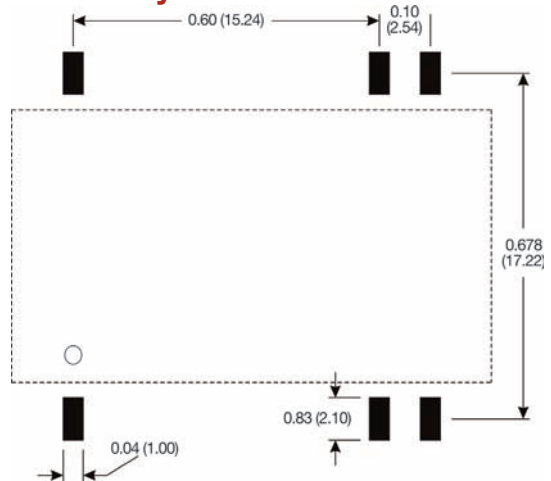


Pin Connections

Pin	Dual
1	-Vin
7	NC
8	NC
9	+Vout
10	-Vout
16	+Vin

NC = No Connection

Solder Layout



Mechanical Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ±0.01 (±0.25)



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