



MicroPower Direct



3W, Single & Dual Output
Surface Mountable
DC/DC Converters
LF300RW Series

Key Features

- Miniature SMT Package
- 3W Output Power
- Tight Line/Load Regulation
- 1,500 VDC Isolation
- CECC00802 Reflow (2801C)
- Low Cost

Electrical Specifications

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

Input

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Start Voltage	12 VDC Input	4.5	6.0	8.0	VDC
	24 VDC Input	8.0	12.0	16.0	
	48 VDC Input	16.0	24.0	32.0	
Input Filter	All Models	π (Pi) Filter			
Reverse Polarity Input Current	All Models			0.5	A
	All Models			1,500	mW

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±0.5	±1.0	%
Output Voltage Balance	Balanced Load		±0.5	±1.0	%
Line Regulation	For V_{IN} = Min to Max		±0.1	±0.3	%
Load Regulation	For I_{OUT} = 10% to 100%		±0.3	±1.0	%
Ripple & Noise (20 MHz)			50	75	mV P-P
Ripple & Noise (20 MHz)	Over Line Load & Temp.			100	mV P-P
Ripple & Noise (20 MHz)				10	mV rms
Output Power Protection		120			%
Transient Recovery Time	25 % Load Change		200	500	mSec
Transient Response Deviation			±2.0	±6.0	%
Temperature Coefficient			±0.01	±0.02	%/°C
Output Short Circuit	Continuous				

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	60 Seconds	1,500			VDC
Isolation Resistance	500 VDC	1,000			MW
Isolation Capacitance	100 KHz, 1V		65	100	pF
Switching Frequency			300		KHz

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range		-40	+25	+71	°C
Storage Temperature Range		-40		+125	°C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing			95	%

Physical

Case Size	1.27 x 0.74 x 0.40 inches (32.3 x 18.8 x 10.2 mm)
Case Material	Non-Conductive Black Plastic
Weight	0.35 Oz (10.0g)

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL STD 217F, 25°C, Grnd Benign		1.0		M Hours

Absolute Maximum Ratings

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Surge (1 sec)	12 VDC Input	-0.7		25.0	VDC
	24 VDC Input	-0.7		50.0	
	48 VDC Input	-0.7		100.0	
Internal Power Dissipation	All Models			2,500	mW

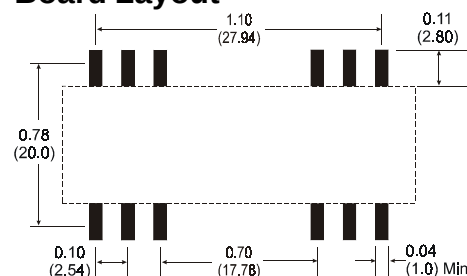
Caution: Exceeding these values can damage the module. These are not continuous operating ratings.

Model Selection Guide

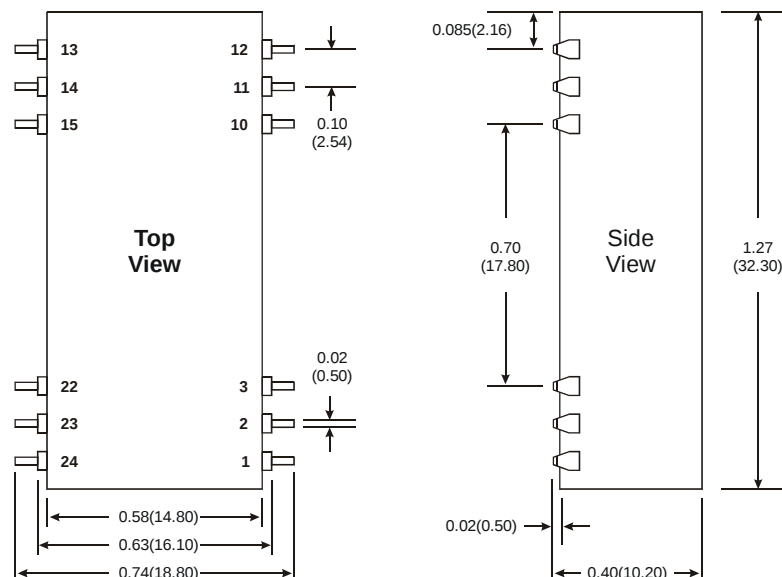
Model Number	Input					Output			Efficiency % , Typ.
	Voltage (VDC)		Current (mA)		Reflected Ripple Current (mA, Typ.)	Voltage (VDC)	Current (mA, Max.)	Current (mA, Min.)	
	Nominal	Range	Full-Load	No-Load					
LF301RW	12.0	9.0 - 18.0	257.0	20.0	25.0	3.3	700.0	70.0	75
LF302RW	12.0	9.0 - 18.0	316.0	20.0	25.0	5.0	600.0	60.0	79
LF303RW	12.0	9.0 - 18.0	305.0	20.0	25.0	12.0	250.0	25.0	82
LF304RW	12.0	9.0 - 18.0	305.0	20.0	25.0	15.0	200.0	20.0	82
LF305RW	12.0	9.0 - 18.0	321.0	20.0	25.0	±5.0	±300.0	±30.0	78
LF306RW	12.0	9.0 - 18.0	309.0	20.0	25.0	±12.0	±125.0	±12.5	81
LF307RW	12.0	9.0 - 18.0	309.0	20.0	25.0	±15.0	±100.0	±10.0	81
LF311RW	24.0	18.0 - 36.0	127.0	5.0	15.0	3.3	700.0	70.0	76
LF312RW	24.0	18.0 - 36.0	156.0	5.0	15.0	5.0	600.0	60.0	80
LF313RW	24.0	18.0 - 36.0	151.0	5.0	15.0	12.0	250.0	25.0	83
LF314RW	24.0	18.0 - 36.0	151.0	5.0	15.0	15.0	200.0	20.0	83
LF315RW	24.0	18.0 - 36.0	158.0	5.0	15.0	±5.0	±300.0	±30.0	79
LF316RW	24.0	18.0 - 36.0	152.0	5.0	15.0	±12.0	±125.0	±12.5	82
LF317RW	24.0	18.0 - 36.0	152.0	5.0	15.0	±15.0	±100.0	±10.0	82
LF321RW	48.0	36.0 - 75.0	63.0	3.0	10.0	3.3	700.0	70.0	76
LF322RW	48.0	36.0 - 75.0	78.0	3.0	10.0	5.0	600.0	60.0	80
LF323RW	48.0	36.0 - 75.0	75.0	3.0	10.0	12.0	250.0	25.0	83
LF324RW	48.0	36.0 - 75.0	75.0	3.0	10.0	15.0	200.0	20.0	83
LF325RW	48.0	36.0 - 75.0	79.0	3.0	10.0	±5.0	±300.0	±30.0	79
LF326RW	48.0	36.0 - 75.0	79.0	3.0	10.0	±12.0	±125.0	±12.5	82
LF327RW	48.0	36.0 - 75.0	76.0	3.0	10.0	±15.0	±100.0	±10.0	82

- Notes:**
1. Transient recovery time is measured to within a 1% error band for an output step change of 75% to 100%.
 2. When measuring output ripple, it is recommended that an external 1 μ F capacitor be placed from +Vout to -Vout for single output models and from each output to ground for dual output models.
 3. For operation in ambient temperatures above +71°C, derate output power linearly by -3.3%/1°C.

Board Layout



Mechanical Dimensions



Pin Connections

Pin	Single	Dual
1, 2	-Vin	-Vin
3, 11	NC	NC
10	NC	Common
12	NC	-Vout
13	+Vout	+Vout
14, 22	NC	NC
15	-Vout	Common
23, 24	+Vin	+Vin

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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