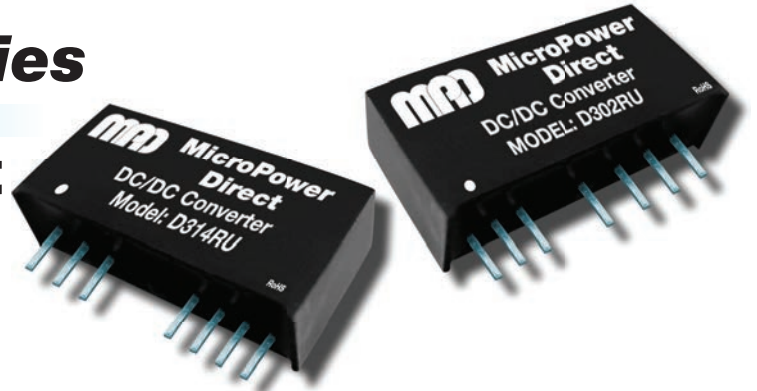


D300RU Series

Single & Dual Output 3W SIP, Wide Input DC/DC Converters



Key Features:

- 3W Output Power
- 4:1 Input Voltage Range
- 1,600 VDC Isolation
- Short Circuit Protected
- Miniature SIP Case
- Single & Dual Outputs
- 800 kH MTBF
- Industry Standard Pin-Out



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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	12 VDC Input	4.5	12.0	18.0	VDC
	24 VDC Input	9.0	24.0	36.0	
	48 VDC Input	18.0	24.0	72.0	
Start-Up Voltage	12 VDC Input	3.0	4.0	4.5	VDC
	24 VDC Input	4.5	6.0	9.0	
	48 VDC Input	8.5	12.0	18.0	
Under Voltage Shutdown	12 VDC Input		3.5	4.0	VDC
	24 VDC Input			8.0	
	48 VDC Input			16.0	

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±0.5	±1.0	%
Output Voltage Balance	Dual Outputs, Balanced Loads		±0.5	±2.0	%
Line Regulation	Vin = Min to Max		±0.3	±0.5	%
Load Regulation	Iout = 25% to 100%		±0.5	±1.0	%
Ripple & Noise (20 MHz), See Note 1	Iout = 10% to 100%		50	75	mV P - P
	Over Line, Load & Temp			100	
Transient Recovery Time, See Note 2	25% Load Step Change		300	500	µSec
Transient Response Deviation			±3.0	±5.0	%
Temperature Coefficient				±0.02	%/°C
Output Short Circuit	Continuous (Autorecovery)				

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	60 Seconds	1,600			VDC
Isolation Resistance	500 VDC	1,000			MΩ
Isolation Capacitance	100 kHz, 1V		200		pF
Switching Frequency	Iout = 100%		350		kHz

Remote On/Off, See Note 3

Parameter	Conditions	Min.	Typ.	Max.	Units
Supply On				0.6	VDC
Supply Off		2.7		15.0	VDC
Standby Input Current			1.0	2.5	mA
Control Common	Referenced to Negative Input (pin 1)				

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-40	+25	+85	°C
	Case			+105	°C
Storage Temperature Range		-55		+125	°C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing			95	%

Physical

Case Size	0.86 x 0.44 x 0.37 Inches (21.80 x 11.20 x 9.30 mm)				
Case Material	Non-Conductive Black Plastic (UL94-V0)				
Weight	0.17 Oz (4.8g)				

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	800			kHours

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	
Lead Temperature	1.5 mm From Case For 10 Sec			260	°C

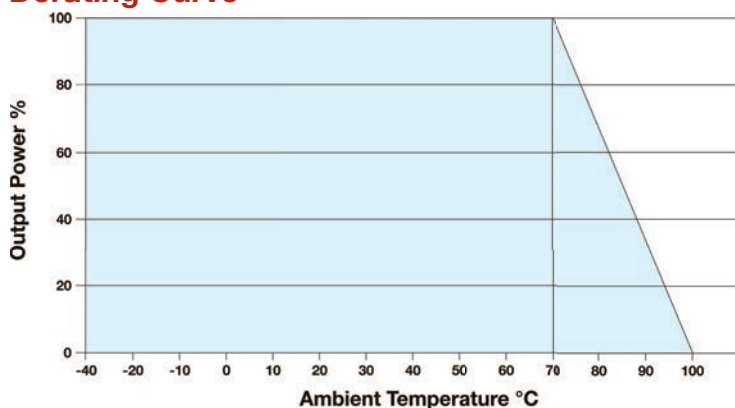
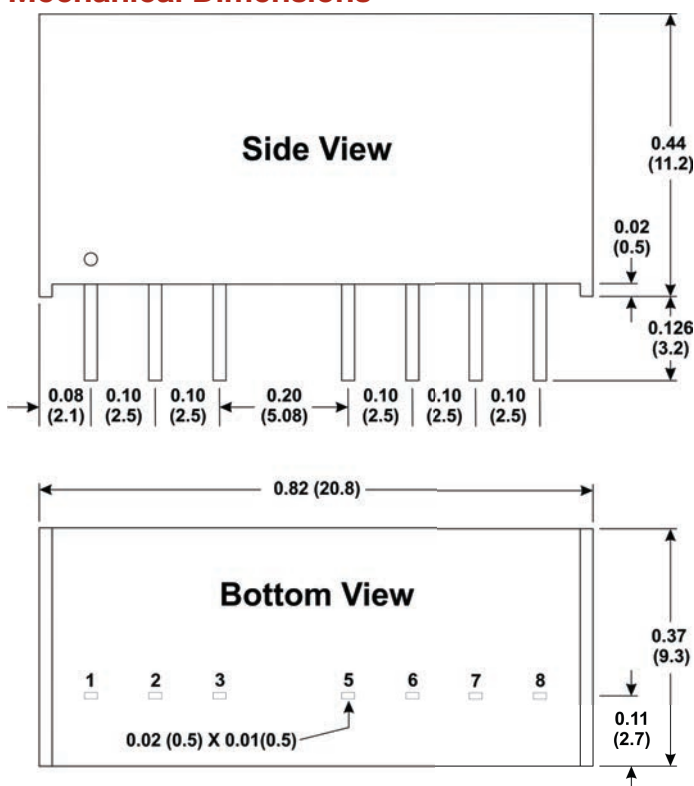
Caution: Exceeding Absolute Maximum Ratings may damage the module. These are not continuous operating ratings.

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Model Number	Input				Output (See Note 4)			Capcitive Load (μF, Max)	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						
D301RU	12	4.5 - 18.0	260	60	3.3	700.0	175.0	1,760	74	1,500
D302RU	12	4.5 - 18.0	320	60	5.0	600.0	150.0	1,000	78	1,500
D303RU	12	4.5 - 18.0	313	60	12.0	250.0	63.0	170	80	1,500
D304RU	12	4.5 - 18.0	313	60	15.0	200.0	50.0	110	80	1,500
D305RU	12	4.5 - 18.0	313	60	±5.0	±300.0	±75.0	±470	80	1,500
D306RU	12	4.5 - 18.0	313	60	±12.0	±125.0	±31.0	±100	80	1,500
D307RU	12	4.5 - 18.0	313	60	±15.0	±100.0	±25.0	±47	80	1,500
D311RU	24	9.0 - 36.0	128	25	3.3	700.0	175.0	1,760	75	700
D312RU	24	9.0 - 36.0	156	25	5.0	600.0	150.0	1,000	80	700
D313RU	24	9.0 - 36.0	154	25	12.0	250.0	63.0	170	81	700
D314RU	24	9.0 - 36.0	154	25	15.0	200.0	50.0	110	81	700
D315RU	24	9.0 - 36.0	158	25	±5.0	±300.0	±75.0	±470	79	700
D316RU	24	9.0 - 36.0	156	25	±12.0	±125.0	±31.0	±100	80	700
D317RU	24	9.0 - 36.0	154	25	±15.0	±100.0	±25.0	±47	81	700
D321RU	48	18.0 - 75.0	65	15	3.3	700.0	175.0	1,760	74	350
D322RU	48	18.0 - 75.0	79	15	5.0	600.0	150.0	1,000	79	350
D323RU	48	18.0 - 75.0	79	15	12.0	250.0	63.0	170	79	350
D324RU	48	18.0 - 75.0	79	15	15.0	200.0	50.0	110	79	350
D325RU	48	18.0 - 75.0	79	15	±5.0	±300.0	±75.0	±470	79	350
D326RU	48	18.0 - 75.0	79	15	±12.0	±125.0	±31.0	±100	79	350
D327RU	48	18.0 - 75.0	78	15	±15.0	±100.0	±25.0	±47	80	350

Notes:

- When measuring output ripple, it is recommended that an external 0.47 μ F 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.
- Transient recovery is measured to within a 1% error band for a 75-100% load change.
- An open collector switch (or equivalent) may be used to turn the unit on/off by controlling the voltage level at Pin 3. The maximum sink current at the on/off pin during a logic low is 1 mA. The maximum allowable leakage current of a switch connected to the on/off pin is 1 mA. If the on/off pin (Pin 3) is left open, the unit operates.
- No load operation will not damage these units, but they may not meet all spec's. Recommended minimum load levels are given in the table above.
- The converter should be connected to a low ac-impedance source. An input source with a highly inductive impedance may affect the stability of the converter. In applications where the converter output loading is high and input power is supplied over long lines, it may be necessary to use a capacitor on the input to insure start-up. In this case, it is recommended that a low Equivalent Series Resistance (ESR <1.0 Ω at 100 kHz) capacitor be mounted close to the converter. A 3.3 μ F is recommended for 12V input models and a 1.5 μ F for 24 & 48V units.
- Dual output units may be connected to provide a 10V, 24V, or 30 VDC output. To do this, connect the load across the +Vout and -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.

Derating Curve**Mechanical Dimensions****Pin Connections**

Pin	Single	Dual	Pin	Single	Dual
1	-Vin	-Vin	6	+Vout	+Vout
2	+Vin	+Vin	7	-Vout	Common
3	Remote ON/OFF		8	NC	-Vout
5	NC	NC			

NC = No Connection



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Mechanical Notes:

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