

# D300RP Series



## Short Circuit Protected Regulated, 3W SIP DC/DC Converters

### Key Features:

- 3W Output Power
- Short Circuit Protection
- Tight Line/Load Regulation
- 1,000 VDC Isolation
- Miniature SIP Case
- >1.5 MHour MTBF
- 15 Standard Models

### 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	π (Pi) Filter				
Reverse Polarity Input Current				0.3	A

#### Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy				±2.0	%
Line Regulation	For Vin Min to Max			±0.5	%
Load Regulation (Note 1)				±0.5	%
Ripple & Noise (20 MHz) (Note 2)				75	mV P - P
Output Power Protection		120			%
Temperature Coefficient				±0.02	%/°C
Output Short Circuit	Continuous				

#### General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	60 Seconds	1,000			VDC
Isolation Resistance	500 VDC	1,000			MΩ
Isolation Capacitance	100 kHz, 1V		60		pF
Switching Frequency			40		kHz

#### Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-25	+25	+71	°C
Operating Temperature Range	Case	-25		+85	°C
Storage Temperature Range		-40		+125	°C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing			95	%

#### Physical

Case Size	1.26 x 0.32 x 0.55 Inches (32.0 x 8.0 x 14.0 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, Grd Benign	1.5			MHours

#### 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	
	24 VDC Input	-0.7		30.0	
Lead Temperature	1.5 mm From Case For 10 Sec			260	°C
Internal Power Dissipation	All Models			450	mW

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

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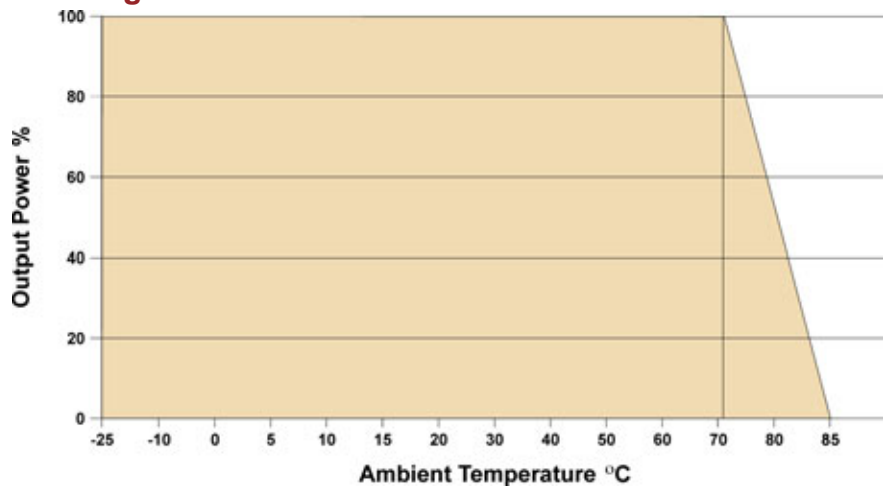
## Model Selection Guide

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					
D301RP	5	4.5 - 5.5	895	90	5.0	600.0	60.0	67	1,500
D302RP	5	4.5 - 5.5	895	90	9.0	333.0	33.0	67	1,500
D303RP	5	4.5 - 5.5	833	90	12.0	250.0	25.0	72	1,500
D304RP	5	4.5 - 5.5	833	90	15.0	200.0	20.0	72	1,500
D305RP	5	4.5 - 5.5	857	90	24.0	125.0	12.5	70	1,500
D311RP	12	10.8 - 13.2	373	60	5.0	600.0	60.0	67	700
D312RP	12	10.8 - 13.2	373	60	9.0	333.0	33.0	67	700
D313RP	12	10.8 - 13.2	347	60	12.0	250.0	25.0	72	700
D314RP	12	10.8 - 13.2	347	60	15.0	200.0	20.0	72	700
D315RP	12	10.8 - 13.2	357	60	24.0	125.0	12.5	70	700
D321RP	24	21.6 - 26.4	192	30	5.0	600.0	60.0	65	350
D322RP	24	21.6 - 26.4	192	30	9.0	333.0	33.0	65	350
D323RP	24	21.6 - 26.4	179	30	12.0	250.0	25.0	70	350
D324RP	24	21.6 - 26.4	179	30	15.0	200.0	20.0	70	350
D325RP	24	21.6 - 26.4	174	30	24.0	125.0	12.5	72	350

### Notes:

- Output load regulation is specified for a load change of 20% to 100%.
- When measuring output ripple, it is recommended that an external 0.33  $\mu$ F ceramic capacitor be placed from the +Vout pin to the -Vout pin.
- Operation at no-load will not damage these units. However, they may not meet all specifications.
- These do not require external components to operate, but the use of a low ESR capacitor (approximately 10  $\mu$ F, ESR <1.0 $\Omega$  at 100 kHz) mounted close to the converter input pins is recommended.
- It is recommended that a fuse be used on the input of a power supply for protection. See the table above for the correct rating.

### Derating Curve



### Capacitive Load

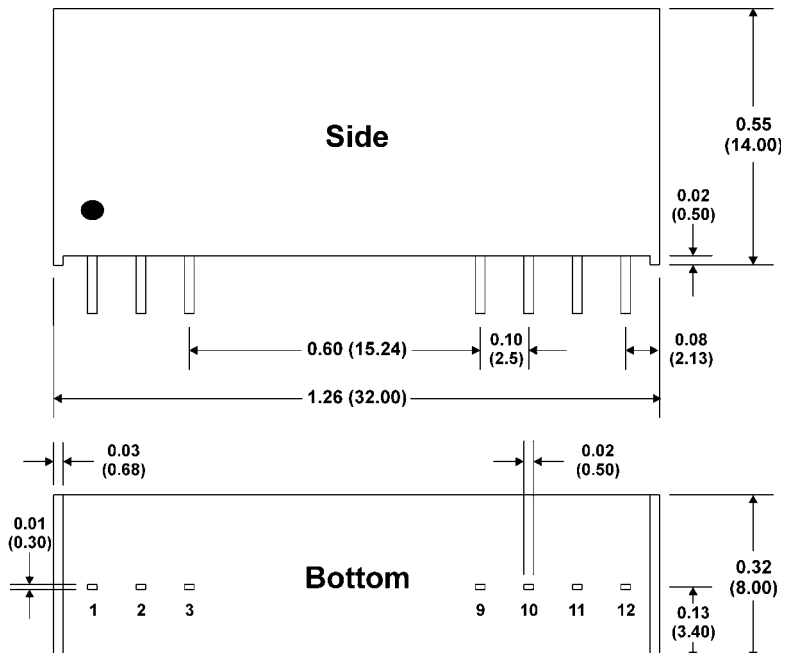
$\mu$ F Max
470

### Pin Connections

Pin	Function
1	+Vin
2	NC
3	NC
9	NC
10	-Vout
11	+Vout
12	-Vin

NC: No Connection

### Mechanical Dimensions



### Notes:

All dimensions are typical in inches (mm)

Tolerance x.xx =  $\pm 0.01$  ( $\pm 0.25$ )

Pin 1 is marked by a "dot" or indentation on the side of the unit



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