



Wide Input Voltage Range 30 Watt Dc-Dc Converter



FEATURES:

- 30W DIL PACKAGE
- Recognized By UL 60950-1
- 2:1 WIDE INPUT RANGE
- 100% BURNED IN
- HIGH EFFICIENCY
- UL 94V-0 PACKAGE MATERIAL
- CUSTOMIZED SOLUTIONS AVAILABLE
- RoHS COMPLIANT
- 3 YEARS WARRANTY



Specifications typical at TA=25°C, nominal input voltage and rated output current unless otherwise specified

Part Number	Input Voltage	Input Current		Output Voltage	Output Current	Efficiency
	Vdc	No-Load (mA TYP)	Full Load (mA TYP)	Vdc	Full Load (mA)	%TYP
96D-12S03RNL	9-18	30	2179	3.3	6500	82
96D-12S05RNL	9-18	30	3012	5	6000	83
96D-12S12RNL	9-18	30	2941	12	2500	85
96D-12S15RNL	9-18	30	2941	15	2000	85
96D-24S03RNL	18-36	25	1089	3.3	6500	82
96D-24S05RNL	18-36	25	1506	5	6000	83
96D-24S12RNL	18-36	25	1470	12	2500	85
96D-24S15RNL	18-36	25	1470	15	2000	85
96D-48S03RNL	36-72	20	544	3.3	6500	82
96D-48S05RNL	36-72	20	753	5	6000	83
96D-48S12RNL	36-72	20	735	12	2500	85
96D-48S15RNL	36-72	20	735	15	2000	85
96D-12D05RNL	9-18	30	3048	±5	±3000	83
96D-12D12RNL	9-18	30	2941	±12	±1250	85
96D-12D15RNL	9-18	30	2941	±15	±1000	85
96D-24D05RNL	18-36	25	1506	±5	±3000	83
96D-24D12RNL	18-36	25	1470	±12	±1250	85
96D-24D15RNL	18-36	25	1470	±15	±1000	85
96D-48D05RNL	36-72	20	753	±5	±3000	83
96D-48D12RNL	36-72	20	735	±12	±1250	85
96D-48D15RNL	36-72	20	735	±15	±1000	85

Input Specifications

Parameters	Conditions	Min	Typ	Max	Units
Voltage Types				2:1	
Filter	Pi Network				
Protection	Fuse Recommended				

Output Specifications (Temperature Coefficient : ±0.05%/°C)

Parameters	Conditions	Min	Typ	Max	Units
Voltage Tolerance	Full load @ Vin(nom.)			±2	%
Short Circuit/ Restart	Hiccup, Automatic Recovery				
Over Load Protection			150		%
Line Regulation	Single & Dual (H/L to L/L)			±0.5	%
Load Regulation	Single & Dual, Balance Load (F.L-50%F.L)			±0.5	%
Cross Regulation	Dual (25% to 100% Load)			±5	%
Ripple & Noise	BW=DC To 20MHz (with 1uF Cap.)			100	mVp-p
Transient response setting time	50% Step Load Change			350	us
Capacitive load				4800	uF
External Trim Adj. Range	±10% of Output Voltage				

General Specifications

Parameters	Conditions	Min	Typ	Max	Units
Isolation Resistance	500Vdc	1000			MΩ
Switching Frequency			270		KHz
Operating Temperature		-40		100	°C
Humidity	Non Condensing			95	%
Cooling	Free air Convection				
Case material			Nickel coated copper with no-conductive base		
Weight			65		g
Dimensions			51.0X51.0X10.3		
Potting Material			Epoxy (UL94V-0 rated)		
Radiated Emissions	EN55022		CLASS A		
Conducted Emissions	EN55022		CLASS A		
Efficiency		82			%
Isolation Voltage	For 10 seconds			3000	VDC
MTBF	MIL-HDBK-217F @25°C , Ground Benign	400000			Hours
Storage Temperature		-50		+100	°C
Case Temperature				+95	°C
Isolation Capacitance				2500	pF



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Temperature Derating Graph	Part Number
	<p>96D - 24 S 05 R NL A B C D E F</p> <p>A : Series B : Input Voltage C : Single Output(S), DUAL(D) D : Output Voltage E : Regulated(R) F : RoHs Version</p>

Recommended Test Circuit	
<p>12V & 24V & 48V:Cin 100uF,100V</p>	<p>12V :Cin 100uF,25V 24V & 48V:Cin 10uF,100V</p>

Suggest adding input external filter(C1,C2,L) to meet conducted emissions (EN55022 class A) requirement for the module . These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.

	<p>12V: C1 =330uF/100V L=12uH 12V: C2 =100uF/100V C3=N/A 24V,48V: C1=220uF/100V L=12uH 24V,48V: C2 =100uF/100V 24V: C3=N/A 48V: C3=1000pF/2KV</p>
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Markings and dimensions
<p>Unit : mm Tolerance : XX.X ±0.5 , XX.XX ±0.25</p>

PIN Connection								
PIN	1	2	3	4	5	6	7	8
SINGLE	+Vin	-Vin	NO PIN	Ctrl	NO PIN	+Vout	-Vout	Trim
DUAL	+Vin	-Vin	NO PIN	Ctrl	+Vout	Common	-Vout	Trim